




## Southern Company Operations

### Technical Shared Services (TSS) Projects

# Contractor Environmental, Health, and Safety (EH&S) Specifications

Date	Approval
Updated 05/24/2023	 Senior Vice President– Technical Shared Services (TSS)

## Contents

[ADMINISTRATIVE](#) (sections 2 through 17)  
[GENERAL SAFETY REQUIREMENTS](#) (sections 18 through 51)  
[MAJOR EQUIPMENT](#) (sections 52 through 61)  
[OCCUPATIONAL HEALTH](#) (sections 62 through 71)  
[ELECTRICAL SAFETY](#) (sections 72 through 78)  
[ENVIRONMENTAL PROTECTION](#) (sections 79 through 85)  
[APPENDICES](#) (sections 86 through 90)

1.0 ENVIRONMENTAL, HEALTH, AND SAFETY POLICY .....	5
ADMINISTRATIVE .....	6
2.0 RESPONSIBILITY .....	6
2.1 Contractor Responsibilities .....	6
3.0 SAFETY PLANS .....	7
4.0 SUBCONTRACTOR AND VENDOR MANAGEMENT .....	8
5.0 NONCOMPLIANCE .....	8
6.0 PLANNING AND HAZARD ANALYSIS .....	9
6.1 Hazard Analysis .....	9
6.2 Job Briefing (JSA, PJB, and So Forth) .....	9
7.0 BEHAVIOR-BASED SAFETY (STEP) .....	10
8.0 INCIDENT MANAGEMENT .....	11
8.1 Notification and Investigation .....	11
8.2 Root Cause Analysis / Event Learning .....	12
8.3 Best Practices / Lessons Learned .....	13
9.0 TRAINING .....	13
10.0 REGULATORY AGENCY INSPECTIONS / REGULATORY AGENCY COMPLAINTS .....	14
11.0 NON-ENGLISH-SPEAKING WORKFORCE .....	14
12.0 STOP WORK AUTHORITY .....	15
13.0 EH&S ASSESSMENTS .....	15
14.0 EH&S STAFFING .....	16
15.0 FIRST AID PERSONNEL AND FACILITIES .....	16
16.0 DEVIATION REQUESTS .....	17
17.0 SAFETY AWARDS AND RECOGNITION .....	18
17.1 Safety Awards and Recognition .....	18
17.2 Contractors' Safety Awards Programs .....	19
GENERAL SAFETY REQUIREMENTS .....	19
18.0 HOUSEKEEPING .....	20
19.0 SANITATION .....	20
20.0 ILLUMINATION .....	20
21.0 MATERIAL STORAGE AND HANDLING .....	21
22.0 ACCIDENT PREVENTION SIGNS AND TAGS .....	21
23.0 BARRICADES .....	21
24.0 LADDERS AND STAIRWAYS .....	21
25.0 SCAFFOLD SAFETY .....	22
25.1 Engineered Scaffold Requirements .....	23
25.2 Scaffold Erection and Dismantling .....	24
25.3 Pre-Use Inspection and Tagging .....	24
25.4 Applying and Removing Scaffold Tags .....	24
25.5 Suspended Scaffolds (Suspension Scaffolds) .....	25
25.6 Suspended Scaffold Equipment Inspections .....	25
25.7 Preventive Maintenance .....	25
25.8 Rescue Provisions .....	25

25.9	Custom Designed and Fabricated Scaffold (Contractor Owned)	25
26.0	FALL PROTECTION	26
26.1	Floor Opening, Wall Opening, and Guardrail Removal	27
27.0	STEEL ERECTION	27
28.0	RIGGING AND LIFTING PLANS	28
28.1	Critical Lifts	28
28.2	Intermediate Lifts	29
28.3	Lifts Less Than 2,000 lb	29
29.0	CRANE-SUSPENDED PERSONNEL PLATFORMS	29
30.0	CHAINS, SLINGS, AND MISCELLANEOUS RIGGING ACCESSORIES	30
31.0	CHAIN HOISTS, LEVER HOISTS, AND JACKS	30
32.0	TOOLS, POWER AND HAND	31
33.0	EXCAVATION AND TRENCHING	32
33.1	Hydro Excavation Operations	33
33.2	Pump Unit	34
33.3	Hose Assemblies	34
33.4	Air Excavation (Air Knife)	35
33.5	Encountering Unknown or Abandoned Underground Utilities	35
33.6	Working Near Natural Gas or Underground Pipelines Including D.O.T. Regulated	35
34.0	TUNNELS, CAISSONS, AND COFFERDAMS	36
35.0	BLASTING	36
36.0	WELDING, CUTTING, AND HEATING OPERATIONS	37
37.0	PRESSURE VESSEL, TANK, AND PIPING SYSTEM TESTING	38
37.1	Test Pressure	40
37.2	Relief Valves	40
37.3	Test Gauges	40
37.4	Temporary Test Blanks	40
37.5	Test Limitations	40
37.6	Hydrostatic Testing	41
37.7	Pneumatic Testing	41
38.0	COMPRESSED GAS CYLINDERS	42
39.0	TRANSPORTING PERSONNEL	42
40.0	WORKING OVER OR NEAR WATER	43
41.0	COMMERCIAL DIVING OPERATIONS	43
42.0	DEMOLITION	44
43.0	CONCRETE AND MASONRY CONSTRUCTION	45
44.0	FIBER-REINFORCED PLASTICS	46
45.0	LINE BREAK	46
46.0	FALLING OBJECT PROTECTION	47
47.0	CONFINED SPACE ENTRY	48
48.0	FLOOR OPENING, WALL OPENING, AND GUARDRAIL REMOVAL	48
49.0	ELEVATORS	48
49.1	Existing Plant and Stack Elevators	49
49.2	Elevator Maintenance, Inspection, and Repair	50
50.0	PERSONAL PROTECTIVE EQUIPMENT (PPE) (COVER ALL PPE CATEGORIES)	50
51.0	FIRE PROTECTION AND PREVENTION	51
MAJOR EQUIPMENT		51
52.0	QUALIFYING EQUIPMENT OPERATORS	51
53.0	CRANES, DERRICKS, AND POWERED HOISTS	53
54.0	MOBILE EQUIPMENT TRANSITING NEAR ENERGIZED ELECTRIC LINES	54
55.0	MOBILE EQUIPMENT WORKING NEAR ENERGIZED LINES	55
55.1	Permit-Required Criteria	57
56.0	MOBILE ELEVATED WORK PLATFORMS (AERIAL LIFTS) AND BUCKET TRUCKS	57
57.0	FORKLIFTS	59
58.0	EARTH-MOVING EQUIPMENT	60
59.0	DRILLING EQUIPMENT	62
59.1	Core Drilling	63
60.0	MOVEMENT OF OVERSIZED LOADS	63
61.0	COMMERCIAL MOTOR VEHICLE OPERATIONS	64

OCCUPATIONAL HEALTH.....	64
62.0 HAZARD COMMUNICATION (HAZCOM) .....	64
63.0 OCCUPATIONAL NOISE EXPOSURE.....	65
64.0 BLOODBORNE PATHOGENS .....	66
65.0 LEAD .....	66
66.0 SILICA .....	66
67.0 ASBESTOS .....	66
68.0 ARSENIC.....	67
69.0 ABRASIVE BLASTING .....	67
70.0 RADIOLOGICAL NONDESTRUCTIVE TESTING .....	67
71.0 LEGIONELLA .....	68
ELECTRICAL SAFETY .....	68
72.0 TEMPORARY ELECTRICAL POWER.....	68
73.0 ELECTRICAL TESTING AND STARTUP .....	69
74.0 GROUND FAULT PROTECTION .....	70
75.0 ENERGIZING AND DEENERGIZING ELECTRICAL EQUIPMENT.....	70
75.1 Energizing Equipment or Feeders Over 600 V and 600-V Class Distribution Equipment.....	72
75.2 Energizing Utilization Equipment That Is 600 V or Less but Over 125 V-to-Ground .....	72
75.3 Installing Safety Grounds .....	72
76.0 WELDING AND PORTABLE GENERATORS .....	73
77.0 WORKING ON OR NEAR ELECTRICAL SERVICES AND/OR EQUIPMENT .....	74
78.0 HAZARDOUS ENERGY CONTROL (LOTO).....	74
ENVIRONMENTAL PROTECTION.....	75
79.0 SPILL PREVENTION, CONTROL, AND COUNTERMEASURES (SPCC).....	75
80.0 STORM-WATER MANAGEMENT .....	75
81.0 WASTE MANAGEMENT .....	75
81.1 Nonhazardous Solid Waste.....	76
81.2 Hazardous Waste.....	76
81.3 Used Oil and Petroleum Products .....	77
82.0 ENVIRONMENTAL ASSESSMENT AND REMEDIATION .....	77
83.0 AIR PROGRAMS MANAGEMENT .....	77
84.0 HERBICIDE AND PESTICIDE USAGE .....	78
85.0 ASH BASIN REMEDIATION.....	78
APPENDICES .....	79
86.0 TABLES .....	79
87.0 ACRONYMS .....	80
88.0 REFERENCES .....	81
89.0 ATTACHMENTS.....	82
90.0 SUMMARY OF CHANGES.....	84

## **1.0 ENVIRONMENTAL, HEALTH, AND SAFETY POLICY**

The safety and health of Southern Company's employees, contractors, customers, agents, and the public, as well as the protection of our natural environment, are core values of our company. Therefore, Southern Company's commitment is:

- To meet or surpass all environmental laws, regulations, and permit requirements, and to verify this commitment through environmental auditing.
- To provide a safe and healthy workplace for every employee based on employee involvement, ownership, teamwork, education, and leadership.
- To provide employees with a safe and healthy workplace that meets both regulatory requirements and company standards.
- To ensure all employees are provided the time, resources, and training necessary to perform their jobs safely and in compliance with environmental requirements.
- To value the safety and health of each other, customers, agents, and the public by conducting business in a manner designed to preserve their well-being.

Southern Company will not compromise its moral, ethical, and legal responsibilities to conduct its business in a manner that protects the environment and provides a safe and healthy workplace free from danger, injury, and illness.

## **ADMINISTRATIVE**

### **2.0 RESPONSIBILITY**

#### **NOTE**

Sections 1 through 17, Administrative, identify Southern Company-specific administrative policies, procedures, or practices that must be included in the Contractor's Southern Company-specific EH&S manual.

#### **NOTE**

Additional requirements may be identified in the Special Conditions section of the Contract.

### **2.1 Contractor Responsibilities**

Contractors shall perform work in a safe manner and comply at all times with all federal, state, county, and municipal laws and regulations that in any manner affect the contract and its performance.

Such laws and regulations include, but are not limited to, all laws and regulations with respect to inspection of the work, inspection of construction equipment, and licensing members of crews with respect to observance of all applicable occupational safety and health standards promulgated pursuant to the U.S. Occupational Safety and Health Act of 1970.

The Contractor shall have and exercise full legal responsibility for compliance with safety requirements and regulations by itself, its agents, its employees, and subcontractors with respect to the Contractor's portion of the work on the project.

The safety of all persons employed by the Contractor and its subcontractors on the Purchaser's premises, or any other person who enters upon the Purchaser's premises for reasons related to this contract, shall be the sole responsibility of the Contractor. The Contractor shall always take all reasonable measures and precautions to prevent injuries to or the death of any of its employees, its subcontractors, or any other person who enters upon the Purchaser's premises.

By making references to particular laws and regulations, the Purchaser does not intend to restrict or limit in any way the laws and regulations that apply to the Contractor's performance under the contract. The Contractor shall be solely responsible for providing for the safety and health of its agents, employees, and subcontractors.

If the requirements set forth in this document differ from the requirements listed in other applicable procedures, standards, rules, and regulations, the most stringent requirements shall apply.

It is understood that if the employees of the Purchaser shall perform any acts for the purpose of discharging the responsibility undertaken by the Contractor, whether requested to perform such acts by the Contractor or not, such employees of the Purchaser while performing such acts shall be considered the agents and servants of the Contractor subject to the exclusive control of the Contractor.

### 3.0 SAFETY PLANS

Contractors are required to submit a project-specific environmental, health, and safety (EH&S) plan through Avetta / BROWZ for review and approval prior to the bid process. This plan will meet all regulatory requirements and any Southern Company-specific requirements found in this document.

#### NOTE

Purchaser requirements are highlighted in red text.

Upon contract award, a site- or plant-specific addendum must be developed that includes at a minimum:

- A hazard communication (HAZCOM) plan.
- An emergency action plan that includes the following site- and project-specific information:
  - Escape routes.
  - Alarms.
  - Rally points.
  - Medical facility, location, and routing.
  - Emergency contact numbers.
  - Ammonia and chlorine awareness, as applicable.
- A list of key Contractor management contacts.
- Documentation showing clearly defined responsibilities of management and supervision.
- A personal protective equipment (PPE) assessment tool.
- A list of competent persons identifying competencies for individuals.
- A spill prevention control and countermeasure plan (SPCC), as required.
- A storm-water pollution prevention plan (SWPP), as required.
- Address-related requirements found in the special conditions section of the contract.

The site- and project-specific safety plan will be submitted to the contract administrator for review and approval prior to mobilization. The written plan will be submitted a minimum of 15 working days before mobilization. An alternate schedule is permitted with a prior agreement from Purchaser site management.

The Contractor's safety plan shall be developed and maintained at all times during the performance of the work. If the work scope for the Contractor is amended, the

Contractor's plan shall be reviewed and revised as necessary to ensure the additional scope is covered.

At the Purchaser's request, the Contractor may be asked to produce and/or comply with a specific plan to address emerging health and safety concerns including, but not limited to, contagion, epidemic, or pandemic.

The Contractor is responsible for ensuring subcontractors produce an EH&S plan that meets or exceeds all requirements referenced in this document.

#### **4.0 SUBCONTRACTOR AND VENDOR MANAGEMENT**

When working on a Southern Company project, Contractors and subcontractors shall strictly adhere to the responsibilities assigned to them.

Contractors are responsible for the safety and performance of their subcontractors. Contractors are responsible for ensuring subcontractors meet all requirements of this document.

Contractors are responsible for vendor activity related to their scope of work and shall ensure:

- Vendors adhere to all applicable safety requirements found in this document.
- Vendor activity is communicated to the management team prior to the vendor arriving on site.
- The Contractor maintains oversight of vendors while on site.

#### **5.0 NONCOMPLIANCE**

The Purchaser reserves the right, but not the duty, to point out items of noncompliance to the Contractor. A safety nonconformance report (SNCR) shall be issued for repeat nonconformance issues or first-time issues that are willful or represent a serious safety or health hazard.

SNCRs shall be issued through PIMS (form SNCR found in the PIMS document center) or, for projects that do not use PIMS, the [Safety Nonconformance Report \(SNCR\)](#) form will be completed and transmitted to the Contractor.

The Contractor shall review and provide a response that includes, if required, a mitigation plan to correct the nonconformance issue. The Purchaser's site manager or designee, with assistance from Safety and Health personnel, shall review the Contractor's response and either accept and close or reject and return to the Contractor for additional actions.

If the Contractor fails or refuses to take proper corrective action in a manner acceptable to the Purchaser, the Purchaser has the right to stop work until such time as the



Contractor is in compliance, or actions up to and including the termination of the contract may be taken as deemed by the Purchaser.

## **6.0 PLANNING AND HAZARD ANALYSIS**

### **6.1 Hazard Analysis**

Contractors are required to perform a documented project hazard analysis to address the hazards specific to the project. A thorough project hazard analysis will identify the following types of issues and the control methods that will be used to mitigate the hazard:

- Confined spaces.
- Radiological sources.
- Hazardous materials (such as asbestos or lead).
- Biological hazards (such as sewers, water treatment facilities, or Legionella).
- Potential explosive atmospheres.
- High-temperature surfaces.
- Electrical clearances (minimum approach distances), including electrical hazards associated with mobile equipment operations.
- Lifting and rigging.
- Process safety management-covered work.
- Pressurized hazardous fluids and gasses.
- Heavy equipment operations.

The Contractor's completed hazard analysis will be available to the Purchaser upon request.

### **6.2 Job Briefing (JSA, PJB, and So Forth)**

Southern Company requires workers to perform a job safety briefing (JSB), job safety analysis (JSA), or a prejob briefing (PJB) prior to beginning work. A common JSA form is used on Southern Company project sites. Contractors will use the provided Job Safety Analysis: Pre-Work and Pre-Task Planning Tool ([English](#) or [Spanish](#), as appropriate) for all work.

#### **NOTE**

Contractors may use their JSA form provided it is at least as detailed as the common JSA form, provided the Contractor has submitted their JSA form for review and approval by site management. Contractors may also use their own form in addition to the common JSA.

- Conduct a documented PJB prior to any activity involving hands-on work, material movement, field inspections, or work in a potentially hazardous environment.
- The purpose of a PJB is to validate workers understand the scope of the work, have discussed specific roles and responsibilities, have fully identified potential hazards

and risks, and are properly prepared to perform their assigned work tasks safely and incident-free.

- The employee in charge or a designated crew member shall conduct the job briefing with the workers involved before they start each job.
- The time and location selected for conducting a PJB should minimize distractions that could reduce the effectiveness of the briefing.
- Worker proficiency with equipment to be used or worked on should be discussed as well as each worker's defined roles.
- Each PJB will clearly define the job scope, including details of items that are not within the scope and any specific stopping points.
- Additional job safety briefings may be conducted at any time during the performance of a job and can be a valuable tool to refocus a team from one task to another.
- In case of an emergency where potential adverse impact to the safety of personnel or the public requires immediate response, jobsite hazards should be assessed and mitigated, to the greatest extent possible.
- If the work is stopped for an extended break, interruption, or delay, the work team shall review the job safety briefing prior to resuming work.

## **7.0 BEHAVIOR-BASED SAFETY (STEP)**

Safety Through Everyone's Participation (STEP) is Southern Company's behavior-based safety (BBS) observation program. The STEP program was developed and is owned by Southern Company. Contractors, unless contractually exempt, must use Southern Company's STEP program. Contractors with their own established BBS program must still participate in STEP, although they can concurrently use their own program. Contractor user licenses for the STEP database will be provided by Southern Company at no cost to the Contractor.

When required by contract, the Contractor shall use the Purchaser's STEP program when at least two of the following criteria are met:

- The contract duration is greater than 30 days.
- The Contractor expects to have 25 employees or more on the project site.
- The Contractor expects to expend 5,000 workhours or more during the course of the contract.

If the Contractor does not expect to meet these criteria at the time of award, but at any point during the contract duration becomes eligible by meeting two of the three above criteria, the Contractor shall be expected at that time to begin using the Purchaser's STEP program.

Information on the Purchaser's STEP program can be accessed from the document titled Southern Company's Behavioral Based Safety Observation Program – Safety Through Everyone's Participation.

For Contractors working fewer than 3,000 hours per month, a minimum of 2 onsite personnel, of which 1 may not be in the Contractor's safety organization, will be assigned to perform observations totaling 2 each per week (8 each per month).

For Contractors working more than 3,000 hours per month, personnel and observation goals shall be assigned to perform 5 observations per 1,000 work-hour rate. The makeup and goals of the observers shall be at the Contractor's discretion, except that no more than one-third of the total observers may be assigned to the Contractor's safety organization.

Contractors must include subcontractor hours in their total hours for the purposes of determining observation rates. Contractors may choose to include their subcontractors as active observers who participate in the STEP program as active observers. The Contractor's observers will perform STEP observations focused on the Contractor's or the subcontractor's work areas and employees. Each observer will be assigned a unique identifier to track observations. Observations shall be evenly spread throughout the month.

The Contractor will assign one employee from outside the safety organization to serve as the Contractor's STEP champion. The STEP champion will participate in the site's STEP sustainability process. The Contractor may elect to assign a site administrator to input observation data into the STEP database using the unique identifier for each observer.

The Purchaser will provide train-the-trainer STEP training. The Contractor is responsible for training and monitoring each observer's performance within the Contractor's organization. The Purchaser, at the Purchaser's sole discretion, can modify the required observation rate and will notify the Contractor of such modification.

Additional STEP resources:

- [STEP Overview](#)
- [STEP General Observer](#)
- [STEP Data Usage](#)
- [STEP Observer Refresher](#)
- [Process Map for STEP Implementation](#)

## **8.0 INCIDENT MANAGEMENT**

### **8.1 Notification and Investigation**

The Contractor will immediately report to the Purchaser all injuries, illnesses, and incidents resulting in property damage, fires, crane incidents, personnel falls, near hits, and environmental spills arising out of or in connection with the performance of the Contractor and the Contractor's subcontractor's work.

For all incidents, an initial report is required within 24 hours with initial information and determination of incident severity. For injury incidents, the initial report shall include a preliminary determination, that is, first aid, doctor visit, recordable, lost time, and other information of immediate importance. This report may be made via email or the [Contractor Incident Notification and Investigation Report](#).

The results of the Contractor's full investigation shall be documented in a final report and shared with the Purchaser within 7 calendar days of the event. The Contractor's report will include an adequate explanation of who, what, when, where, how, and why along with a final injury classification determination, and corrective actions to prevent similar events. All supporting documents, including, but not limited to, JSAs, photographs, witness statements (unless privacy is a concern), damage estimates, training documents, certifications, and so forth, are to be included with the final report. All employee personal identification information such as Social Security numbers and driver's license numbers should be redacted from the final report.

On or before the 5th of each month, the Contractor shall submit a report to the Purchaser documenting the safety statistics for the Contractor and the Contractor's subcontractors, including work hours, number of recordable injuries and illnesses, and the number of lost workday cases for the month, year-to-date, and project-to-date.

A copy of the OSHA 300 and 300A log(s) will be provided to the Purchaser upon request.

## **8.2 Root Cause Analysis / Event Learning**

In addition to the investigation report, a formal root cause analysis (RCA) performed by the Contractor may be required for, but not limited to:

- An incident resulting in injury(-ies) classified as OSHA Recordable.
- Lost workday case.
- Damage to plant equipment affecting reliability.
- A reportable environmental incident.
- On request by the Purchaser.

Exceptions to the above list may be granted by the Purchaser based on the circumstances of the case.

Root Cause Analysis reports shall be provided to the Purchaser within 14 days of the incident.

Event Learning exercises may be used for certain events. These events may include the above listed types as well as those incidents that have been classified as having a high potential for serious injury or fatality (PSIF). On the Purchaser's request, the Contractor will cooperate and make available all necessary personnel and resources to complete the exercise.

### **NOTE**

While employee discipline is solely the Contractor's responsibility, employers should consider delaying disciplinary actions until all investigation and event learning activities are complete.

### 8.3 Best Practices / Lessons Learned

Contractors are encouraged to develop, identify, and share Best Practices and Lessons Learned from previous incidents and past experience through the [Southern Safety Tri-Lateral, Industry Best Practices](#) page.

### 9.0 TRAINING

Contractors are responsible for meeting the requirements found in [29 CFR 1926.21, Safety Training and Education](#). In addition, Contractors will meet the following requirements:

- Participate in the completion of the Southern Company Safety and Health Orientation Checklist and site-specific training at the time of mobilization and comply with the requirements.
- Provide a site-specific safety and health orientation for the general craft, including a test to verify worker understanding.
- Provide a site-specific safety and health orientation refresher on an annual basis.
  - The Purchaser will provide a Contractor Designee(s) with the required [Lockout/Tagout Procedure Awareness Training](#) and access to the [Lockout/Tagout Training Video](#). The Contractor Designee(s) will be responsible for performing training for his or her employees using the materials provided. The Southern Company lockout/tagout procedure, [SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#), is in compliance with OSHA 1910.147, Lockout/Tagout, and OSHA 1910.269 (the OSHA standard governing electric utility work). These procedures provide a system of accountability for nonfacility personnel and maintain communications between working parties. Strict adherence to the lockout/tagout (LOTO) procedure is a condition of employment for everyone working on plant equipment at Southern Company facilities. Violation of the lockout/tagout procedure will lead to being barred from all Southern Company facilities. The applicable lockout/tagout procedure will be communicated to Contractors during the prebid and plant safety orientation. The Southern Company contract administrator will provide additional details.
- Provide hazard recognition training.
- If STEP participation is required by contract, provide STEP observer training as specified in section [7.0, Behavior-Based Safety \(STEP\)](#).
- If specified by contract, provide Southern Safety Tri-Lateral Front-Line Supervisor's Training to front-line supervisors (foreman and above) to include safety personnel:
  - The Contractor may arrange for the training through Beville State Community College or may elect to have one or more representatives attend the SST Train the Trainer course and provide the course curriculum themselves.
  - All testing shall be proctored by Beville State Community College.
  - Regardless of method selected, all training shall be provided prior to assignment of supervisory responsibilities. Exception based on emergency work and

unforeseen manpower needs, such as during a forced outage, may be granted by the Purchaser.

- Training term is valid for 36 months after which a refresher session is required.
- Additional information can be found at the Southern Safety Tri-Lateral's website.

[www.southernsafetytrilateral.com](http://www.southernsafetytrilateral.com)

- The Contractor shall maintain a training matrix that lists employees' names, training types, dates of training, instructors, and other pertinent information. The matrix shall be available for review by the Purchaser on request.

## 10.0 REGULATORY AGENCY INSPECTIONS / REGULATORY AGENCY COMPLAINTS

Southern Company's practice is to admit any lawfully designated government employee who, after presentation of proper credentials from a local, state, or federal regulatory agency, has the authority to conduct a site or facility inspection. Contractors will not admit regulatory agency inspectors to Southern Company property. Each site will have a site-specific protocol to follow in the event of a regulatory agency inspection.

Contractors will immediately notify the Purchaser's representative of **any** regulatory agency interaction stemming from their work or presence on a Southern Company site. The Purchaser will admit regulatory agency compliance officers after their credentials have been verified. They will then be escorted by a designated Purchaser's representative to an appropriate location to discuss:

- The nature of the inspection, whether it is random, scheduled, or due to a complaint. If the inspection is due to a complaint, request a copy of the complaint.
- Contractor (if applicable), activity, and personnel being inspected.
- Scope of the inspection: Complaint limited to a specific Contractor, activity, or area.
- The role of Southern Company or the operating company as the site owner will be clarified and each employer working on the site has responsibility for his or her own regulatory compliance.
- Southern Company or the operating company representative requests to be present during the opening conference, field inspection, and closing conference involving site Contractors.

Contractors will notify the Purchaser's site management if the Contractor receives an inquiry from OSHA regarding an employee complaint arising from activities related to their scope of work. The Contractor will investigate the complaint and share his or her response to OSHA with the Purchaser prior to its submittal.

## 11.0 NON-ENGLISH-SPEAKING WORKFORCE

The Contractor shall ensure an English-speaking representative of the Contractor is always provided for non-English-speaking contractor employees and its subcontractors ("contractor workers"). The representative must have the ability to communicate with and translate the foreign language of all non-English-speaking contractor workers to ensure the ability to communicate vital information is readily available. If the non-

English-speaking contractor workers are divided into work groups, the Contractor is responsible for providing an English-speaking representative for all work groups so vital information is readily communicated to all non-English-speaking contract workers.

The Contractor represents and warrants that they have communicated and translated to all non-English-speaking workforce, including all information and training required by applicable laws and regulations and all other safety and health requirements, in addition to all job-related duties of the contract. These requirements include, but are not limited to:

- OSHA regulations.
- The Contractor's safety program.
- Contractual safety requirements.
- Job safety briefing (JSB), prejob briefing (PJB), or similar prejob safety analysis.
- Work instructions.
- Procedures.
- Safety Data Sheets (SDS).
- The project-specific safety plan for the work to be performed for the Purchaser.
- Any relevant hazards and special site conditions the Purchaser has notified the Contractor may be encountered by the Contractor or the Contractor's workforce.

## **12.0 STOP WORK AUTHORITY**

Contractors shall adopt the Southern Safety Tri-Lateral Stop Work Authority program.

<http://www.southernsafetytrilateral.com/stop-work-authority.html>

## **13.0 EH&S ASSESSMENTS**

Each Contractor shall conduct a weekly field EH&S inspection of his or her work area(s) and those of his or her subcontractor(s). The Contractor shall document findings and the appropriate corrective actions. The documented findings shall be made available to the Purchaser on request.

The Contractor shall also inspect his or her work area(s) and those of his or her subcontractor(s) on a continuous basis and immediately correct all noncompliant conditions and actions.

The Contractor's home office shall have a corporate safety representative conduct quarterly safety audits of that Contractor's work activities at each project and include a written report of the findings with the corrective actions to be implemented, including the target dates and responsible parties. This report shall be submitted to the Purchaser's site manager or a designee. The Purchaser may request additional audits based on Contractor performance.

Each Contractor's safety assessment process shall include the Purchaser's Safety Through Everyone's Participation (STEP) behavior-based safety observation program

that involves observing, documenting, tracking, and trending the safe and at-risk behavior of field employees. The Contractor shall communicate the results of the observations biweekly to his or her workforce. The Contractor shall implement appropriate intervention actions to address deficiencies. Each Contractor shall submit a biweekly report (including documentation, tracking, trending, communications, and interventions) to the Purchaser's site manager or a designee. See section [7.0, Behavior-Based Safety \(STEP\)](#).

Contractors will provide one or more designees to participate in a weekly site EH&S assessment. The Purchaser and/or the controlling Contractor will lead the assessment. Action items assigned to Contractors will be completed as quickly as possible, and the disposition reported to site management.

#### **14.0 EH&S STAFFING**

The Contractor shall provide individual(s) who have the requisite knowledge, training, and experience to serve as the Contractor's EH&S resource/professional(s) for the project.

The Contractor shall submit the qualifications of the EH&S resource/professional to the Purchaser for approval prior to assigning the individual to the jobsite.

The Purchaser reserves the right to reject and/or request replacement of any EH&S resource/professional.

Additional site-specific criteria, including the minimum number of EH&S personnel, may apply and will be listed in the Special Conditions section of the Contract.

#### **15.0 FIRST AID PERSONNEL AND FACILITIES**

Contractors will provide adequate first aid supplies and/or facilities and staff based on table 1, First Aid Staffing:



**Table 1, First Aid Staffing**

Number of personnel during any shift	First Aid Staffing
< 50	1 person certified in each: <ul style="list-style-type: none"><li>• First aid.</li><li>• Cardiopulmonary resuscitation (CPR).</li><li>• Automated external defibrillators (AED).</li></ul>
50+	2 people certified in each: <ul style="list-style-type: none"><li>• First aid.</li><li>• CPR.</li><li>• AED.</li></ul> <p>-or- (with approval from the Purchaser), a Registered Nurse (RN), reporting to the Contractor safety professional</p>

In some cases, first-aid facilities and staffing may be provided by Southern Company. Contractors will check with the site to verify if first aid will be a provided resource. [A list of recommended first aid supplies is available.](#)

## 16.0 DEVIATION REQUESTS

Deviation from the Purchaser's specific requirements must be approved by the Purchaser. A deviation request must include all the following information:

- Justification for the request.
- Engineering or administrative controls to be implemented to ensure an acceptable level of risk for the operation.
- Whether the deviation is a one-time event or for the duration of the project.

Any deviation requires the following approvals from the Purchaser:

- Project manager.
- Site manager.
- Site safety and health manager (if applicable).
- Regional safety and health manager.

Contractors may use the provided [Contractor EH&S Specifications Deviation Request Form](#) or equivalent for submissions.

## 17.0 SAFETY AWARDS AND RECOGNITION

### 17.1 Safety Awards and Recognition

#### 17.1.1 Triangle Safety Award

Annually Southern Company should present a Triangle Safety Award plaque to each Contractor company whose safety performance while working during the calendar year meets the following criteria:

- STOP Work – The Contractor must have effectively promoted the SST STOP Work Program (evidenced through the use of STOP Work submissions).
- STEP – The Contractor must maintain the contractual minimum of 5.0 observations/1,000 workhours and achieve top-quartile status for STEP observation rate within the hours-based classification of the Contractor. (Source is SafetyNet/Predictive Solutions database.)
- Corrective Actions – The Contractor must achieve top-quartile status of the timeliness of corrective action completion. The Contractor must have no open safety-related corrective action items beyond specified required completion date. (Source is the LARA database, SafetyNet/Predictive Solutions database)
- Safety Nonconformance Reports (SNCRs) – The Contractor must have no open SNCRs beyond the specified required completion date. (Source is PIMS.)
- The Contractor shall not have caused an outage or damage to Southern Company property in excess of \$10,000.

All awarded Contractors will be invited to the Triangle Safety Award dinner and receive an award, scaled in size, based on volume of work within the system. (Source is the LARA database.)

- Small (>25K<50K hours).
- Medium (>50K<100K hours).
- Large (>100K hours).

Final review and approval of awardees:

- The criteria are minimum standards for consideration.
- The list of Triangle Award recipients will be reviewed by the Safety Leadership Team (SLT) and sent to TSS Leadership for approval.

#### 17.1.2 Lifesaver Award

The Lifesaver Award is intended to recognize project personnel, including Contractors and their subcontractors, who have participated in the active lifesaving of others (for example, performing CPR or saving a drowning individual) or otherwise intervened in an imminently dangerous life-threatening situation either on- or offsite.

Recognition includes a plaque and an article on Southern Today and may be accompanied by an award.

### **17.1.3 Safe Worker Award**

The Safe Worker Award is a program designed and administered by a project-based safety committee, such as the project STEP Sustainability Committee, and is intended to recognize project personnel, including Contractors and their subcontractors, who have demonstrated exceptional safe work practices and/or safety leadership and who have been nominated by their supervision.

Individuals in supervisory roles must have completed Southern Safety Tri-Lateral Supervisor Safety Training to be eligible. Individuals must have completed STEP observer training and demonstrate active involvement. If STEP has not been introduced in the worker's location or business line, consideration will be given for other safety role model behaviors such as:

- Actively pursuing a safety culture change in the respective location.
- Working with other safety organizations to facilitate safe work practices.
- Actively participating in safety meetings.
- Visibly leading safety initiatives with action-oriented behavior.
- Recognizing others for accomplishments and giving feedback.
- Taking the time to observe coworkers doing work safely and providing positive feedback.
- Demonstrating personal responsibility for the safety of others.

Award examples include gas cards, phone cards, gift certificates, hats, shirts, and preferred parking spots.

### **17.2 Contractors' Safety Awards Programs**

To encourage and recognize superior safety and health performance by their employees, Contractors are encouraged to develop and implement safety and health awards and recognition programs of their own.

## **GENERAL SAFETY REQUIREMENTS**

### **NOTE**

Hyperlinks to regulatory standards are provided as a convenience to the Contractor. No representation is made by the Purchaser that the referenced standards are all inclusive. It is the Contractor's responsibility to ensure he or she meets or exceeds all federal, state, or local regulatory requirements.

## NOTE

Purchaser-specific requirements applicable to sections 18 through 85 that exceed regulatory requirements are presented in **red text** and must also be addressed in the Contractor's safety plan.

### 18.0 HOUSEKEEPING

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.25, Housekeeping](#)  
[29 CFR 1910.22, General requirements](#)

In addition, the following Purchaser-specific requirements apply:

- The use of glass bottles is allowed only in designated lunch and break areas.
- Extension cords, wires, and electrical cables shall be kept in an elevated position (7 ft above the walking-working surface) or routed outside of aiseways and walkways where they pose no potential danger to personnel and are not likely to be damaged by activities or equipment.

### 19.0 SANITATION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.51, Sanitation](#)  
[29 CFR 1910.141, Sanitation](#)

In addition, the following Purchaser-specific requirements apply:

- Contractors shall provide, with Purchaser approval, designated areas for consumption of food and drink.
- The Contractor shall be prepared to provide potable water to their workforce through use of bottled water, filtration of existing water supplies, or other acceptable means.

### 20.0 ILLUMINATION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.56, Illumination](#)

In addition, the following Purchaser-specific requirements apply:

Contractors shall consider areas that employees travel through while traversing to work locations as general construction areas and provide lighting per 29 CFR 1926.56, Lighting, table D3.

## 21.0 MATERIAL STORAGE AND HANDLING

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.250, General requirements for storage](#)  
[29 CFR 1926.251, Rigging equipment for material handling](#)  
[29 CFR 1910.176, Handling materials – General](#)

In addition, the following Purchaser-specific requirements apply:

- Where a difference in road or working levels exists, a means such as ramps, blocking, or grading shall be used to ensure the safe movement of vehicles between the two levels.
- One person shall not be allowed to manually lift more than 50 lb of material at one time.
- If a load exceeds 50 lb, or the size and shape prevent safe handling or traveling, mechanical help or help from other employees is required.

## 22.0 ACCIDENT PREVENTION SIGNS AND TAGS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.200, Accident prevention signs and tags](#)  
[29 CFR 1910.144, Safety color code for marking physical hazards](#)  
[29 CFR 1910.145, Specifications for accident prevention signs and tags](#)  
ANSI D6.1-20xx, Manual Uniform Traffic Control Devices

## 23.0 BARRICADES

Contractors shall follow the requirements set forth in:

[SCO-SH-0900, Barricades](#)

## 24.0 LADDERS AND STAIRWAYS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.1052, Stairways](#)  
[29 CFR 1926.1053, Ladders](#)  
[29 CFR 1910.25, Stairways](#)  
[29 CFR 1910.23, Ladders](#)

In addition, the following Purchaser-specific requirements apply:

- Portable metal ladders shall not be used.
- All manufactured ladders shall be extra-heavy-duty type 1A.

- A quarterly, documented inspection by a competent person is required for all portable ladders. Documentation must be available for review by the Purchaser, upon request. [A sample ladder inspection form is available.](#)
- When the ladder user is 4 ft or more above the walking-working surface, the stepladders shall be secured, or a second worker shall hold the ladder. In addition, when the worker is more than 4 ft above the walking-working surface, the worker on the ladder must use a personal fall arrest system (PFAS).
- Only light, temporary work should be performed from ladders.
- A worker on a ladder must maintain three points of contact with the ladder (one hand and two feet or two hands and one foot), and his or her body must be centered within the vertical rails of the ladder.

## 25.0 SCAFFOLD SAFETY

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.27, Scaffolds and rope descent systems](#)  
[29 CFR 1926 Subpart L, Scaffolds](#)  
SCO-SH-0700, Scaffold Safety (forthcoming)

In addition, the following Purchaser-specific requirements apply:

- When a scaffold must be built inside operating facility equipment where load rating is not readily available and wear can be expected, special precautions are required. The scaffold competent person may use accepted practices to support the scaffold and redistribute the load. Acceptable methods include, but are not limited to, ensuring load-bearing legs are supported by structural steel, using boards, plate, or beams extending from supporting structural steel to supporting structural steel to support the scaffold. Structural steel bracing in ductwork may also be used to support the scaffold. When in doubt as to the structure's ability to support the load using these methods, calculations performed by a qualified person are required before the build. These builds will require verification of structural material and welds supporting scaffolds. See the [Verification of Load-Bearing Capability of Base Support for Supported Scaffold](#) form for instructions.
- Any required planning, inspection, and engineering for P.E.-designed boiler scaffolds is covered in section [25.1, Engineered Scaffold Requirements](#).
- Personal fall arrest will be used on scaffold where an unguarded fall hazard of 4 ft or greater exists. Any scaffold ladder of 15 ft or greater shall be equipped with a self-retracting lifeline or other fall protection system.
- Welding leads, extension cords, hoses, and so forth shall not be suspended from scaffold components using conductive material. Any conductor energized at 480 V and above attached to scaffold shall use interlocked armor cable or equivalent.
- Where possible, gates shall be installed on scaffolds for safe access and egress.
- When scaffolds obstruct project and plant personnel access or egress to critical equipment, emergency equipment, walkways, ladders, or stairs, the scaffold requestor shall take appropriate measures to mitigate the hazards of the obstruction or provide alternate access. The obstructions shall be identified by signage at the

- access point(s), as well as appropriate safeguards, such as flagging, barricading, and/or padding, put in place to prevent injury to personnel.
- Scaffold material shall be stored in locations that minimize damage from corrosion, heat, or physical damage and does not create additional hazards for personnel.

## 25.1 Engineered Scaffold Requirements

- Engineered scaffold must be erected by a Contractor approved by the Southern Company Scaffold Committee.
- For boiler scaffold built on a sloped founding system (base) installed to the vertical wall of a boiler, the following process shall be followed:
  - Prior to the prebid or prework meeting, the responsible person shall complete the [Scaffold Integrity Checklist](#) as part of the planning process. The responsible person shall review in detail the scaffold work scope and the boiler work scope, including any work that may impact the structural integrity of the scaffold support structure. The completed Scaffold Integrity Checklist shall be shared with the Contractor, competent person, qualified person, and the P.E.
  - Contractors shall provide design drawings for engineered scaffold systems to the Southern Company responsible person in advance for review to confirm the design meets the requirements of the planned work.
  - The Contractor shall provide qualifications of scaffold qualified and scaffold competent persons to the Purchaser.
  - Intermingling of scaffold components from different manufacturers is discouraged but, if necessary, shall be approved by the engineer of record.
- If adjustable founding beams are used on the installation, a record of the torque value of each fastener on the founding beam shall be made and provided to the Southern Company responsible person at the phase-1 scaffold evaluation.
  - The Contractor and the P.E. of record shall inspect and attest that the installation of the scaffold meets the requirements of the engineering drawing by signing and dating the [Engineered Scaffold Inspection Form](#).
  - Each phase of the scaffold construction shall be inspected by the P.E. of record, or his or her designee, for scaffold design, as outlined below. The inspection of each phase shall include a complete inspection of the scaffold from the highest point of the build to the founding system. The inspector shall not be involved with or responsible for the erection of the scaffold.
- Inspections of engineered scaffold shall be performed:
  - Phase I shall be at completion of the foundation level of the scaffold.
  - Phase II shall be at a midlevel point of the installation, as agreed between the Purchaser and the Contractor.
  - Phase III shall be at the completion of the installation.
  - Before any use of the scaffold, the Contractor representative shall have the P.E. of record sign the [Engineered Scaffold Inspection Form](#) for the completed phases and present it to the Southern Company-designated representative.

- After each phase has been erected and the Southern Company representative has received the signed inspection documents from the Contractor, the scaffold shall be evaluated by the Southern Company representative and the company contracted to erect the scaffold. Any deficiencies shall be identified and corrected by the Contractor who shall then sign, date, and place the appropriate scaffold inspection tag at all points of scaffold access before anyone uses the scaffold.

## 25.2 Scaffold Erection and Dismantling

Workers shall hoist or lower scaffold components with a handline or pass from hand to hand. Throwing or dropping items to coworkers is not permitted.

## 25.3 Pre-Use Inspection and Tagging

Tags on scaffolds shall be applied appropriately and be easily identifiable (for an example, see [Scaffold Tags Examples](#)). The scaffold competent person shall tag each scaffold with one of following three colors:

TAG COLOR	INDICATES...
Green	The scaffold is complete, as defined by the manufacturer and/or 29 CFR 1926, subpart L, and is safe to use. A green tagged scaffold has a complete deck, proper access, and handrails installed. <b>All scaffolds deemed complete must be green tagged.</b>
Yellow	The scaffold can be used with caution, but a hazard exists; for example, the assembly of the scaffold could not be completed because of the physical restraints or the scope of work to be performed. This designation usually indicates an incomplete deck, handrail, ladder, or another hazard. If indicated on the scaffold inspection tag, fall protection or fall prevention measures shall be required.
Red (or missing)	The scaffold is unsafe for use because it is in the process of being erected, changed, or dismantled, or has been damaged. A red tag shall remain on the scaffold until deficiencies are corrected, the scaffold is inspected by the scaffold competent person, and the scaffold has been retagged.

## 25.4 Applying and Removing Scaffold Tags

Only a scaffold competent person may inspect and determine appropriate tagging. The scaffold competent person shall be responsible for completing all required information on the tag and affixing it to the scaffold at all access points.

The scaffold tag shall be affixed to each scaffold access point, where it is readily visible but will not interfere with normal access.

The scaffold tag shall indicate the safe working load of the scaffold. Safe working loads are categorized as light duty (25 psf), medium duty (50 psf), or heavy duty (75 psf).



Any scaffold user may remove a green or yellow scaffold tag if the scaffold does not meet the safety requirements (for example, if the scaffold has been damaged, was improperly modified, is missing components, or is deficient in any safety aspect). A scaffold competent person shall place a red tag on the scaffold until the deficiencies are corrected.

After the scaffold crew repairs a damaged scaffold, a scaffold competent person shall inspect it and retag it accordingly.

At the beginning of each shift, a scaffold competent person shall inspect all scaffolds to be used and sign and date the scaffold tags.

### **25.5 Suspended Scaffolds (Suspension Scaffolds)**

All suspended scaffolds shall be inspected before use and per shift by a competent person trained in suspended scaffold erection. These inspections shall be recorded on a form attached to the scaffold. Contractors may use the [Suspended Scaffold Inspection Checklist](#) or a Contractor-provided document that is equal to the above referenced form and approved by the Purchaser.

The use of multilevel suspended scaffolds is prohibited on Southern Company facilities.

### **25.6 Suspended Scaffold Equipment Inspections**

Engineering calculations shall be provided for installed anchor points on existing equipment for suspended scaffold support and fall protection.

Prior to use, welded anchor points shall be installed and verified by a certified welder inspector/nondestructive examination (NDE). Welded anchors shall be labeled for capacity and use.

The Contractor will provide to the Purchaser the hoist rated load and stall capacity for suspended scaffold motors. All attachment points will be capable of supporting four times the hoist rated load or 1-1/2 times the hoist stall capacity.

### **25.7 Preventive Maintenance**

Documentation from annual equipment inspection shall be provided to the Purchaser on request. This documentation includes plant-owned equipment and Contractor-supplied equipment.

### **25.8 Rescue Provisions**

A means of communication shall be required for at least one person while on a suspended scaffold.

### **25.9 Custom Designed and Fabricated Scaffold (Contractor Owned)**

- The Contractor shall be responsible for the design and construction of the scaffold.

- The Contractor shall be responsible for the training of competent person for the erection and inspection of the scaffold.
- The Contractor shall be responsible for determining the appropriate load rating for the scaffold.

Contractors shall follow the requirements set forth in:

[SCG-SH-0700, Scaffold Safety Procedure.](#)

#### NOTE

When approved, SCO-SH-0700, Scaffold Safety Procedure, will replace SCG-SH-0700. Contractors will be notified of the change.

## 26.0 FALL PROTECTION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926 Subpart M](#)  
[29 CFR 1910.28, Duty to have fall protection and falling object protection](#)  
[29 CFR 1910.29, Fall protection systems and falling object protection criteria and practices](#)  
[Sample Fall Protection Plan](#)  
[SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal](#)

In addition, the following Purchaser-specific requirements apply:

- 100-Percent Fall Protection is required for all elevated work 4 ft or more above a lower level, including when there is a potential for a fall into hazardous machinery or equipment. Specific operations excepted from this requirement include:
  - Regular service, inspection, maintenance of mobile construction equipment where the manufacturer designates personnel access and provides steps, handholds, ladders, and guardrails/railings/grabrails meeting the criteria of ISO 11660:2008(E), ISO 2867:2011(E), or SAE J185, and walking-working surfaces with slip-resistant properties; or, on cranes, where the employee is at or near the draw-works when the equipment is running, in the cab, or on the deck.
  - Loading/offloading of flatbed trailers while standing directly on the trailer bed surface.
- Before starting any work at an elevated position, the Contractor shall submit a written fall protection and fall prevention plan to the Purchaser's site manager. Elevated work includes, but is not limited to, scaffold erection, steel erection, work in pipe bridges, roof work, Q-decking, grating installation and removal, formwork and reinforcing steel, and any other potential for a fall of 4 ft or greater, except work performed from a ladder. The program must include all requirements identified in 29 CFR 1926.502(k) and identify all rescue equipment and methods.
- The use of personnel-owned fall arrest equipment is strictly prohibited.

- Alternative methods of fall protection systems such as safety nets and positioning devices shall not be used as primary means of protection.
- Snap hooks and/or carabineers shall be of the double-action, self-locking-type with a minimum gate strength of 3,600 lb.
- Controlled access zones for fall protection are prohibited.
- The warning line system and safety monitoring system are prohibited as the sole means of fall protection.
- At a minimum, the fall protection competent person shall inspect fall protection systems on a monthly basis. The monthly inspection shall be documented and made available for review upon request by the Purchaser.
- Toeboards are required on platforms with guardrails and on scaffolds that are above the ground or floor as falling object protection and fall protection.

## 26.1 Floor Opening, Wall Opening, and Guardrail Removal

Floor opening, wall opening, and guardrail removal will follow the requirements of:

[SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal](#)

Hole covers shall be made of ¾-in. plywood or equivalent if one dimension of the opening is 18 in. or less, otherwise 2 in. lumber or doubled ¾-in. plywood or equivalent is required.

## 27.0 STEEL ERECTION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926 Subpart R, Steel erection](#)  
[29 CFR 1926 Subpart CC, Cranes and derricks in construction](#)  
Section [26.0, Fall Protection](#)  
Section [28.0, Rigging and Lift Plans](#)  
Section [30.0, Chains, Slings, and Miscellaneous Rigging Accessories](#)  
[OSHA Steel Erection eTool](#)

In addition, the following Purchaser-specific requirements apply:

- The Contractor must submit steel erection plans for review by the Purchaser prior to the commencement of any steel erection activity.
  - Plan must be submitted a minimum of 2 weeks prior to the commencement of activity unless otherwise agreed upon between the Purchaser and the Contractor.
- In addition to the requirements found in Subpart R for steel erection activities, the following items must also be addressed in the Contractor's steel erection plan:
  - Falling object protection or prevention.

- Personnel shall always maintain 100-percent fall protection when exposed to falls of 4 ft or greater.
  - Personnel shall straddle (“coon”) the beams when moving. If the beam is too large to straddle, the employee may walk the flange while using 100-percent fall protection as part of the fall protection plan.
  - Climbing and sliding on structural steel columns is not allowed on Southern Company sites.
  - Protection of roof and floor holes shall follow the requirements of [SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal](#), as they are created.
  - The steel erection Contractor shall submit a written installation plan for floor grating and Q-decking for approval. The plan shall include details such as, but not limited to, sequencing and fall protection practices.
  - To minimize risk, the use of modularization and opportunities where components can be joined at ground level is encouraged.
- A steel erection plan must be submitted a minimum of 2 weeks prior to the commencement of activity, unless otherwise agreed on between the Purchaser and the Contractor.

## 28.0 RIGGING AND LIFTING PLANS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.251, Rigging equipment for material handling](#)  
[29 CFR 1926.554 \(a\)\(2\), Overhead hoists; General requirements](#)  
[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)  
[29 CFR 1926, Subpart R, Steel erection](#)  
[29 CFR 1926.1432, Multiple-crane/derrick lifts – Supplemental requirements](#)  
[SCO-SH-0812, Rigging and Lifting](#)

In addition, the following Purchaser-specific requirements apply:

### 28.1 Critical Lifts

- The Contractor shall develop an engineered rigging and lift plan for all critical lifts. The following criteria shall be used to determine if a lift is deemed critical:
  - Any lift involving more than one piece of equipment attached by hoist or crane, or any combination thereof. All multiple crane lifts shall meet the requirements of 29 CFR 1926.1432, Multiple-Crane Derrick Lifts – Supplemental Requirements.
  - Any lift that is equal to or greater than 75 percent of the manufacturer’s written chart for the specific crane in its present configuration.
  - Site-specific requirements may also apply, for example:
    - Specialty equipment with high value.
    - Nonroutine complex lifts.
    - At the Purchaser’s request.

- The Contractor's critical lift plan shall be stamped by a professional engineer (P.E.). For an example, see [Critical Lift – Rigging and Lifting Plan](#). The contractor's site manager shall approve the written critical lift plan and submit the plan for review by the Purchaser 15 calendar days, or as otherwise approved by the Purchaser, prior to the lift. This review should include the Purchaser's rigging SME, as appropriate. The Purchaser or its agent reserves the right to review all rigging and lifting plans and may reject for cause.

## 28.2 Intermediate Lifts

The Contractor shall complete the [Intermediate Lift – Prelift Worksheet](#) form, for all noncritical lifts greater than 2,000 lb when using any crane, drum hoist, chain hoist, lever hoist, or grip hoist, unless the lift involves the use of a beam clamp or plate clamp (plate dog) regardless of the weight involved.

## 28.3 Lifts Less Than 2,000 lb

For lifts less than 2,000 lb, the Contractor shall document prelift planning on the pretask planning document (JSA, JSB, PJB, or similar). See section [6.2, Job Briefing \(JSA, PJB, and So Forth\)](#).

## 29.0 CRANE-SUSPENDED PERSONNEL PLATFORMS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.500, Subpart M, Fall protection](#)  
[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)  
ANSI A10.4, Current Safety Requirements for Workman's Hoist  
ASME B30.23 Personnel Lifting Systems

In addition, the following Purchaser-specific requirements apply:

- The Contractor shall document the evaluation of alternate methods of reaching the work location and provide the documentation to the Purchaser for review. [A sample form for evaluating alternate lifting methods is available.](#)
- The Contractor's site manager shall provide documentation authorizing the use of a suspended personnel platform on a per-use basis to the Purchaser for review. [A sample authorization form is available.](#)
- The Contractor shall have a method of documenting pre-use inspection of suspended personnel platforms by the designated competent person and provide documentation to the Purchaser for review. [A sample preuse inspection form is available.](#)
- While welding from a crane-suspended personnel platform, only nonconductive polyester round slings or insulating links shall be used to make the final attachment from the platform rigging to the hoisting block. The same requirement shall be met for the secondary safety line from the basket to its final attachment point.

- A separate grounding conductor that is at least the size of the welding lead shall always be connected from the crane-suspended platform to the structure while the welding machine is operating.
- The platform-to-structure grounding is in addition to the grounding conductor required by the welding process. The ground attachment shall be a spring-loaded clamp or magnetic ground.

### 30.0 CHAINS, SLINGS, AND MISCELLANEOUS RIGGING ACCESSORIES

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.176, Handling materials – General](#)  
[29 CFR 1910.184, Slings](#)  
[29 CFR 1926.251, Rigging equipment for material handling](#)  
[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)  
ANSI/ASME B30.9 – Slings  
ANSI/ASME B30.10 – Hooks  
ASME B30.20 Below-the-Hook Lifting Devices (current revision)

In addition, the following Purchaser-specific requirements apply:

- The Contractor shall develop and provide details of their process for rigging inspection verification (such as monthly/quarterly color codes and I.D. tags). [A sample chain and come-a-long inspection form is available.](#)
- The following requirements for beam clamps, plate clamps, and eyebolts shall be strictly adhered to:
  - Workers shall be trained to the manufacturer’s make/model-specific use instructions and specifications.
  - The Contractor shall maintain a roster of qualified personnel and provide it to the Purchaser on request.
  - The Contractor shall have a documented method for inventory control and restricted storage to ensure only properly trained and authorized personnel may use with logging process.
  - On Purchaser’s projects, the Contractor is prohibited from using beam clamps in a below-the-hook configuration. Deviation may be approved by the Purchaser provided the clamps are designed for a below-the-hook application and the Contractor provides a detailed plan on how they will ensure proper use.
  - The Contractor shall use only positively self-clamping and locking-type plate grips.
  - The Contractor shall use tag lines to control all loads.

### 31.0 CHAIN HOISTS, LEVER HOISTS, AND JACKS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.241\(d\), Jacks](#)  
[29 CFR 1910.244, Other portable tools and equipment](#)  
[29 CFR 1926.305, Jacks - Lever and ratchet, screw and hydraulic](#)

In addition, the following Purchaser-specific requirements apply:

Documented inspections shall be made available to the Purchaser for review on request.

### 32.0 TOOLS, POWER AND HAND

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.243, Guarding of portable powered tools](#)  
[29 CFR 1910.213, Woodworking machinery requirement](#)  
[29 CFR 1910.215, Abrasive wheel machinery](#)  
[29 CFR 1926.300, Tools – hand and power, General requirements](#)  
[29 CFR 1926.302, Power-operated handtools](#)  
[29 CFR 1926.303, Abrasive wheels and tools](#)  
[29 CFR 1926.304, Woodworking tools](#)

In addition, the following Purchaser-specific requirements apply:

- Power tools shall be unplugged or the battery removed when left unattended, or no longer in use for extended periods or while changing tool heads, blades, guards, and so forth.
  - Mag-Drills installed in vertical position are exempted.
- GFCI protection is required for all power tools.
  - GFCI protection is required at the outlet or source.
  - Mag-Drills are exempted.
- Contractor must have a documented tool inspection program that includes:
  - Inspection by a competent person to be made available to the Purchaser for review, on request.
  - Visual indicators the tool has been inspected by a competent person. These indicators could include colored tape, colored zip ties, and similar markers. The details of this process shall be shared with the Purchaser for the purposes of contract compliance.
- Angle grinders must incorporate an integrated brake, slip clutch, and be equipped with a nonlocking dead-man-type switch. Assist handles and guards supplied by manufacturer must be installed, adjusted properly, and used at all times.
- Contractors shall establish rules restricting the use of grinders if a bandsaw or other cutting tool would be the safest option.

- When working with a grinder, the operator and helper(s) shall wear faceshields and appropriate safety glasses or goggles.
- Workers shall not alter tools without the manufacturer's approval.
- Job-fabricated specialty jigs, fixtures, and tools must be specifically engineered and fabricated by a qualified person.
- The use of a pocketknife in performance of a work-related task is prohibited.

### 33.0 EXCAVATION AND TRENCHING

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926 Subpart P, Excavations](#)  
[29 CFR 1926.651, Specific excavation requirements](#)  
[29 CFR 1926.652, Requirements for protective systems](#)  
49 CFR Parts 192, 195, and 199, Transportation of hazardous liquids by pipeline

In addition, the following Purchaser-specific requirements apply:

- Each Contractor shall designate an excavation competent person who will remain onsite at all times while excavation activities are conducted. The Contractor shall provide the name of the excavation competent person to the Purchaser's site manager.
- An excavation permit system shall be implemented by any Contractor performing excavation work. See [Trenching and Excavation Permit](#) for an example. The excavation permit is intended to ensure interferences that might be encountered during underground digging are identified and located, if possible, before work begins. The excavation permit shall be completed by the Contractor with input from the authorized person for underground testing (utility identification) and the Contractor's excavation competent person. A properly executed excavation permit is critical when digging in and around operating facilities. Excavation permits are required for the following:
  - If the depth is greater than 12 in. for manual excavations or manual post driving.
  - At any depth when using mechanical excavation equipment.
- Blanket excavation permits can be used on nonindustrial, clearly delineated areas if utility locating services have confirmed no presence of utilities. Such permits can remain in effect until permanent underground systems are energized or pressurized. This work includes the installation of (driving) support poles into the ground.
- Excavation in areas containing temporary construction services and utilities shall be managed by specific excavation permits.
- The Contractor shall be responsible for locating any underground utilities prior to performing any trenching or excavation activity. The estimated location of underground utility installations such as sewers, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered shall be determined and marked prior to beginning any excavation or trenching operation. The appropriate state utilities protection center (811 call



- center), proper utility company, or owner shall be notified 72 hours prior to excavating.
- Underground utilities shall be protected from damage during trenching and excavation activities.
  - Soil classification shall be made by the Contractor's competent person or a registered professional engineer (P.E.) trained in soil classification. Unclassified soil shall be assumed to be type C. The Contractor shall keep written documentation on the methodology used to determine soil classification, and on request, make the record available to the Purchaser for review.
  - Fall prevention and/or fall protection systems shall be in place to protect workers in excavations that are not sloped or have vertical walls if a fall potential of greater than 4 ft exists.
  - The Contractor shall have a process that includes documented inspections by a competent person. The competent person's documented inspection shall occur daily before any personnel enter the excavation. Contractors may use the [Trenching/Excavation Daily Inspection Form](#) or the equivalent.
  - The Purchaser will not provide a rescue team. The Contractor must plan for and provide for rescue services and equipment. Rescue team(s) shall be established to fulfill the needs and requirements of the site/facility and regulatory requirements.
  - During construction, the location of buried utilities that are part of the new construction shall be identified above ground to prevent damage during later construction processes. For example, direct buried electrical cable on a solar project shall be marked at the surface to avoid damage when support posts are driven.

#### NOTE

While working at hydro facilities, the Contractor will notify the Purchaser a minimum of 7 working days prior to performing any trenching, excavation, or boring. Purchaser approval is required before performing this work at hydro facilities.

### 33.1 Hydro Excavation Operations

General requirements:

- Permit requirements including pre-excavation identification of buried underground utilities shall be performed.

#### NOTE

Even if the operation is for discovery, all steps to identify buried underground utilities are necessary.

- Equipment near jetting operations should be shielded or protected from debris and the ingress of water from operating the jetting equipment.
- Any essential electrical installation shall meet the required protection levels against the ingress of water vapor or overspray.
- Jetting operations shall not exceed 3,500 psi. Deviations shall follow the procedure deviation approval process; see section [16.0, Deviation Requests](#).

- The jetting wand shall remain in motion at all times during excavation and shall not be motionless. Aiming the jetting wand directly at the underground facilities shall be avoided.
- A distance of 8 in. shall be maintained between the end of the pressure wand nozzle and the underground facility and/or subsoil. The nozzle shall never be inserted into the subsoil while excavating near suspected underground utilities.
- People other than the operating team shall be kept out of barricaded work area.
- The work area shall be at least 20x20 ft if feasible.
- Work activities shall be planned to provide safe access to the equipment and area.
- Operators using manually operated jetting systems shall be in a safe and well-balanced position before starting jetting operations.
- Contractors shall perform a PPE assessment for the task to identify all appropriate PPE. Workers shall follow the manufacturer's recommendation for PPE while operating equipment.
- Jetting operations shall stop when:
  - Conditions change or new hazards are introduced.
  - Unauthorized people enter the barricaded area.
  - Recommended safe work practices are not being followed.
  - An equipment malfunction occurs.
- Jetting systems shall be depressurized and secured when:
  - Not in use and left unattended.
  - Components are being replaced, or repairs are being made to the system.
- High-pressure jetting guns or lances shall be fitted with at least one fast-acting hold-to-activate device that, when deactivated, will stop the flow of high-pressure water. This device shall be under the direct control of the jetting operator or accessible to others to activate in the case of an emergency.

### 33.2 Pump Unit

The pump unit shall be maintained in accordance with the manufacturer's instructions. Maintenance includes daily preoperational checks on the following items as applicable:

- Engine and drive unit: Lubricating oil, water, hydraulic fluid, and fuel levels.
- Pump unit: Lubricating oil, water filters, drive belts, gauges, and gearbox oil levels.
- Hydraulic hose reel: Lubricating oil and fluid levels.
- Condition of guards, shields, and safety interlocks.

### 33.3 Hose Assemblies

- Hose, couplings, connectors, and hose end fittings shall be suitable for use with the maximum working pressure of the high-pressure water-jetting unit to be used.
- Before each use, hose assemblies shall be inspected by the trained operator to ensure:

- The correct pressure rating and size is selected.
- The tools used (jetting wand/vacuum tube) have been specifically designed for excavating around buried facilities (for example, rubberized coating on jetting wand and rubberized sleeve attached to the end of the vacuum tube).
- There is no apparent structural damage such as corroded or broken wires, bulging, kinking, or cuts.
- End fittings are in good condition and of the correct pressure rating for the unit operating pressure.
- Hose connections to equipment or other hoses are restrained with braided stockings or are restricted in such a way as to stop their movement if the hose end fails.

### **33.4 Air Excavation (Air Knife)**

- The Contractor shall perform a PPE assessment specific to air knifing operations. PPE considerations include but are not limited to:
  - Eye protection (spoggles, goggles).
  - Face protection (faceshields).
  - Hearing protection (type and distance).
  - Fall protection (size and depth of excavation).
  - Respiratory protection (if required due to dust/excavated material).
- The maximum air pressure applied shall not exceed the manufacturer's specification.
- The air excavation unit shall be fitted with at least one fast-acting hold-to-activate device that, when deactivated, will stop the flow of high-pressure air. This device shall be under the direct control of the operator or accessible to others to activate in the case of an emergency.
- Unless otherwise addressed by the manufacturer's design, the wand shall be equipped with a protection shield at the nozzle to prevent blowback.

### **33.5 Encountering Unknown or Abandoned Underground Utilities**

- If unknown or abandoned underground utilities are encountered during trenching and excavation, all work shall immediately stop and permits rescinded until the unknown encumbrance is identified, unless hydro/vacuum excavation activities are being performed.
- If the unknown encumbrance must be removed or relocated, see section [78.0, Hazardous Energy Control \(LOTO\)](#), for specific requirements.

### **33.6 Working Near Natural Gas or Underground Pipelines Including D.O.T. Regulated**

- If excavation work is to be performed within 100 ft of any pipeline (for example, natural gas, fuel) for the purpose of moving or removing earth, rock, or other material by mechanized equipment, and such work includes, but is not limited to, auguring, backfilling, boring, digging, ditching, drilling, grading, pile-driving, ripping, scrapping, subsoiling, or trenching, the Purchaser's representative shall, as early in the planning

- process as possible, inform the responsible engineer in Technical Shared Services (TSS) (the pipeline system operator) and request guidance.
- If a load exceeding 20,000 lb per axle will cross any pipeline, the Purchaser's construction representative shall, as early in the planning process as possible, contact TSS (the pipeline system operator) and request guidance.

### 34.0 TUNNELS, CAISSONS, AND COFFERDAMS

Contractors shall, at a minimum, meet the requirements set forth in:

29 CFR 1926:

[Subpart E, section 103, Respiratory protection](#)

[Subpart J, section 352, Fire prevention](#)

[Subpart D, section 55, Gases, vapors, fumes, dust, and mists](#)

[Subpart C, section 20, General safety and health provisions](#)

[Subpart K, Electrical](#)

[29 CFR 1926.552, Material hoists, personnel hoists, and elevators](#)

[Subpart S, Underground construction, caissons, cofferdams, and compressed air](#)

[1926.800, Underground construction](#)

[1926.801, Caissons](#)

[1926.802, Cofferdams](#)

[1926.803, Compressed air](#)

[Subpart U, Blasting and the use of explosives](#)

[U.S. Mine Safety and Health Administration \(MSHA\)](#)

[U.S. Bureau of Reclamation, Coast Safety Standards](#)

[U.S. Army Corp of Engineers, EM 385-1-1, Section 18](#)

Specific state plans as applicable

In addition, the following Purchaser-specific requirements apply:

- No personnel, other than equipment operators operating their equipment, shall be allowed in tunnels during mucking operations.
- Rescue team(s) shall be established to fulfill the needs and requirements of the site/facility and regulatory requirements.

### 35.0 BLASTING

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.900, Subpart U, Blasting and the use of explosives](#)

ANSI A10.7, Current

27 CFR 555, Commerce in explosives

49 CFR 171-177, Hazardous materials regulations

[29 CFR 1910.109, Explosives and blasting agents](#)

In addition, the following Purchaser-specific requirements apply:

- Prior to the start of blasting operations, the blasting operations Contractor shall develop and submit a written site-specific blasting program. The program shall cover at a minimum the following:
  - Training of employees in handling, transporting, loading, and detonating of explosives, and inspecting the blast area post-detonation.
  - Ordering, receiving, and storing of explosives.
  - Disposing of old or damaged explosives.
  - Safety of all employees in the area of the blast and mucking operations.
  - Heavy equipment safety.
- Any loss or theft of explosives or unauthorized entry into storage area shall be immediately reported to the Purchaser's site manager.
- Storage magazines for explosives shall be safely isolated from other project activities, and a certified copy of the permit or license must be posted at each storage magazine.
- If critical receptors such as gas, electric, water, fire alarm, telephone, telegraph, steam utilities, and additionally any existing operating plant facilities or adjacent structures such as homes could receive or claim damage, the blasting Contractor shall arrange for seismographic blast monitoring. Copies of all seismographic test monitoring shall be provided to the Purchaser's site manager.
- Only electric delay blasting caps, nonelectric delay blasting caps, or detonating cord shall be used for blasting operations in congested areas or adjacent to highways open to traffic. Electric blasting methods require the prior approval of the Purchaser's site manager.
- No one shall be permitted to carry detonators or primers of any kind on his or her person.

### 36.0 WELDING, CUTTING, AND HEATING OPERATIONS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.350, Gas welding and cutting](#)  
[29 CFR 1926.351, Arc welding and cutting](#)  
[29 CFR 1926.352, Fire prevention](#)  
[29 CFR 1926.353, Ventilation and protection in welding, cutting, and heating](#)  
[29 CFR 1926.354, Welding, cutting, and heating in way of preservative coatings](#)

In addition, the following Purchaser-specific requirements apply:

- Workers shall follow the applicable facility's procedures when engaged in welding, cutting, or heating operations.
- Depending on potential hazards and the scope of the project, the Purchaser's site manager may determine the need to implement a welding, cutting, and heating permit system. For an example, see [Hot Work Permit](#).
- A dry-chemical fire extinguisher shall be within the immediate vicinity (25 ft) of all welding and burning activities.

- The need for a fire watch during welding or cutting operations will be determined by project/facility requirements.
- Fire watch personnel shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas and try to extinguish them only when obviously within the capacity of the equipment available or sound the alarm. A fire watch shall be maintained for at least a half-hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

#### NOTE

Certain power generation facilities use Powder River Basin (PRB) coal as a fuel source and require a fire watch for a full 8 hours after welding, burning, or grinding ceases in designated areas. Fire watch personnel may have to be on different levels and possibly in other rooms, depending on the configuration of the building.

- Soft-hat welding is not allowed without a formal exemption.
- While grinding or chipping, the operator and helper(s) shall wear a faceshield and appropriate safety glasses or goggles.
- At a minimum, welders and helper(s) shall wear clothing made of 100-percent natural fibers or fire-retardant material, long-sleeved shirts, and appropriately tinted glasses with side shields or welding eye goggles.
- All oxyfuel burning and welding units shall be equipped with flashback arrestors installed, maintained, and inspected per the manufacturer's requirements.

#### NOTE

Contractors working on Hydro Modernization Projects must follow the requirements set forth in Southern Company Generation procedure [SCG-SH-0410, Hot Work](#).

### 37.0 PRESSURE VESSEL, TANK, AND PIPING SYSTEM TESTING

Contractors shall, at a minimum, meet the requirements set forth in:

ANSI/ASME B31.1, Power Piping  
ANSI/ASME Boiler and Pressure Vessel (B&PV) Code, Section I, Power Boilers  
ANSI/ASME Boiler and Pressure Vessel (B&PV) Code, Section VIII, Pressure Vessels  
ASME B31.3, Process Piping  
[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)  
[Section 22.0, Accident Prevention Signs and Tags](#)  
[Section 23.0, Barricades](#)  
[Southern Company Records Retention Schedule](#)

In addition, the following Purchaser-specific requirements apply:

## NOTE

For the purpose of this specification, pressure vessels include both temporary construction and permanent equipment installations.

- All testing of pressure vessels, tanks, and piping systems shall be hydrostatic or pneumatic. Tests shall be performed either to:
  - Verify the integrity of a pressure vessel, tank, or piping system, or to
  - Confirm system functionality, for example, through service testing.
- When testing systems that involve pressurized hazardous fluids and gases, Construction Safety and Health shall review the site-specific test procedures that have been developed or reviewed by TSS Mechanical Design for applicable safety and health requirements.
- Test procedures shall address applicable hazardous energy control requirements. For equipment under startup or generating facility control, SCG-SH-0201, Lockout/Tagout (LOTO) Procedure, shall be the governing procedure.
  - For systems under startup or generating facility control, a lockout/tagout (LOTO) with appropriate isolation points shall be established prior to performing any work. When introducing a source of hazardous energy by way of the testing media (hydrostatic or pneumatic), a release for test shall be obtained as required by SCG-SH-0201.
- Prior to start of any test, a pretest job safety analysis (JSA) or job safety briefing (JSB) meeting shall be held with all personnel involved. Items to discuss and document on the JSA or JSB include:
  - The individual(s) in charge of the test.
  - Personal protective equipment (PPE) requirements.
  - Test pressures.
  - Hold points during the test.
  - Appropriate signs and barricades.
  - The size and configuration of the barricaded area.
  - The point(s) in the test when personnel can cross the boundaries and enter the barricaded area to check for leaks.
  - The point(s) in the test when personnel can make repairs.
  - Location of nearest eyewash and safety shower.
  - Any other known safety hazard.
- Boundaries for the test area shall be evaluated and established based on test pressures involved and access and egress requirements. Boundaries shall be maintained at all times during testing activities. Boundaries shall be identified with a warning barricade (red) and signage appropriate to the test using language such as DANGER – PNEUMATIC TESTING IN PROGRESS or DANGER – HYDROSTATIC TESTING IN PROGRESS. Signs shall be placed in increments not to exceed 25 ft.

Additionally, high traffic areas may require a monitor to be posted to alert individuals who approach the test boundary and to visually ensure the integrity of the boundary. See section [22.0, Accident Prevention Signs and Tags](#), and section [23.0, Barricades](#), for general barricade and signage requirements not specifically covered by this specification.

- During testing, personnel shall not be permitted within the boundaries of the test area while pressure is being increased. Access shall be allowed only during established hold points as identified in the test plan.

### **37.1 Test Pressure**

Personnel performing tests as described in this standard shall ensure the test pressures used are approved by TSS Engineering Design.

### **37.2 Relief Valves**

Relief valves shall be installed for all tests. The relief valve setting shall be set to no more than 110 percent or 10 psi above the test pressure, whichever is lower.

### **37.3 Test Gauges**

Test gauges shall have a sufficient range, allowing the upper limits of the test pressure to be 33 to 66 percent of the gauge range. Calibration of test gauges shall follow manufacturer's recommendations.

### **37.4 Temporary Test Blanks**

Temporary test blanks shall be fabricated and installed in accordance with applicable engineering specifications.

### **37.5 Test Limitations**

- Blinding or bypassing is required for the isolation of:
  - Equipment and equipment seals, for example, pumps, turbines, compressors, and package units that have been previously tested by the manufacturer.
  - Equipment and vessels that are not to be subjected to pressure testing.
  - Vessel components that would be contaminated or damaged by the testing media.
  - Equipment that cannot be drained or pneumatically tested, or if the manufacturer specifically recommends that tests should not be made.
- Any installed filter elements shall be removed from the system prior to pressure testing.
- All instruments shall be protected from damage when hydrotesting piping systems.
- All instrument air signal tubing shall be excluded from testing.
- Process lead lines for instruments that are to be excluded from pressure testing shall be tested to the first block valve.



### 37.6 Hydrostatic Testing

- Vents or drains shall be installed at the high or low points of all lines to be hydrostatically tested. The vents or other connections shall be opened to eliminate air from lines that are to be hydrostatically tested. Lines shall be thoroughly purged of air before hydrostatic test pressure is applied. If required, additional vents or drains shall be installed with approval of TSS Mechanical Design.
- Adequate vents and drains shall be installed in the system for filling and draining. Each system shall be analyzed to locate vents for removal of all air.
  - Vents shall be full opened while filling and draining the system to purge all air and prevent possible collapse in the system.
- The preferred location for the test pressure gauge is the lowest elevation of the system and as near the test pump as practical. Test pressures shall be increased to compensate for any static head above the gauge connection.
- Lines that are variable spring, constant support, or counterweight supported shall be temporarily blocked up during testing, unless specifically directed otherwise by TSS Mechanical Design.
- Large ducts for air or steam/vapor service shall be checked for temporary supporting requirements that may be necessitated by the weight of the test media. Foundations and supports for all vessel, tank, and piping systems to be hydrostatically tested shall be verified as adequate to support the weight of the liquid medium used for testing.
- Care shall be taken to avoid overloading any parts of supporting structures that might not be able to support the test fluid weight. An example is equipment to be hydrotested that is supported by another piece of equipment.
- Test pressure shall not be applied until the piping, equipment, or vessel and the pressurizing fluid are at approximately the same temperature and meet the requirements of the applicable code.
- The system under test shall be held to applicable test pressure and maintained for not less than 10 minutes, then decreased to design pressure to perform inspection of welds and joints for leaks.
- Personnel shall wear a faceshield and safety goggles while making a close inspection for leaks.
- The maximum test pressure shall be in accordance with the applicable code.
- Personnel shall relieve pressure before making any repairs to the system being tested.
- Pressures above 600 psi shall be considered high pressure. The area where such a test is performed shall be evaluated for access and egress and limited by barricades and/or signs.

### 37.7 Pneumatic Testing

- No pneumatic testing shall be done without prior approval from TSS Mechanical Design.
- Pneumatic testing method requires careful supervision and shall be performed per the applicable code.

- If the system leaks during testing to the extent that the required test pressure cannot be obtained, the system shall be depressurized, and the necessary repairs shall be made. The system shall be retested following the same test method requirements prior to the leak being discovered. Maximum test pressure shall be in accordance with applicable code requirements.
- No adjustments or repairs are to be made on any part of the test system while it is pressurized.
- When using test gasses that, in the event of a leak, have the potential to displace oxygen, a sufficient number of calibrated air monitors will be available and used based on the workforce and location of the tested system.

### 38.0 COMPRESSED GAS CYLINDERS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.101, Compressed gases \(General requirements\)](#)  
[29 CFR 1910.253, Oxygen-fuel gas welding and cutting](#)  
[29 CFR 1926.350, Welding and cutting](#)

In addition, the following Purchaser-specific requirements apply:

- Compressed gas cylinders shall be stored and used in the upright position.
- Cylinders shall be secured with a noncombustible material to provide maximum stability and prevent them from falling.
- Cylinders shall not be secured by their valves or collars.
- Cylinders shall be placed in carts or storage racks only.
- Cylinders must be secured within and hoisted in racks, carts, or similar devices specifically designed for hoisting compressed gas cylinders.

#### NOTE

Slings manufactured and marketed for hoisting of compressed gas cylinders are not permitted as their use is considered a violation of the OSHA standard 29 CFR 1910.253(b)(5)(ii)(A) and 29 CFR 1926.350(a)(2).

### 39.0 TRANSPORTING PERSONNEL

The following Purchaser-specific requirements apply:

- All forms of transporting personnel require a site/facility plan that addresses:
  - Safe operation, to include use of safety features:
    - Seatbelts.
    - Rollover protection system (ROPS).
    - Backup alarms (required if the view to the rear is obstructed).

- Observation of rated capacities.
- Inspection and maintenance:
  - An initial inspection is required prior to placing a vehicle in service. [A sample vehicle inspection form is available.](#)
    - Access and egress.
    - Material transport with personnel.
    - The use of pickup truck beds to transport personnel on project sites.
  - The use of pickup truck beds to transport personnel offsite is prohibited.
    - Persons riding the truck bed shall keep all body parts within the vehicle while the vehicle is on motion.
  - The operator must have an appropriate class vehicle operator license valid for use on public roadways and meet any additional site or regulatory requirements.
  - All forms of transporting personnel require a site/facility plan that addresses safe operation, inspection, maintenance, access and egress, material transport with personnel, and use of pickup truck beds to transport personnel on project sites.

#### 40.0 WORKING OVER OR NEAR WATER

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.269\(w\)\(5\), Protection against drowning](#)  
[29 CFR 1926.106, Working over or near water](#)

In addition, the following Purchaser-specific requirements apply:

- A personal flotation device (PFD) labeled FOR RECREATIONAL USE ONLY shall not be used. A PFD labeled FOR RECREATIONAL AND COMMERCIAL USE is acceptable.
- The PFD must be appropriately sized for the individual and worn per the manufacturer's requirements.

#### 41.0 COMMERCIAL DIVING OPERATIONS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910, Subpart T, Commercial diving operations](#)

In addition, the following Purchaser-specific requirements apply:

Contractors shall follow the requirements set forth in:

[SCG-SH-0610, Commercial Diving Operations Checklist.](#)

The Contractor-developed dive plan shall be submitted to the Purchaser for review, and the Purchaser will complete the Commercial Diving Operations Checklist (SCG-SH-0610) prior to commencing dive operations.

## 42.0 DEMOLITION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926, Subpart T, Demolition](#)  
[29 CFR 1926.850, Preparatory operations](#)  
[29 CFR 1926.851, Stairs, passageways, and ladders](#)  
[29 CFR 1926.853, Removal of material through floor openings](#)  
[29 CFR 1926.854, Removal of walls, masonry sections, and chimneys](#)  
[29 CFR 1926.855, Manual removal of floors](#)  
[29 CFR 1926.856, Removal of walls, floors, and material with equipment](#)  
[29 CFR 1926.857, Storage](#)  
[29 CFR 1926.858, Removal of steel construction](#)  
[29 CFR 1926.859, Mechanical demolition](#)  
[29 CFR 1926.860, Selective demolition by explosives](#)  
[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)  
[29 CFR 1926.1101, Asbestos](#)  
[29 CFR 1926.1153, Respirable crystalline silica](#)  
[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)

In addition, the following Purchaser-specific requirements apply:

- Before the start of demolition operations, the Contractor shall submit a predemolition engineering survey to the Purchaser for review. [A sample predemolition engineering survey form is available.](#)
- The Contractor's demolition competent person shall perform and document the required daily demolition inspection. Documentation shall be available for review by the Purchaser upon request. [A sample demolition daily checklist is available.](#)
- Prior to beginning demolition of any existing system, workers shall verify all sources of energy are shut off, capped, or otherwise controlled. Generation Safety and Health procedure SCG-SH-0201, Lockout/Tagout (LOTO) Procedure, shall be the governing procedure.
- A temporary electrical power plan shall be developed for demolition projects. This plan will be developed with TSS Engineering Design to supply necessary power for 600-V equipment after station service is removed. The equipment to be supplied includes, but is not limited to:
  - Stack lighting for personnel safety and FAA requirements.
  - Stack elevator.
  - Sump pumps.
  - Personnel elevators.
  - Overhead cranes.

- Fire protection systems.
- The use of existing plant switchgear in a temporary power circuit will not be allowed. Exceptions will follow the requirements of the deviation approval process; see section [16.0, Deviation Requests](#).
- Temporary electrical power will be provided by way of dedicated cables or raceways that have been designated for temporary power use. Existing permanent circuits will not be used for temporary power unless the following requirements have been met:
  - The existing cable or raceway can be traced for its full length to ensure no branch circuits are involved, the integrity of the cable or raceway is intact, and can be flagged to indicate that it is redesignated for temporary power.
  - The existing cable or raceway must be clearly visible with no hidden runs.
  - Signage is posted to indicate existing permanent cables or raceways have been redesignated for temporary power.
- The Contractor responsible for temporary electrical power will provide a qualified electrician on site during demolition activities.
- The repurposing of existing plant buildings for temporary office space where branch circuits are fed within walls, ceilings, and floors shall not be allowed. Contractors will be required to provide their own temporary office space. Exceptions will be processed following the procedure deviation approval process; see section [16.0, Deviation Requests](#).
- Hazardous areas shall be prominently identified with signs. Access to demolition areas shall be restricted to authorized personnel only. See section [23.0, Barricades](#).

#### 43.0 CONCRETE AND MASONRY CONSTRUCTION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926, Subpart Q, Concrete and masonry construction](#)  
[29 CFR 1926.1153, Respirable crystalline silica](#)

In addition, the following Purchaser-specific requirements apply:

When a concrete pump truck is used for concrete placement, the concrete placement subcontractor shall be responsible for adherence to the following tasks.

Establish proper placement of concrete pump truck to include:

- Adequate ground support to support the pump truck and concrete truck.
- Adequate accessibility by concrete trucks.
- Adequate working distances from any obstructions, such as overhead obstructions or power lines.
- Traffic/equipment control needs (such as flaggers or spotters).
- A “clean out” area.
- Ensure safe distance from the edge of any excavation, as determined by the contractor competent person, is maintained.

#### 44.0 FIBER-REINFORCED PLASTICS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.1200, Hazard communication](#)  
[29 CFR 1926, subpart C, General safety and health provisions](#)  
[29 CFR 1926, subpart F, Fire protection](#)  
[29 CFR 1926, subpart I, Tools - hand and power](#)  
[29 CFR 1926, subpart H, Materials handling, storage, use, and disposal](#)  
[29 CFR 1926, subpart D, Occupational health and environmental controls](#)  
[29 CFR 1926, subpart K, Electrical](#)  
40 CFR Chapter 1, subchapter I, Solid wastes

In addition, the following Purchaser-specific requirements apply:

Each Contractor shall submit a written site-specific fiber-reinforced plastics (FRP) plan to the Purchaser for review. The plan shall provide specific procedures for the protection of personnel during FRP production activities. Elements of the site-specific plan shall include, but are not limited to, the following:

- Methods for elimination or mitigation of hazards associated with FRP production.
- An industrial hygiene plan that includes methods for exposure control along with methods and frequency of personal sampling activities for styrene, dusts, and other airborne contaminants. The industrial hygiene sampling plan must be approved in writing by a certified industrial hygienist (CIH).
  - The use of colorimetric tubes for sampling is not considered to be an effective method to determine a time-weighted average of employee dose. Personal sampling methods such as OSHA Method 09 must be used.
- Methods for fire prevention and protection including types and placement of fire suppression equipment and storage of combustible and flammable materials.
- Methods for maintaining sanitary conditions.
- The hazardous energy control program to be used for Contractor-controlled machinery.
- Specialized PPE requirements.
- Training requirements for personnel involved in the process.
- Chemical quantities required for the operation.

#### 45.0 LINE BREAK

The following Purchaser-specific requirements apply:

[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)

The Contractor shall develop a line break permitting system for:

- The initial opening of a piping system.

- Subsequent opening of an undrained system.
- Hot tap tie-ins.
- Any unknown or abandoned piping system.

The permitting system must include provision for:

- Identifying personnel involved in line break.
- Verifications of break points or cut points.
- Standardized visual identification of break/cut points in the field.

[A sample line breaking permit is available.](#)

## 46.0 FALLING OBJECT PROTECTION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.451, Scaffolds –General requirements](#)  
[29 CFR 1910.28, Duty to have fall protection and falling object protection](#)  
[29 CFR 1926.759, Falling object protection](#)

The following Purchaser-specific requirements apply:

- The Contractor is responsible for developing a written plan that provides for falling object hazard prevention for work activities performed over sensitive equipment or lower levels where personnel could be subject to hazards from falling objects. Some methods of hazard prevention for consideration include, but are not limited to:
  - Lanyards and tethers for handtools.
  - Canvas-type bolt bags.
  - Load slings and tag lines for crane-lifted loads.
  - Barricades or ground man to prevent personnel from entering an area where falling objects can occur.
  - Canopies, catch platforms, and debris nets.
  - Scaffolds.
  - Housekeeping.
  - Training, including job safety analyses (JSAs).
- All hand-held tools used in overhead work must be secured with a tool lanyard or tether to prevent the tools from dropping to lower levels. A tool lanyard, a short rope, or webbing used to secure tools and equipment to an anchorage point to reduce the risk of injury from a falling object may be attached to an anchorage point such as the person using the tool or around a column or beam.
- While working on upper levels not protected by handrails, workers shall transfer tools and materials in canvas-type bolt bags instead of buckets. Workers shall not use plastic and metal buckets to hoist materials or tools to upper levels, because these types of buckets are not designed for lifting. This restriction includes rope-and-pulley-type systems. All buckets used for lifting must be approved lifting devices.

#### 47.0 CONFINED SPACE ENTRY

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.146, Permit required confined spaces](#)  
[29 CFR 1926, Subpart AA, Confined spaces in construction](#)  
[SH-2A-33, Safe Work Procedures for Confined Spaces](#)  
SCO-SH-0100, Confined Spaces and Enclosed Spaces (forthcoming)  
[Southern Company Records Retention Schedule](#)

In addition, the following Purchaser-specific requirements apply:

- **SCG-SH-0100, Safe Work Procedures for Confined Spaces (most current revision).**
- **The Purchaser will not provide a rescue team. The contractor must plan for and provide for rescue services and equipment. Rescue team(s) shall be established to fulfill the needs and requirements of the site/facility and regulatory requirements.**

#### NOTE

**When approved, SCO-SH-0100, Confined Spaces and Enclosed Spaces, will replace SCG-SH-0100. Contractors will be notified of the change.**

#### 48.0 FLOOR OPENING, WALL OPENING, AND GUARDRAIL REMOVAL

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.21, Walking-working surfaces](#)  
[29 CFR 1926.502\(b\), Fall protection systems criteria and practices](#)  
[29 CFR 1926.501\(b\)\(4\)\(ii\), Duty to have fall protection, holes](#)

In addition, the following Purchaser-specific requirements apply:

[SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal](#)

#### 49.0 ELEVATORS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.552, Material hoists, personnel hoists, and elevators](#)  
ANSI A10.4 2007, Personnel Hoists and Employee Elevators on Construction and Demolition sites  
ASME A17.1 2013, Safety Code for Elevators and Escalators  
ASME A17.3 2015, Safety Code for Existing Elevators and Escalators

In addition, the following Purchaser-specific requirements apply:



All manufacturer's requirements and local, state, and federal codes shall be followed for the installation, use, and maintenance of temporary construction elevators. At a minimum, the following standards shall govern the installation, use, and maintenance of elevators on Purchaser sites:

- ANSI A10.4 2007, Personnel Hoists and Employee Elevators on Construction and Demolition Sites.
- ASME A17.1 2013, Safety Code for Elevators and Escalators.
- ASME A17.3 2015, Safety Code for Existing Elevators and Escalators.
- Temporary construction elevators shall be load-tested according to the manufacturer's recommendations. Results shall be documented and made available for review upon request.
- Signage indicating the maximum number of passengers and the rated load shall be posted in the passenger car. Emergency information shall also be posted. Signage shall be visible and legible. For locations that require operating permits or licenses, the permit or license shall be posted to meet requirements and kept current at all times.
- A fire extinguisher of the appropriate size and class shall be provided and mounted properly in the passenger car.
- An operator shall be assigned to operate manually controlled elevators.
- The elevator operator shall be trained on the operational controls and emergency procedures. The training shall be conducted by a manufacturer's representative or a competent person designated by management and shall be documented. Training shall include:
  - Make-and-model-specific written test.
  - Make-and-model-specific functional test.
- A means of communication shall be provided. Acceptable means of communication include, but are not limited to:
  - Intercom system (independently powered).
  - Two-way radio.
  - LINC phone.
- Fall protection equipment shall be staged in or on the car for use when needed during a rescue. Appropriate quantity and sizes of fall protection equipment shall be determined by site management.
- The operator shall not allow the elevator's rated capacity to be exceeded at any time.
- Protective systems shall be installed to prevent contact with any moving parts (car, cables, pulleys, and so forth) at each elevation where personnel could be exposed to a hazard.

#### **49.1 Existing Plant and Stack Elevators**

- The use of existing plant elevators shall be coordinated with the Purchaser. Contractors shall ensure personnel assigned to the project follow the rules and requirements of the facility.

- If required by the facility, an elevator operator shall be assigned to an existing plant elevator. The operator(s) shall meet the same training requirements as a temporary construction elevator operator.
- Users of stack elevators shall be trained in accordance with the facility requirements prior to using a stack elevator.
- A means of communication shall be established with personnel working in or using stack elevators.

#### **49.2 Elevator Maintenance, Inspection, and Repair**

- Elevators shall be inspected, maintained, and repaired according to the manufacturer's guidelines. In addition, all local, state, and federal inspection requirements shall be met.
- Provisions for a site technician should be considered for timely repair in the case of equipment failure while the elevator is occupied.
- Elevator inspections and repairs shall be made only by authorized, qualified personnel.
- No alteration shall be made to an elevator without written authorization from the manufacturer.
- Inspection, maintenance, and repair records shall be documented and made available to the Purchaser on request.

#### **50.0 PERSONAL PROTECTIVE EQUIPMENT (PPE) (COVER ALL PPE CATEGORIES)**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.132, Personal protective equipment](#)  
[29 CFR 1926.95, Criteria for personal protective equipment](#)

In addition, the following Purchaser-specific requirements apply:

- Contractor's written PPE assessment shall cover all PPE categories appropriate to the contractor's scope of work and shall be available to the Purchaser for review on request. [A sample PPE assessment form is available.](#)
- Minimum PPE requirements:
  - Hardhat meeting Z89.1 and/or Z89.2.
  - Workers potentially exposed to any voltage shall wear a hardhat that meets Di-electric standards.
  - Z87.1-rated safety glasses with side shields or equivalent. Glasses tinted beyond indoor/outdoor (dark tinted) glasses may not be worn indoors.
  - Foot protection shall meet the requirements in ANSI Z41-1991, Safety Toe Footwear.
  - Shirts with minimum 4-in. sleeves.
  - Long trousers (no shorts).
  - High visibility clothing (T-shirt/vest) at a minimum. High visibility vest meeting ANSI Class II when exposed to vehicular traffic.

- Appropriate gloves for task, for example, cut/puncture-resistant, impact protection, chemical-resistant.
  - Contractors shall develop a list of approved protective gloves based on the task and hazards. This list shall be provided to the Purchaser upon request, for review.
- Hearing protection in accordance with OSHA/facility requirements.
- Arc flash protective clothing when exposed to arc flash potentials.

## 51.0 FIRE PROTECTION AND PREVENTION

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926, Subpart F, Fire protection and prevention](#)

In addition, the following Purchaser-specific requirements apply:

- Fire extinguishers shall be located on all self-propelled equipment.
- Open-flame burn barrels, burning scrap wood piles, and so forth are prohibited.
- Solid fuel “salamanders” are prohibited.

## MAJOR EQUIPMENT

### 52.0 QUALIFYING EQUIPMENT OPERATORS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)

[29 CFR 1910.178, Powered industrial trucks](#)

[29 CFR 1910.179, Overhead and gantry cranes](#)

In addition, the following Purchaser-specific requirements apply:

- Each worker shall have a valid state driver’s license to operate mobile equipment or vehicle including utility carts. Mobile elevated work platforms are exempted.
- Workers who are assigned work involving the operation of mobile equipment shall be trained in the operation and use of the specific piece of equipment.
  - Worker training shall include a written and practical examination demonstrating the worker’s ability to safely operate and inspect the mobile equipment. For mobile elevated work platforms, training shall be performed based on group and type. See section [56.0, Mobile Elevated Work Platforms \(Aerial Lifts\) and Bucket Trucks](#).

- The training, written test, and practical examination shall be conducted and documented by a supervisor designated as an equipment competent person, a recognized outsourced representative, or a manufacturer’s representative.
- After completion of the training and successfully demonstrating competence in the operation of the mobile equipment, the worker shall be issued a written authorization by his or her employer to operate the mobile equipment. [A sample equipment operator authorization form is available.](#)
- A worker shall be retrained if there is any reason to believe he or she does not possess the knowledge or skills required to work safely. The following circumstances require retraining:
  - Workplace changes that render the previous training obsolete.
  - The worker demonstrates a lack of knowledge of mobile equipment or safe working procedures.
- The Contractor shall maintain a list of authorized employees and the equipment they are trained and authorized to operate. This list shall be made available to the Purchaser on request.
- The employer shall maintain and keep available for review a record of the training, practical examination results, and written authorization.
- For cranes that are covered by 29 CFR 1926 Subpart CC, all crane operators shall meet the following requirements:
  - Be qualified in strict compliance with 29 CFR 1926 Subpart CC, Cranes and Derricks in Construction, for third-party certification of operators.
  - Have current certification and hold a license for the class of crane to be operated. The certification shall be issued by a nationally recognized certifying agency, accredited by a nationally recognized agency, such as the National Commission for Certifying Agencies (NCCA).
  - Pass the following examinations and tests:
    - A preassignment physical examination conducted per the requirements of ASME B30.5 (current version).
    - A written examination on the specific make and model.
    - A functions test on the actual piece of equipment to be assigned.
- For “house” cranes covered by 29 CFR 1910.179 Subpart N, all operators shall meet the following requirements:
  - Operators shall receive initial training and pass a written and skills test prior to being qualified to operate overhead and gantry “house” crane.
  - Training can be conducted by a Contractor representative who meets the requirements of a qualified person and has been deemed by the Contractor as a competent person.
  - The training shall include a review of the unique requirements for specific cranes to be operated.

- Operators shall be retrained under any of the following circumstances or at the discretion of the Purchaser:
  - The operator is observed operating a crane in an unsafe manner.
  - The operator is involved in an accident involving overhead and/or gantry cranes.

### 53.0 CRANES, DERRICKS, AND POWERED HOISTS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)  
[29 CFR 1910.179, Overhead and gantry cranes](#)  
[29 CFR 1910.180, Crawler locomotive and truck cranes](#)  
[29 CFR 1910.181, Derricks](#)  
[SCO-SH-0812, Rigging and Lifting](#)

Prior to the operation of any crane, the Contractor shall submit operator certification documentation to the Purchaser for review.

In addition, the following Purchaser-specific requirements apply:

- After arrival onsite and prior to initial use, all new, newly installed, or altered cranes shall have an OSHA annual certification inspection performed by a third-party crane inspector who meets OSHA/ASME qualification requirements before being placed in service.
  - Before being returned to service, a crane that has been idle for more than 6 months shall have an OSHA annual certification inspection performed by a third-party crane inspector who meets OSHA and ASME qualification requirements.
  - Before being placed in service, a crane that has been idle for 1 month or more, but less than 6 months, shall be given an inspection conforming to the requirements of daily and monthly inspections.
- Prior to use, any crane disassembled for transport and reassembled at the site shall be inspected by a qualified third party. This requirement is applicable even if the crane has a current annual sticker from the previous work site.
- The Purchaser shall approve all third-party inspection companies and personnel before the third-party inspection company inspects the cranes to be used on the Purchaser's projects.
- The Purchaser shall approve all crane supplier and erection supervisors who will be supplying and erecting cranes on the Purchaser's projects.
- The hook and becket inspection:
  - Shall be performed at the same time as the initial crane inspection.
  - Shall include a nondestructive examination (NDE) performed before the crane is authorized for use. The NDE shall be performed by a person currently certified by the American Society for Nondestructive Testing (ASNT) to a Level II or III in the type of test to be performed. The testing company shall submit test

procedures or instructions for each method of testing prepared by a person currently certified Level III by the ASNT. In addition, all applicable certifications of the technician performing the examination shall also be submitted.

- The most current certified load-bearing information shall be provided to each Contractor during the inquiry phase of the contracting process and shall become part of the agreement between the Purchaser and the Contractor.
- Updates of the load-bearing certified information shall be provided to all Contractors working on the project site as required. Each Contractor has the authority and control to make the necessary ground preparations to safely perform work. In all crane and derrick activity, the Contractor shall be the controlling entity and shall comply with the regulation.

#### NOTE

A controlling entity letter will be issued to all Contractors awarded crane work on the Purchaser's projects.

- Each Contractor shall designate a competent person for the management of the crane inspection process. This person shall administer and document a crane operator license program and an equipment inspection program.
- All inspection records (daily, monthly, annual) and repair records shall be documented and made available to the Purchaser for review upon request.
- Rented or leased hoists shall have new cable installed with a documented inspection prior to being placed in service.
- Load test certifications for hoists shall be provided and placed on file prior to the hoist being placed in service.
- Hoist operators shall be qualified per section [52.0, Qualifying Equipment Operators](#).
- Loads to be lifted/pulled with a hoist are restricted to a maximum of 75 percent of the rated capacity of the hoist and/or setup.
- Lift with a hoist shall follow the requirements found in SCO-SH-0812, Rigging and Lifting.

#### 54.0 MOBILE EQUIPMENT TRANSITING NEAR ENERGIZED ELECTRIC LINES

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926, Subpart K, Electrical](#)  
[29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)

In addition, the following Purchaser-specific requirements apply:

- Before work begins on a project, a site assessment team shall be established, composed of representatives from Transmission, Distribution, Construction, Engineering, plant personnel, and any additional applicable utility owner. The site assessment team shall define areas of concern, boundaries of safe work areas, and other control measures necessary to eliminate or mitigate the hazards associated with energized power lines.

- The preferred safety method for mobile equipment transiting near energized electric lines is to deenergize and ground the lines near the worksite or equipment crossings. If it is not feasible to deenergize lines, the following requirements shall be met:
  - Mobile equipment with rubber tires shall not be parked under high voltage transmission lines. A static charge can build up, and a severe shock can be transmitted to the operator accessing the mobile equipment.
  - All employees shall be instructed on all hazards involved, including the potential hazard of a high-voltage line contacting the earth or an object that is not insulated from the earth.

For mobile equipment in transit near energized electric lines:

- Minimum Clearance Distance:

**CAUTION**

**The minimum safe clearance distance from the power line shall be maintained unless the hazard has been eliminated or properly controlled with the controlling utility and noted on the [Overhead Line Permit](#).**

- Mobile equipment and materials in transit shall maintain clearance distances listed in table 2, Equipment in Transit - Minimum Clearance Distances, and shall engage the use of a spotter or goalpost.

**Table 2, Equipment in Transit – Minimum Clearance Distances**

Voltage	Minimum Clearance
Up to 230 kV	10 ft
Greater than 230 kV	16 ft

- If the distance to an overhead or adjacent line is less than 20 ft, a dedicated spotter is required. The spotter shall walk ahead of the vehicle and aid the operator in identifying clearance issues.
- The crew foreman, operator, and spotter shall complete the JSA/STA together, identifying control measures for each of the following hazards:
  - Overhead power line locations.
  - Buildings or other obstructions that could pose clearance issues.
  - Vehicular traffic.
  - Pedestrian traffic.

## 55.0 MOBILE EQUIPMENT WORKING NEAR ENERGIZED LINES

If the mobile equipment or load can reach the danger zone, a meeting shall be held onsite with the utility to establish safety procedures. Safety procedures shall be established before work begins.

Other than in transit, an approved overhead line permit is required for any piece of equipment or any part of its load coming closer than the minimum distance identified in table 3, Minimum Working Distances for Mobile Equipment in Operation Without an Overhead Line Permit. For an example, see [Overhead Line Permit](#). Determine permit requirements based on information in table 2.

**Table 3, Minimum Working Distances for Mobile Equipment in Operation Without an Overhead Line Permit**

<b>Voltage</b>	<b>Minimum Distance</b>
Up to 350 kV	20 ft
Greater than 350 kV up to 500 kV	50 ft
Greater than 500 kV	Contact the Purchaser's Regional Safety and Health manager.

In areas where there is no planned work on, or passage of equipment under, a live overhead line but the equipment is capable of passing under a live overhead line, Contractors shall do the following:

- Install a barrier to run parallel to the line. The barrier may be fixed post fencing or drums filled with rubble spaced no more than 8 ft apart.
- If cranes are in use, supplement the barriers with a line of flagging at a height of 10 ft.
- Space notices stating DANGER - LIVE OVERHEAD LINE at intervals no more than 50 ft.
- The following criteria shall be adhered to during non-permit-required work:
  - Mobile equipment shall not be used to handle material stored under power lines unless the equipment cannot reach the minimum distances identified in table 2. If an overhead line permit is obtained, mobile equipment is restricted to the distances identified in table 4, Minimum Working Distances for Mobile Equipment in Operation With an Overhead Line Permit.
  - Any overhead wire shall be considered energized unless the owner or electric utility provides evidence it is not energized.
  - Mobile equipment operators shall not rely on coverings (insulation) for protection.
  - The equipment and load shall be properly grounded at all times. Only qualified personnel shall determine if grounding requirements are met.
  - The area around the equipment shall be barricaded and signs posted warning personnel to stay clear.
  - The operator is the only person permitted on the equipment.
  - A signal person with no other duties shall ensure specified clearances are maintained.
  - All personnel shall maintain a safe distance while the mobile equipment is being positioned and during operation.
  - For load control, nonconductive tag lines shall be used around power lines.



**NOTE**

For Transmission Construction activity, the minimum approach distances determined through the Southern Company Survey may be used with an approved deviation and a Transmission Construction competent person assigned to the work at all times.

**55.1 Permit-Required Criteria**

- If working within the bounds of a switchyard, a switchyard access permit must be obtained through the Purchaser following Southern Company Operations procedure [SCO-SH-0211, Switchyard Access](#). See an example of a [switchyard access permit](#).
- For all other areas not within a switchyard:
  - If equipment must be used or moved closer than the safe working clearance distance identified in table 2, the Contractor shall complete an overhead line permit. A copy of the approved overhead line permit shall be posted in the mobile equipment cab.
  - The following items shall be considered for an overhead line permit:
    - Can the utility deenergize and visibly ground the power lines?
    - Can the utility move power lines beyond the safe working distance?
    - Is barrier protection an option?
  - If the location of the work requires any part of mobile equipment or its load to be less than the distances specified in table 4, Minimum Working Distances for Mobile Equipment in Operation With an Overhead Line Permit, the line shall be deenergized. If lines cannot be deenergized, the Contractor shall contact the Purchaser to coordinate safe work methods.

**Table 4, Minimum Working Distances for Mobile Equipment in Operation With an Overhead Line Permit**

Nominal kV, alternating current	Minimum Clearance Distance (ft)
Up to 50 kV	10 ft
Greater than 50 kV up to 200 kV	15 ft
Greater than 200 kV up to 350 kV	20 ft
Greater than 350 kV up to 500 kV	25 ft
Greater than 500 kV	Contact the Purchaser's Regional Safety and Health manager.

**56.0 MOBILE ELEVATED WORK PLATFORMS (AERIAL LIFTS) AND BUCKET TRUCKS**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.67, Vehicle-mounted elevating and rotating work platforms](#)  
[29 CFR 1926.453, Aerial lifts](#)  
ANSI A92.20

In addition, the following Purchaser-specific requirements apply:

- A competent person must perform a documented inspection on all mobile elevated work platforms (MEWP) prior to their use on site and at least quarterly thereafter. Operators shall perform daily pre-use inspections including the testing of lift controls to ensure that the controls are in safe working condition. Documentation shall be made available to the Purchaser for review upon request. [A sample aerial lift \(MEWP\) inspection form is available.](#)
- All Contractors and projects that use aerial lifts and bucket trucks to access any elevated areas shall develop an effective site-specific plan for dealing with a stuck basket or personnel rescue. At a minimum, the plan shall include:
  - How the occupants will be removed from an immobilized basket prior to its extrication.
  - How a stuck basket will be safely released.
  - How personnel who fall from a basket will be rescued.
- All MEWPs (JLG, Genie, etc.) with baskets attached to booms must be equipped with secondary guarding. The secondary guarding must be designed to prevent crushing injuries and pinning of operators between the operating controls of the aerial work platform and fixed objects/structures. All rental and Contractor-owned MEWPs shall meet these requirements.
- Operators shall be trained and qualified based on group and type. All other requirements of section [52.0, Qualifying Equipment Operators](#), apply:

- MEWP groups:

<b>MEWP groups</b>	
<b>Group A</b>	The MEWP moves vertically but within the tipping lines, such as a scissor lift.
<b>Group B</b>	The MEWP can move beyond the tipping lines (outriggers or wheels), such as a boom lift.

- MEWPs are further classified into types:

<b>MEWP types</b>	
<b>Type 1</b>	The equipment can only be driven with the platform in its stowed position.
<b>Type 2</b>	The equipment can be driven elevated but is controlled from the chassis.
<b>Type 3</b>	The equipment can be driven elevated and is controlled from the work platform.

- Prior to using a MEWP, the Contractor shall perform a documented risk assessment and write a safe use plan to include all of the following information:
  - Identification of the task to be undertaken.
  - Selection of an appropriate MEWP.
  - Assessment of risk.

- Development of control measures.
- Identification of safe work procedures.

It is important to recognize the risk assessment and safe use plan document is required for all MEWP operations. Documentation shall be provided to the Purchaser for review on request. [A sample suspended personnel platform checklist is available.](#)

- The MEWP operator is required to provide instruction or otherwise ensure all occupants have a basic level of knowledge to work safely on the MEWP. This requirement does not authorize nonqualified occupants to operate the MEWP in nonemergency situations.
- When working from a MEWP at height and before exiting the basket to the structure, personnel shall perform a two-part risk assessment:
  - First, personnel shall determine if exiting the basket at height is the safest method of work.
  - If so, they shall then determine a safe procedure for doing so. Fall protection and 100-percent tie-off shall be a primary consideration.

## 57.0 FORKLIFTS

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.178, Powered industrial trucks](#)  
[29 CFR 1926.602, Material handling equipment](#)

In addition, the following Purchaser-specific requirements apply:

- All material-handling equipment equipped with forks shall be equipped so the operator can adjust the forks remotely from the cab, either hydraulically or electrically. Manually adjusting forks shall not be allowed.
- Telehandlers shall be designed so a person cannot enter the area between the front and rear tires.
- Contractors shall use only those attachments that are engineered and approved by the manufacturer.
- The following operator sight lines and safety aids shall be included:
  - Operator sight lines from the cab shall be provided for in one or a combination of the following manners:
    - Equipment design – Equipment shall be configured in a manner that the operator has unobstructed sight lines when the boom or mast is in the carry position and when setting or picking up loads at or near the ground. The mounting point of the boom or mast to the structure is an exception.
    - Operational or safety aids:

- A camera system with display mounted in the cab that provides coverage for the areas where the operator's sight lines may be impeded.
  - The display must be active when the unit is in operation. Multiple cameras may be used, if needed. When multiple cameras are displayed on a single display unit, the use of a split screen is preferred.
  - Unless otherwise designed by the manufacturer, the camera systems (camera, display, and associated hardware) are intended to be a safety device only and not an operational aid.
  - A mirror system that provides coverage of areas where the operator's visibility may be impeded when the boom or mast is in the carry position and when setting or picking up loads at or near the ground.
  - A proximity warning system that provides an audible alarm when a predetermined distance from the unit has been encroached upon. The alarm activation distance will be determined by the operational specifications of the system but shall be no less than 5 ft.
- Spotters – Spotters may be used to provide warning to the operator as follows:
  - Contractors shall provide a written plan for the use of spotters for review by Purchaser.
  - Operators and spotters shall have documented training on the plan.
  - Operational requirements for the use of spotters shall be noted on the task-specific JSA.
  - When used, spotters shall position themselves in the operator's sight lines at all times.
  - Spotters shall have no other function or duties or participate in activities that may distract them from their assigned duties while equipment is in motion.
  - If the operator loses sight of the spotter, the operator shall stop immediately.
  - One or more spotters are required at all times when used to provide coverage for impeded operator sight lines. Otherwise, spotters shall be used when operating in areas of high traffic (pedestrian or equipment), close quarters, or proximity to vital plant equipment.
- Inspection – Operators shall inspect the equipment prior to each shift. An equipment checklist shall be used to document equipment inspections. Documented inspections shall be made available to the Purchaser for review, on request. [A sample forklift inspection form is available.](#)

## 58.0 EARTH-MOVING EQUIPMENT

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.600, Motor vehicles, mechanized equipment, and marine operations](#)

[29 CFR 1926.602, Material handling equipment](#)  
[29 CFR 1926.604, Site clearing](#)

In addition, the following Purchaser-specific requirements apply:

Section [33.0, Excavation and Trenching](#)  
Section [52.0, Qualifying Equipment Operators](#)

- A qualified inspector shall inspect all equipment before its use onsite. [A sample inspection form for earth-moving equipment is available.](#)
- Operators shall inspect the equipment prior to each shift. An equipment checklist shall be used to document equipment inspections.
- Equipment shall be operated in accordance with local traffic regulations. The Contractor should make arrangements to provide, properly train, equip, and position personnel for traffic control where work may interfere with public traffic or site traffic where it may interfere with other Contractors.
- During refueling, the engine shall be shutoff, and a fire extinguisher shall be present.
- Any equipment operated after dark shall be equipped with factory lighting or an approved equivalent. Additionally, an amber rotating or flashing beacon light shall be equipped and used.
- Seatbelts shall be used at all times during operation of equipment.
- While moving tracked equipment on paved surfaces, the Contractor shall provide protection to prevent pavement damage.
- In large earth-moving operations, the Contractor shall establish a written man-on-the-ground (MOG) program as part of the site-specific safety plan. At a minimum, the MOG program shall include those actions and safeguards to be implemented to protect personnel who must walk near heavy equipment. All site personnel shall be trained on the MOG program and the safety plan, and training shall be documented. [A sample Man-on-the-Ground Program is available.](#)
- Hydraulic lines shall be maintained to prevent leakage. If a spill occurs, the spill shall be cleaned according to site/facility- and governing-agency regulations.
- Backhoes shall not be used for operations exceeding the manufacturer's recommendations or capacity of the equipment (for example, using the backhoe boom instead of a crane). If the manufacturer permits the backhoe's use as a crane, the rigging shall meet site requirements and be attached to the bucket according to manufacturer's recommendations and load charts. Radius capacities shall be posted on the backhoe.
- If the cab of the dump truck is equipped with vertical and horizontal protection (designed to withstand the impact of material being loaded), all personnel may remain in the cab of the truck during loading of the dump bed with material less than 3 in. in diameter. If the cab has insufficient protection and/or the materials are larger than 3 in. in diameter, all personnel shall exit the truck cab during loading operations.
- The operator and any passengers shall all wear required PPE while they are outside the vehicle/equipment.
- The operator shall verify overhead clearances and maintain minimum safe-working distances from live electrical lines.
- Dump beds shall be down and locked before moving.
- All earth-moving equipment shall have rollover protection.

- If loads are covered, covers shall not be removed before reaching the dump location.
- Load covers while traveling on site may be required at the Purchaser's request.

## 59.0 DRILLING EQUIPMENT

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.800, Underground construction](#)

In addition, the following Purchaser-specific requirements apply:

- All drilling and boring operations must be approved in advance by the Purchaser. A minimum of 7 working day's notification must be given.
- The drilling equipment competent person is responsible for inspecting drilling equipment used on the project.
- The responsible engineer and/or geologist is responsible for considering soil and water conditions to protect personnel from hazards.
- The responsible drilling operator is responsible for surveying the drilling area for above- and below-ground hazards.
- A drilling equipment competent person shall inspect all drilling equipment pre- and post-transportation to the drill site. In addition, the drilling equipment competent person shall conduct a pre-use inspection using a written drilling equipment checklist (such as [Drilling Equipment Inspection Form](#) or equivalent) prior to its use onsite.
- Before beginning work:
  - The responsible engineer and/or geologist shall survey subsurface soil and water for potential contaminants and develop appropriate techniques to protect personnel from exposure to identified hazards.
  - The responsible engineer, geologist, and/or and operator shall also survey the area for physical hazards above and below ground.
- Examples of potential hazards include, but are not limited to:
  - Underground pipe.
  - Underground electric cable.
  - Swing radius of equipment.
  - Above-ground power lines.
  - Unidentified backfilled debris.
- If planned activities fall within a DOT right-of-way, the Contractor shall contact the local 811 call center, as well as Technical Shared Services.
- Before drilling begins, the drilling competent person shall complete either an excavation and trenching permit (such as [Trenching and Excavation Permit](#) or equivalent) or an overhead and underground conflict resolution permit (such as [Geotechnical and Environmental Drilling Overhead and Underground Conflict Resolution Permit](#) or equivalent).
- The drilling operator shall:

- Use manufacturer-supplied attachments. If attachments not supplied by the manufacturer are used, the Contractor shall submit appropriate engineering documentation to the construction site manager for review and approval prior to using the attachment. The Contractor should discuss using non-manufacturer-supplied attachments at pre-bid and premobilization meetings to avoid delays in production.
- Use only attachments that are engineered and approved for use by the manufacturer.
- Use attachments only for their designed and intended purpose.
- Only properly trained and qualified personnel shall operate drilling equipment. See section [52.0, Qualifying Equipment Operators](#).
- When deenergizing a system where the feed cannot be identified, has been abandoned, or is fed from an unknown source, workers shall follow the requirements in section [78.0, Hazardous Energy Control \(LOTO\)](#), prior to performing any work.

### **59.1 Core Drilling**

- When core drilling, the drill operator must wear electrically rated gloves and dielectric boots or overshoes rated at a minimum of 600 V.
- Prior to the commencement of any drilling, the employee or Contractor responsible shall obtain all available information relating to the location of embedded services in the required areas.
- When drilling through a floor, wall, or ceiling, the precise position of the penetration is to be determined by the person doing the work so that damage to personnel, plant, and equipment on the other side can be avoided.
- Personnel are to be advised to keep clear of the area, and plant equipment is to be relocated or shielded against damage from water, dust, and falling objects.
- If services expected to be uncovered are not located or if services are uncovered that are not expected, further drilling shall cease, and the Owner notified.
- Barriers shall be placed around all penetrations and areas below penetrations together with suitable warning signs.
- Water used in drilling operations shall be controlled from flowing to undesirable areas.
- Where it is desired to maintain the fire rating of a particular wall, floor, or ceiling after drilling, suitable materials shall be used for filling the gaps after services have been run through the opening.
- In the event of an incident, all work shall cease immediately, and the Owner informed.
- In the event of any asbestos being discovered, all work is to cease immediately, and the Owner informed.

### **60.0 MOVEMENT OF OVERSIZED LOADS**

Contractors shall, at a minimum, meet the requirements set forth in:

[23 CFR 658.15, Truck size and weight, route designations – length, width and weight limitations, Width](#)  
[29 CFR 1926, subpart G, Signs, signals and barricades](#)

In addition, the following Purchaser-specific requirements apply:

Prior to the movement of oversized loads on the Purchaser's property, the Contractor shall submit a written plan to the Purchaser for review.

The Contractor's plan for the movement of an oversized load shall include the following information:

- The proposed haul route with verification, such as soil boring data or compaction tests, the route will support the full weight of the load. The Contractor shall conduct testing as needed to support and document the written plan.
- Measures to be taken to ensure the load will not tip during movement.
- The type and capacity of equipment that will be used to haul the load(s). Manufacturer's load ratings, manufacturer's load charts, or engineering load calculations shall be included with the plan. To facilitate the development of the written plan, the position or person who purchased or delivered engineering-procured equipment or material shall provide the site with oversized load information. The Contractor shall conduct engineering load calculations as needed.
- Placement and types of escort vehicles.
- Areas where traffic must be blocked or diverted, as well as the plans for placement of detour or closure signs and placement of traffic control personnel.
- Measures used by traffic control personnel to direct or alert oncoming traffic.
- Measures to ensure traffic control personnel are not struck by oncoming or adjacent traffic.

## **61.0 COMMERCIAL MOTOR VEHICLE OPERATIONS**

Contractors shall, at a minimum, meet the requirements set forth in:

[49 CFR 390, Federal Motor Carrier Safety Regulations](#)

## **OCCUPATIONAL HEALTH**

### **62.0 HAZARD COMMUNICATION (HAZCOM)**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.1200, Hazard communication](#)  
[29 CFR 1926.59, Hazard communication](#)



In addition, the following Purchaser-specific requirements apply:

- Each Contractor shall develop, implement, and maintain at the workplace a written site-specific HAZCOM plan that follows 29 CFR 1926.59, Hazard communication, in addition to:
  - Each Contractor shall maintain labels and other forms of warning for his or her respective chemicals in the workplace.
  - Each Contractor shall obtain Safety Data Sheets (SDS) and describe how:
    - The information will be used.
    - Workers will be trained on the information. The training shall be documented and available for review by the Purchaser.
    - The SDS file will be maintained.
    - Workers will be provided access to the SDS for the chemicals they will use.
  - **Before any chemical is brought onsite**, the Contractor shall supply the Purchaser with a copy of the SDSs for all chemicals the Contractor plans to bring onto or use at the site for review and approval.
  - Each Contractor shall supply the method used to inform his or her respective employees of the hazards of nonroutine tasks and the hazards associated with chemicals contained in unlabeled pipes and vessels in work areas.

#### NOTE

Only approved solvents are to be used for cleaning purposes. All hazardous materials, including flammable and combustible liquids, are required to be reviewed and approved by the Purchaser prior to purchase or delivery to the site. Nonflammable or less flammable alternatives shall be substituted for flammable liquids where feasible.

- A copy of each Contractor's chemical inventory and the SDS for each material or chemical on the inventory shall be submitted to the Purchaser providing a centralized location ([3E Online](#)) from which an SDS may be obtained. This requirement, however, in no way substitutes for the Contractor's maintenance of a HAZCOM program or SDS file. [A sample chemical inventory list is available.](#) [A sample product evaluation is available.](#)

## 63.0 OCCUPATIONAL NOISE EXPOSURE

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.52, Occupational noise exposure](#)

#### **64.0 BLOODBORNE PATHOGENS**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.1030, Subpart Z, Bloodborne pathogens](#)

#### **65.0 LEAD**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.1025, Lead](#)  
[29 CFR 1926.62, Lead](#)

In addition, the following Purchaser-specific requirements apply:

Prior to engaging in any potential exposure activities, the Contractor shall develop and produce a written lead exposure control plan and provide details for lead identification, handling, and abatement. This plan shall be made available to the Purchaser for review on request.

#### **66.0 SILICA**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.55, Appendix A, Mineral dusts](#)  
[29 CFR 1926.1153, Respirable crystalline silica](#)

In addition, the following Purchaser-specific requirements apply:

Prior to engaging in any potential exposure activities, the Contractor shall develop and produce a written silica exposure control plan. This plan shall be made available to the Purchaser for review on request.

#### **67.0 ASBESTOS**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.1001, Asbestos](#)  
[29 CFR 1926.1101, Asbestos](#)

In addition, the following Purchaser-specific requirements apply:

Prior to engaging in any potential exposure activities, the Contractor shall develop and produce a written exposure control plan for asbestos. This plan shall be made available to the Purchaser for review on request.

## 68.0 ARSENIC

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.1018, Inorganic arsenic](#)  
[29 CFR 1926.1118, Inorganic arsenic](#)  
[SCG-SH-2105, Inorganic Arsenic](#)

In addition, the following Purchaser-specific requirements apply:

Prior to engaging in any potential exposure activities, the Contractor shall develop and produce a written arsenic exposure control plan. This plan shall be made available to the Purchaser for review on request.

## 69.0 ABRASIVE BLASTING

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.57\(f\), Abrasive blasting](#)  
[29 CFR 1910.94, Ventilation](#)  
[29 CFR 1910.134, Respiratory protection](#)  
Section [65.0, Lead](#)

In addition, the following Purchaser-specific requirements apply:

- Prior to performing abrasive blasting operations, the Contractor shall develop and produce a written plan for abrasive blasting that details work practices and hazard control processes required for abrasive blasting operations. The plan shall be provided to the Purchaser for review.
- Blasting media must be engineered for abrasive blasting. Manufactured sand (play sand) does not meet the requirements and shall not be used.
- Warning signs shall be posted around the perimeter of all abrasive blasting operations to warn personnel of hazards.
- The operational pressure release switch (deadman switch) shall not be tied down or otherwise bypassed by the operator.
- If compressors are too far away from the abrasive blasting operation for operators to monitor the warning devices and safety features, a means must be devised to adequately warn the operators of impending hazards. The means could be a person assigned to monitor the compressors' warning devices and safety features. The means shall be documented in the Contractor's written plan and approved in advance by the Purchaser.

## 70.0 RADIOLOGICAL NONDESTRUCTIVE TESTING

Contractors shall, at a minimum, meet the requirements set forth in:

10 CFR, chapter I, U.S. Nuclear Regulatory Commission

[29 CFR 1910.1200, Hazard communication](#)  
[29 CFR 1910.97, Nonionizing radiation](#)  
49 CFR 172.700, Hazardous materials regulations, training, purpose and scope

In addition, the following Purchaser-specific requirements apply:

Prior to engaging in any potential exposure activities, the Contractor shall develop and produce a written radiological NDE exposure control plan for radiological nondestructive testing. This plan shall be made available to the Purchaser for review on request.

## 71.0 LEGIONELLA

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910.132, Personal Protective Equipment](#)  
[29 CFR 1910.134, Respiratory Protection](#)  
[29 CFR 1910.1200, Hazard Communications](#)

In addition, the following Purchaser-specific requirements apply:

[SCG-SH-0060, Legionella Exposure Control Guideline](#)

## ELECTRICAL SAFETY

### 72.0 TEMPORARY ELECTRICAL POWER

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910 Subpart S, Electrical](#)  
[29 CFR 1926 Subpart K, Electrical](#)

In addition, the following Purchaser-specific requirements apply:

- Contractors shall protect flexible cords and cables from accidental damage; avoid sharp corners and projections. Installations shall not create additional hazards such as tripping or overhead obstructions.
- All subgrade installations of temporary power shall be clearly identified by placement of detectable locators red danger tape marked BURIED ELECTRICAL CABLE (or equivalent) at a distance 12 to 18 in. above the buried cable. Surface signage indicating buried electrical cables shall also be installed at intervals not to exceed 50 ft. The records for temporary power installation should include a surveyed location by the installing Contractor (if possible) of any underground installations.
- All underground temporary electrical installations shall be identified to include survey points (if possible) on a site plot plan to facilitate future identification for excavation work activities during the construction period.

- Contractors shall use only ground-fault circuit interrupter (GFCI) receptacles or receptacles with GFCI breakers. GFCI breakers must be reset by authorized persons identified by the responsible Contractor.
- On completion of the project, the Contractor shall remove any temporary underground cables. If the cables cannot be removed, the Contractor shall provide detailed drawings indicating the location of such cables to the Purchaser. Abandonment in place is only acceptable if there is an incumbrance to removal. Convenience is not considered an acceptable reason to abandon in place.

### 73.0 ELECTRICAL TESTING AND STARTUP

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910 Subpart S, Electrical](#)  
[29 CFR 1926 Subpart K, Electrical](#)  
[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)

In addition, the following Purchaser-specific requirements apply:

- SCG-SH-0201, Lockout/Tagout (LOTO) Procedure, shall be the guiding document to ensure personnel and equipment safety.
- Only authorized personnel may energize or deenergize equipment. Contractors shall maintain a roster of authorized personnel and provide a copy to the Purchaser upon request.
- The Contractor shall develop and produce a written testing and startup plan that includes the following components:
  - The process for appropriate coordination with existing facility personnel and procedures.
  - The name, position, and contact information of the person who is responsible for coordinating mechanical and other testing and startup teams.
  - The name, position, and contact information of the person who is responsible for authorizing electrically hazardous work.
  - The mechanism to be used to determine the status of testing and startup. Marked drawings are an example of this mechanism.
- General precautions include:
  - To the extent possible, testing shall be accomplished with the system deenergized.
  - Personnel shall remove all rings, watches, and other jewelry. Rings that cannot be removed shall be covered with electrical tape for electrical and physical protection.
  - Personnel shall wear clothing and PPE appropriate to the job.
  - Hand tracing of wiring without electrically isolating the starter or other electrical equipment shall be avoided.

- Unknown circuits in wiring have caused fatalities. Extreme caution shall be taken when working on them.
- Persons performing testing and startup work shall not be placed under time constraints and shall be prepared for unexpected events. Extended work hours should be evaluated for safety implications.
- All unauthorized or unnecessary personnel shall exit the affected area before energizing the equipment.
- Deviation from planned activities shall be approved by the team leader and communicated to all appropriate parties before implementing the change.
- All circuits and equipment rated 480 V and above should be insulation-resistance tested before being energized if required in the testing and startup plan.
- Before touching uninsulated conducting parts, personnel shall confirm the absence of voltage by using an approved meter.
- The appropriate lockout/tagout (LOTO) procedure shall be identified and followed.
- Safety grounds shall be constructed and installed.
- A procedure to control temporary jumpers shall be established. Some examples of how to accomplish this control are tagging the jumpers with red ribbon or keeping a written log of jumpers installed.

#### **74.0 GROUND FAULT PROTECTION**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1926.404, Wiring design and protection](#)

In addition, the following Purchaser-specific requirements apply:

- A ground fault circuit interrupter (GFCI) shall be used on all extension cords and portable electric tools. Deviations, including substitution of an assured grounding program in lieu of 100-percent GFCI protection, may be authorized only by the Purchaser with concurrence from the environmental, health, and safety (EH&S) resource.
- Low-voltage (12 V) lighting is recommended in confined spaces because of the possibility of the GFCI tripping and leaving the entrants in the dark.
- Some Class A GFCIs have an automatic reset feature and are not approved for use on Purchaser sites.

#### **75.0 ENERGIZING AND DEENERGIZING ELECTRICAL EQUIPMENT**

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910 Subpart S, Electrical](#)  
[29 CFR 1926 Subpart K, Electrical](#)  
[29 CFR 1926 Subpart V, Electric power transmission and distribution](#)  
[29 CFR 1910.269, Electric power generation, transmission, and distribution](#)  
[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)

In addition, the following Purchaser-specific requirements apply:

- [A sample planning form for energizing electrical equipment is available.](#)
- [A sample planning form for deenergizing electrical equipment is available.](#)
- [A sample electrical hazard form for work performed under lockout/tagout is available.](#)
- [A sample energized electrical work permit is available.](#)

The Contractor site manager shall ensure the following steps are taken prior to energizing or deenergizing electrical circuits:

- For work that involves plant-controlled equipment, SCG-SH-0201, Lockout/Tagout (LOTO) Procedure, shall be the guiding document to ensure personnel and equipment safety.
- Only authorized personnel may energize or deenergize equipment. Contractors shall maintain a roster of authorized personnel and provide a copy to the Purchaser on request.
- Only a Purchaser Designee(s) will energize or deenergize Purchaser-owned equipment. The designee (s) shall analyze the diagrams, drawings, and field conditions to evaluate the possibilities of creating a backfeed to equipment other than the equipment being energized and to determine if temporary feeds have been installed.
- Verify the accuracy of the drawings and the absence of temporary feeds with the facility electrical representative who knows if the equipment has been modified. Any drawings found to be inaccurate shall be marked for updating and submitted to TSS Engineering for correction.
- If the equipment was previously energized, determine the reason it was deenergized, and verify that the equipment is ready to be reenergized.
- Check the operating voltage and energy levels of the equipment or system being energized to classify the work and to determine the types of voltage testers and PPE that are required to energize the system safely. Refer to NFPA 70E for applicable PPE requirements.
- Determine who will perform each of the following activities:
  - Throwing switches.
  - Voltage testing.
  - High-potential or Megger® testing.
  - Phasing.
  - Phase rotation.
- Notify all personnel affected.
- Determine the test method to assure the system is clear.
- Inspect the equipment visually to verify conditions and to ensure appropriate labeling has been installed.

### **75.1 Energizing Equipment or Feeders Over 600 V and 600-V Class Distribution Equipment**

- The Contractor management responsible for the work and appropriate Contractor personnel including electrical craft and Purchaser's electrical representatives shall hold a planning meeting prior to energizing any equipment over 600 V or any 600-V class distribution equipment. The purpose of the meeting is to establish a common understanding of the scope of work and associated hazards.
- Only authorized personnel may energize or deenergize equipment. Contractors shall maintain a roster of authorized personnel and provide a copy to the Purchaser on request.
- Only a Purchaser Designee(s) will energize or deenergize Purchaser-owned equipment.

### **75.2 Energizing Utilization Equipment That Is 600 V or Less but Over 125 V-to-Ground**

- Only authorized personnel may energize or deenergize equipment. Contractors shall maintain a roster of authorized personnel and provide a copy to the Purchaser on request.
- Only a Purchaser Designee(s) will energize or deenergize Purchaser-owned equipment.
- Contractor management responsible for the work and appropriate Contractor personnel including electrical craft and Purchaser electrical representatives shall hold a planning meeting prior to energizing any equipment that is 600 V or less but over 125 V-to-ground. This equipment includes motor control centers (MCC), 600-V class distribution panels, 480-V motors, 480-V disconnects, the line side of power and lighting panels, and any other equipment that has a 480-V primary feed.
- The meeting can cover more than one piece of equipment, such as a package or a turnover system. The purpose of the meeting is to establish a common understanding of the scope of work and associated hazards.

### **75.3 Installing Safety Grounds**

- Installing or removing safety grounds is potentially very dangerous and may be classified as hazardous work, depending on conditions.
- When installing safety grounds, the Contractor shall follow [SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#).
- The Contractor shall not attempt to install or remove safety grounds on Purchaser-owned equipment.
- Personnel who install or remove safety grounds shall be qualified electricians.
- Safety grounds shall be installed on the following equipment and feeders before personnel come into contact with them:
  - Feeders and equipment over 600 V.
  - Switch gear and unit substation buses.
  - 600-V class feeders from substations.
  - All overhead electrical lines on both sides of the point of work.



## 76.0 WELDING AND PORTABLE GENERATORS

Contractors shall, at a minimum, meet the requirements set forth in:

NEC Article 630

In addition, the following Purchaser-specific requirements apply:

- A qualified person shall install and inspect all electrically connected welding machine power sources at each new installation to ensure the integrity of the conductor and its terminations are adequate.
- A qualified person shall on an annual basis inspect welding machines that are fixed installations. This inspection shall address the:
  - Insulation integrity of the supply-side conductors.
  - Adequacy of the supply-side conductor terminations.
  - Proper over-current protection for the welding machine.
  - Adequacy of the equipment grounding conductor.
  - Indications of weather or water damage.
- The Contractor shall ensure the following items are including in their daily inspection process by the qualified welder:
  - Inspect welding leads prior to use to ensure the insulation is not damaged and the conductor is not exposed. Repair or discard damaged leads.
  - Connect welding leads to the welding machine by a male plug. Ensure that the female portion of the connector is the energized part of the set.
  - Two leads shall be connected at the work location if there is the potential for the return path of the welding current to pass through delicate equipment such as turbines, generators, other rotating equipment, instrumentation, or controls. Do not use building steel or pipelines as the return path for the welding current. When welding to building steel or pipelines, connect the return lead to the same steel part where welding will occur.
- Turn off the welding machine while pulling leads to a new location and in some cases until the welder is in position to make a weld. If the welder has to lie on or lean on a grounded surface to perform a welding task, another person should start the machine when the welder is ready to strike an arc and begin the task.
- Do not support welding leads with tie wire. This practice damages the welding lead insulation. Support leads with nonconductive materials or insulated wire. Install welding leads so that they are not potential tripping hazards.
- Eliminate the possibility of partially exposing a connection while pulling the leads. Male and female connectors of welding leads may need to be taped or otherwise restrained from separating. Welding leads should not be tied in a knot.
- When the welding machine is unattended, remove the rod from the holder.
- Do not weld on material or equipment suspended by a metallic support mechanism (choker, chainfall, and load line) unless it is insulated to ensure the return path of welding current does not pass through the rigging. This practice is prohibited because of the possibility of damage to the choker or the load line. If such an

- operation is required, the welder shall verify the support includes an insulating element to eliminate the possibility of welding current flowing through the support.
- If a portable welding machine includes a receptacle for convenience power, the receptacle shall be guarded with a ground fault circuit interrupter (GFCI) if the voltage is alternating current. Many older machines have receptacles equipped with reset buttons that are not GFCIs; in this case, portable GFCIs shall be used. If the voltage is direct current, the receptacle should be disabled and not be used.
  - The 120-V convenience receptacle of a portable generator shall be guarded by a GFCI if used to supply power to electric handtools.

## 77.0 WORKING ON OR NEAR ELECTRICAL SERVICES AND/OR EQUIPMENT

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910 Subpart S, Electrical](#)  
[29 CFR 1926 Subpart K, Electrical](#)  
[29 CFR 1926 Subpart V, Electric power transmission and distribution](#)  
[29 CFR 1910.269, Electric power generation, transmission, and distribution](#)  
[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)

In addition, the following Purchaser-specific requirements apply:

Prior to beginning work on energized electrical service or equipment, the Contractor shall submit a detailed plan to the Purchaser covering the following information:

- The scope of the work.
- The expected hazards.
- The methods to be used to ensure worker safety.

## 78.0 HAZARDOUS ENERGY CONTROL (LOTO)

Contractors shall, at a minimum, meet the requirements set forth in:

[29 CFR 1910 Subpart S, Electrical](#)  
[29 CFR 1926 Subpart K, Electrical](#)  
[29 CFR 1910.147, The control of hazardous energy \(lockout/tagout\)](#)  
[29 CFR 1926 Subpart V, Electric power transmission and distribution](#)  
[29 CFR 1910.269, Electric power generation, transmission, and distribution](#)

In addition, the following Purchaser-specific requirements apply:

SCG-SH-0201, Lockout/Tagout (LOTO) Procedure, shall be the guiding document to ensure personnel and equipment safety.

[SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)

## **ENVIRONMENTAL PROTECTION**

### **79.0 SPILL PREVENTION, CONTROL, AND COUNTERMEASURES (SPCC)**

The following Purchaser-specific requirements apply:

- If specified in the contract, the Contractor will develop and produce a spill prevention, control, and countermeasures (SPCC) plan that aligns with the facility's current SPCC plan, or if the Purchaser directs, the Contractor shall follow the existing facility SPCC plan.
- For small-scale spills, the Contractor shall develop a response plan that is compliant with the facility's existing plan. This plan shall address:
  - Storage of bulk fuels, oil, and chemicals.
  - Identification of potential spills and hazards produced.
  - A spill response team.
  - Selection, storage, and transportation of cleanup materials.
  - Disposal of contaminated materials in accordance with all federal, state, local laws, and the facility SPCC.

### **80.0 STORM-WATER MANAGEMENT**

The following Purchaser-specific requirements apply:

If specified in the contract, the Contractor shall develop and produce a storm-water management plan in consultation with the appropriate operating company's environmental affairs department. This consultation should occur as soon as possible after contract award.

### **81.0 WASTE MANAGEMENT**

The following Purchaser-specific requirements apply:

- Contractors shall not cause or allow to be released any hazardous wastes or toxic substances and/or any other waste, pollution, noxious gases or substances, or any other substances in violation of applicable federal, state, or local laws, rules, and regulations in connection with the construction activities.
- If specified in the contract, the Contractor shall develop and produce a waste management plan in consultation with the appropriate operating company's environmental affairs department. The plan shall address requirements for the proper identification, handling, storage, and disposal/recycling of nonhazardous and hazardous waste generated from construction activities.

### 81.1 Nonhazardous Solid Waste

- State and local agencies have certain control over the management, disposal, and/or recycling of all nonhazardous solid waste and excess materials that are either brought onsite or generated as a result of construction activities. The site-specific waste management plan shall describe how to handle and dispose of this waste stream during construction.
- Contractors are responsible for the management and timely disposal and/or recycling of all nonhazardous waste and excess materials that the Contractor brought onsite or generated as a result of their construction activities, unless otherwise specified in the contract. The Contractor is responsible for managing waste management vendors and ensuring locations of dumpsters are maintained.
- Contractors shall supply and maintain appropriate numbers and sizes of nonhazardous waste containers. Containers shall be kept covered. The locations of bulk solid waste containers (such as rollofs or dumpsters) shall be approved in advance by the Purchaser and shall avoid locations under or near transmission or distribution lines.

### 81.2 Hazardous Waste

- Federal and state regulations cover the generation, handling, storage, and disposal of any hazardous waste generated at a facility.
- Furthermore, if the project is located at an existing facility, any waste generated onsite is counted as being generated for the entire facility and may not be separated.
- No hazardous or potentially harmful waste generated by Contractors shall be allowed to enter the normal waste streams of the Purchaser.
- Specific project contract documents shall specify the party (company or Contractor) that is responsible for hazardous waste management.
- Additionally, the operating company will provide acceptable vendors to handle any waste stream generated requiring disposal.
- If Southern Company Operations is responsible for hazardous waste disposal, the Contractor is responsible for properly packaging the hazardous waste in accordance with applicable laws, rules, and regulations.
- If the Contractor is responsible for hazardous waste disposal, the Contractor shall package and dispose of the waste as directed by the Purchaser.
- Hazardous or potentially harmful waste materials shall not be mixed with nonhazardous waste materials.
- Appropriate hazardous waste storage areas shall be established and maintained as needed.
- Locations of hazardous waste storage areas shall be approved by the Purchaser, and the Contractor shall be responsible for documentation and recordkeeping for those areas designated for their exclusive use.
- Hazardous and potentially harmful wastes shall be placed in proper containers, properly labeled, and stored in the hazardous waste storage area. Filled containers shall be removed from the project and properly disposed of in a timely manner with required documentation and recordkeeping.

### **81.3 Used Oil and Petroleum Products**

- State and local agencies have regulations regarding the management of used oil and other petroleum products, as well as oily waste and debris generated.
- Appropriate storage areas, acceptable collection devices, and timely removal from the site of these materials must be adhered to.
- Additionally, spill prevention, control, and countermeasure (SPCC) requirements must be met.
- Contractors are responsible for ensuring all oil products and oily waste generated are reported, handled, and disposed of properly in accordance with the site-specific waste management plan.

### **82.0 ENVIRONMENTAL ASSESSMENT AND REMEDIATION**

The following Purchaser-specific requirements apply:

- Environmental assessment and remediation tasks shall be coordinated with the appropriate operating company and/or facility representatives.
- For assessment and remediation in energized switchyards and substations, all personnel involved shall receive comprehensive substation safety training prior to beginning operations and shall adhere to all regulatory and these additional requirements:
  - All assessment and remediation work shall be coordinated with the appropriate operating company's transmission maintenance supervision to ensure compliance with operating requirements and request assistance of a transmission maintenance employee while planning and performing any drilling or excavation operations. A review of substation drawings and survey of the site shall be conducted with the operating company's transmission maintenance assistance during the project planning phase to identify any known underground cables, conduit, pipes, or other structures.
- Removal of underground storage tanks (USTs) shall be performed in compliance with the appropriate operating company's EH&S procedures, standards, or guidelines and applicable specifications identified in this manual.

### **83.0 AIR PROGRAMS MANAGEMENT**

The following Purchaser-specific requirements apply:

- Depending on local and state requirements, open burning permits may be required. No open burning of construction clearing materials may take place until all requirements have been satisfied.
- Any airborne material transported beyond the property line of the construction site are considered fugitive emissions, which generally are regulated by state and local agencies. The most common source for fugitive emissions is dust from traffic. Reasonable measures such as wetting roads for dust suppression must be taken to

minimize such emissions. Contractors are responsible for complying with all State and local regulations regarding fugitive emissions.

#### **84.0 HERBICIDE AND PESTICIDE USAGE**

Herbicide and pesticide usage shall follow all federal, state, and local requirements for its usage, disposal, training, use of PPE, and potential licensure for use.

In addition, the following Purchaser-specific requirements apply:

- Prior to bringing any herbicide or pesticide onto a Southern Company site, Contractors are responsible for ensuring the appropriate Purchaser's site management, the Environmental Affairs office of the appropriate operating company, or Plant Compliance are notified and approve its use.
- Adjacent and surrounding areas and personnel shall be protected from potential airborne concentrations, overspray, and/or runoff.
- Containers and excess product shall be properly stored and/or promptly removed from the project upon completion of the application.

#### **85.0 ASH BASIN REMEDIATION**

See EH&S standard [SH-S-6, Ash Basins](#), for specific requirements for ash basin remediation projects.

[A sample job safety analysis \(JSA\) for ash basin work is available.](#)

## **APPENDICES**

### **86.0 TABLES**

Table 1, First Aid Staffing (section [15.0, First Aid Personnel and Facilities](#))

Table 2, Equipment in Transit – Minimum Clearance Distances (section [54.0, Mobile Equipment Transiting Near Energized Electric Lines](#))

Table 3, Minimum Working Distances for Mobile Equipment in Operation Without an Overhead Line Permit (section [55.0, Mobile Equipment Working Near Energized Lines](#))

Table 4, Minimum Working Distances for Mobile Equipment in Operation With an Overhead Line Permit (section [55.1, Permit-Required Criteria](#))

## 87.0 ACRONYMS

<b>ANSI</b>	American National Standards Institute
<b>BBS</b>	behavioral-based safety
<b>CIH</b>	certified industrial hygienist
<b>EH&amp;S</b>	environmental, health, and safety
<b>FRP</b>	fiber-reinforced plastics
<b>GFCI</b>	ground-fault circuit interrupter
<b>JSA</b>	job safety analysis
<b>JSB</b>	job safety briefing
<b>LOTO</b>	lockout/tagout
<b>NCCA</b>	National Commission for Certifying Agencies
<b>OBSS</b>	Operations and Business Shared Services
<b>PFAS</b>	personal fall arrest system
<b>PJB</b>	prejob briefing
<b>PPE</b>	personal protective equipment
<b>PSIF</b>	potential serious injury or fatality
<b>RCA</b>	root cause analysis
<b>ROPS</b>	rollover protection system
<b>SCG</b>	Southern Company Generation
<b>SDS</b>	safety data sheets
<b>SNCR</b>	safety nonconformance report
<b>SPCC</b>	spill prevention control and countermeasure
<b>STEP</b>	Safety Through Everyone's Participation
<b>SWPP</b>	storm-water pollution prevention plan
<b>TSS</b>	Technical Shared Services



## 88.0 REFERENCES

ANSI/ASME B30.9 – Slings  
ANSI/ASME B30.10 – Hooks  
ANSI A10.4, Current Safety Requirements for Workman’s Hoist  
ANSI D6.1-20xx, Manual Uniform Traffic Control Devices  
ASME B30.20 Below-the-Hook Lifting Devices (current revision)  
ASME B30.23 Personnel Lifting Systems  
ASME B30.5  
ISO 11660:2008  
ISO 2867:2011(E)  
Lockout/Tagout Procedure Awareness Training  
Lockout/Tagout Training Video  
Man-on-the-Ground Sample Program  
NEC Article 630  
OSHA 300 and 300A log(s)  
OSHA 1910.147  
OSHA 1910.269  
SAE J185  
SCG-SH-0100, Safe Work Procedures for Confined Spaces  
SCG-SH-0201, Lockout/Tagout (LOTO) Procedure  
SCG-SH-0410, Hot Work  
SCG-SH-0700, Scaffold Safety Procedure  
SCG-SH-2105, Inorganic Arsenic  
SCO-SH-0100, Confined Spaces and Enclosed Spaces (forthcoming)  
SCO-SH-0700, Scaffold Safety (forthcoming)  
SCO-SH-0812, Rigging and Lifting  
SCO-SH-0900, Barricades  
SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal  
SH-S-6, Ash Basins  
Southern Company Safety and Health Orientation Checklist  
Southern Safety Tri-Lateral

## 89.0 ATTACHMENTS

Generation, Operations, and Construction Safety and Health procedures:

- [SH-2A-07, Scaffold Safety](#)
- [SH-2A-33, Safe Work Procedures for Confined Spaces](#)
- [SH-S-6, Ash Basins](#)
- [SCG-SH-0060, Legionella Exposure Control Guideline](#)
- [SCG-SH-0100, Safe Work Procedures for Confined Spaces \(Generation\)](#)
- [SCO-SH-0100, Confined Spaces and Enclosed Spaces \(forthcoming\)](#)
- [SCG-SH-0201, Lockout/Tagout \(LOTO\) Procedure](#)
- [SCO-SH-0211, Switchyard Access](#)
- [SCG-SH-0410, Hot Work](#)
- [SCG-SH-0610, Commercial Diving Operations Checklist](#)
- [SCG-SH-0700, Scaffold Safety Procedure \(Generation\)](#)
- [SCO-SH-0700, Scaffold Safety \(forthcoming\)](#)
- [SCO-SH-0812, Rigging and Lifting](#)
- [SCO-SH-0900, Barricades](#)
- [SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal](#)
- [SCG-SH-2105, Inorganic Arsenic](#)

Forms:

- [Aerial Lifts and Bucket Trucks Daily Inspection Form](#)
- [Authorization for the Use of a Suspended Personnel Hoisting Platform](#)
- [Chain Fall and Come-a-Long Inspection Form](#)
- [Chemical Inventory List](#)
- [Confined Space Reclassification Tags \(examples\)](#)
- [Contractor EH&S Specifications Deviation Request Form](#)
- [Contractor Incident Notification and Investigation Report](#)
- [Crane-Suspended Personnel Platform, Evaluation of Alternate Lifting Methods](#)
- [Critical Lift – Rigging and Lifting Plan](#)
- [Demolition Daily Checklist](#)
- [Drilling Equipment Inspection Form](#)
- [Earth-Moving Equipment Inspection](#)
- [Electrical Hazard Form for Work Performed Under a Lockout/Tagout \(LOTO\)](#)
- [Energized Electrical Work Permit](#)
- [Engineered Scaffold Inspection Form](#)
- [Equipment Operator Authorization](#)
- [First Aid Supply List](#)
- [Forklift Inspection Form](#)
- [Geotechnical and Environmental Drilling Overhead and Underground Conflict Resolution Permit](#)
- [Hot Work Permit](#)
- [Intermediate Lift – Prelift Worksheet/Rigger's Reference Sheet](#)
- [JSA: Job Safety Analysis \(English\)](#)
- [JSA/AST: Job Safety Analysis/Análisis de Seguridad del Trabajo \(Spanish\)](#)
- [JSA: Job Safety Analysis – Ash Basin Work](#)
- [Ladder Inspection Form](#)

- [Line Breaking Permit](#)
- [Man-on-the-Ground Sample Program](#)
- [Open Hole Permit \(Maximo item number 1319324\)](#)
- [Overhead Line Permit](#)
- [Planning Outline for Deenergized Electrical Equipment](#)
- [Planning Outline for Energized Electrical Equipment](#)
- [PPE Assessment Form](#)
- [Predemolition Engineering Survey](#)
- [Safety Data Sheets \(SDS\)/Product Evaluation Form](#)
- [Safety Nonconformance Report \(SNCR\)](#)
- [Scaffold Integrity Checklist](#)
- [Scaffold Tags \(examples\)](#)
- [Southern Company Safety and Health Orientation Checklist](#)
- [Suspended Personnel Platform Preuse Checklist](#)
- [Suspended Scaffold Inspection Checklist](#)
- [Switchyard Permit](#)
- [Trenching and Excavation Permit](#)
- [Trenching/Excavation Daily Inspection Form](#)
- [Vehicle Inspection Form](#)
- [Verification of Load-Bearing Capability of Base Support for Supported Scaffold](#)

## 90.0 SUMMARY OF CHANGES

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Approved 12/07/2020  
Effective 05/17/2021  
Council

Approved by Paula Marino  
Reviewed by T&PS Safety Leadership Team, T&PS Management Council

Remarks:  
Issued for use.

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Updated 05/20/2021

Approved by Alan Kilgore

Remarks:  
Added links to new Operations procedure SCO-SH-0812, Rigging and Lifting (28.0, Rigging and Lifting; 53.0, Cranes, Derricks, and Powered Hoists; Appendix 3.0, Attachments). Added reference and link to JSA: Job Safety Analysis – Ash Basin Work (Appendix 3.0).

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Updated 07/27/2021

Approved by Paula Marino  
Reviewed by T&PS Safety Leadership Team, T&PS Management Council

Remarks:  
Updated 4.0, Subcontractor and Vendor Management (was 4.0, Subcontractor Management); and 53.0, Cranes, Derricks, and Powered Hoists. Deleted sentence on personal fall arrest system (PFAS)(24.0, Ladders and Stairways).

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Updated 06/30/2022

Approved by Alan Kilgore

Remarks:  
References to hazardous energy control procedures updated.

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Updated 05/24/2023

Approved by Jim Heilbron

Remarks:  
Organization names updated.

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# Southern Company Operations

## Technical and Project Solutions Environmental, Health, and Safety Procedures

### SH-2A-07

### Scaffold Safety

	<b>Rev. 6**</b>
<b>Date</b>	03/05/2019
<b>Revised By</b>	Bill Batts, manager-Construction Safety and Health
<b>Reviewed By Process Coordination Team</b>	
<b>Approved By</b>	
Project Services	Bill Boyd
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## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS AND REFERENCES .....	3
2.1	Definitions.....	3
2.2	References .....	3
3.0	RESPONSIBILITY .....	4
3.1	Construction Site Manager .....	4
3.2	Startup Manager.....	4
3.3	Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors).....	4
3.4	Contractors.....	4
3.5	Scaffold Requester .....	4
3.6	Professional Engineer.....	5
3.7	Scaffold Competent Person .....	5
3.8	Scaffold Erection Crews .....	6
3.9	Southern Company Designated Representative .....	6
4.0	PROCEDURE .....	6
4.1	General Requirements/Best Practices .....	6
4.2	Engineered Scaffolding Requirements.....	8
4.3	Scaffold Erection and Dismantling .....	9
4.4	Mounting and Dismounting Scaffolds.....	9
4.5	Scaffold Tagging.....	10
4.6	Inspection and Testing - Scaffold Planks .....	11
4.7	Training .....	11
4.8	Storage of Scaffold Materials.....	11
5.0	KEY CONTACT .....	12
6.0	QUALITY RECORDS .....	12
7.0	ATTACHMENTS .....	12

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure provides the requirements, in addition to OSHA regulations, for training on, erecting, using, inspecting, and dismantling scaffolds on Technical and Project Solutions (T&PS) projects.

### 1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

[competent person](#) 

[contractor](#) 

**engineered scaffold system** – A scaffold designed by a registered professional engineer (PE).

**founding system** – Scaffold base built up from the ash pit or cutout bottom to the vertical wall of the boiler. Named for the founding beams that span the gap above the ash pit, it provides support for the scaffold. This system includes all the hardware used to build the base of a boiler scaffold.

[Project Information Management System \(PIMS\)](#) 

**scaffold** – Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting workers or materials or both.

**tagging system** – A process for tagging scaffolds to indicate completion and inspection. See 4.5, Scaffold Tagging.

### 2.2 References

- 29 CFR 1926.450, Scope, Application and Definitions Applicable to Subpart L, Scaffolds.
- 29 CFR 1926.451, General Requirements.
- 29 CFR 1926.452, Additional Requirements Applicable to Specific Types of Scaffolds.
- 29 CFR 1910.28, Safety Requirements for Scaffolding.

- SCG-SH-0700, Southern Company Generation Scaffold Safety Procedure.
- SH-1K, Procedure and Standard Deviation Approval Process.
- SH-2A-08, Fall Protection.
- EH&S standard SH-S-2A-32, Falling Objects.
- Forms:
  - 2A-07.1-.3, Scaffold Inspection Tags.
  - 2A-07.4, Scaffold Inspection Checklist.
  - 2A-07.5, Engineered Scaffold System Inspection Form.
  - 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit.

### **3.0 RESPONSIBILITY**

#### **3.1 Construction Site Manager**

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

#### **3.2 Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

#### **3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor's site-specific safety plans.

#### **3.4 Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor's site-specific safety plans.

#### **3.5 Scaffold Requester**

The scaffold requester is responsible for the following:

- Evaluating options for providing temporary access to the work area.



- Working with the scaffold erection crew to identify potential hazards created for scaffold users and other persons in the area.
- Initiating form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit, when the scaffold will obstruct access or egress for project and plant personnel to critical equipment, emergency equipment, walkways, ladders, or stairs. See Scaffold Overhead and Access Restrictions (OAR) Permit and attachment B, Scaffold Overhead and Access Restrictions Permit Flowchart.
- Providing a copy of the completed OAR permit to the scaffold competent person and maintaining the completed copy of the permit in PIMS. See 6.0, Quality Records.

### 3.6 Professional Engineer

A registered professional engineer (PE), who holds an active PE license in the state in which the work is being performed, is responsible for designing any scaffold system that exceeds 125 ft in height, or any uncommon or high-risk scaffold.

For an engineered scaffold system, the PE is responsible for approving:

- The intermingling of scaffold components manufactured by different manufacturers.
- Any modifications to structural components of engineered scaffold system.

### 3.7 Scaffold Competent Person

The scaffold competent person, designated in writing and employed by the contractor, is responsible for supervising all scaffolds and scaffolding systems constructed and used on T&PS project sites, including the construction, modification, use, and dismantling of scaffolds and scaffolding systems. Southern Company requires the scaffold competent person to have accredited training<sup>1</sup> and experience in the use, inspection, erection, and dismantling of scaffolds. Specific responsibilities include:

- Performing scaffold inspections after erection or modification and at the beginning of each shift prior to use.
- Immediately correcting defects noted during inspection. If defects cannot be corrected immediately, the scaffold competent person shall attach a red tag to the scaffold.
- Determining the appropriate tag to be applied to scaffold, completing all tag information, and affixing the tag to the scaffold at all access locations.

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<sup>1</sup> An example of an accredited training program is the Scaffold Industry Association (SIA) or Scaffold Training Institute. Other training programs are available.

- Ensuring hazards and control methods identified are addressed when an OAR permit has been issued.
- Inspecting a scaffold after any repairs are made and retagging it appropriately.
- Inspecting scaffold planks upon receipt and prior to use.

### **3.8 Scaffold Erection Crews**

Scaffold erection crews are responsible for ensuring the integrity of the scaffold and must follow the requirements listed in this procedure. Specific responsibilities include:

- Using tool tethers during assembly and disassembly of scaffolding.
- Using an acceptable fall-protection method at all times when working more than 4 ft above ground.
- Inspecting all scaffold components for defects as erection proceeds, and setting aside and retagging any components found to be defective.

### **3.9 Southern Company Designated Representative**

Southern Company is responsible for providing a designated representative when a contractor is erecting engineered scaffolding. See 4.2, Engineered Scaffolding Requirements.

## **4.0 PROCEDURE**

Contractors working on T&PS projects shall adhere to all OSHA regulations regarding the safe training on, use, erection, and dismantling of scaffolds, and the handling and storage of scaffold components.

### **4.1 General Requirements/Best Practices**

Southern Company requires the following general requirements to be followed on all T&PS projects. These requirements go above and beyond the OSHA regulations set forth in 29 CFR 1926:

- Southern Company employees accessing scaffolding shall have participated in Southern Company Scaffold User training (SHIPS code 017343).
- All working platforms shall be capable of sustaining a minimum working load of 75 psf. If lighter scaffolding or platforms are needed, the contractor shall follow procedure SH-1K, Procedure Deviation Approval Process, to request a deviation.
- If lighter scaffolding or platforms are approved, all working platforms shall be designed and constructed to the following criteria, as needed:

- Light duty – working loads of 25 psf.
- Medium duty – working loads of 50 psf.
- Heavy duty – working loads of 75 psf.
- All ladders and scaffolds shall be capable of supporting at least four times the design working load.
- Regardless of scaffold height, the handrail, midrail, netting, and toeboards shall meet the requirements of procedure SH-2A-08, Fall Protection.
- Personal fall arrest, in the form of a self-retracting lifeline (SRL), shall be provided to and employed by scaffold users while accessing scaffolds from vertical ladders where a fall exposure exceeds 15 ft to a lower elevation.
- A stationary scaffold shall be secured to the building or a fixed structure as outlined in attachment A, Requirements for Specific Scaffold Types, paragraph A.1.1, All Supported Scaffolds, item 3. This rule shall also apply to mobile scaffolds at their working stations. Outriggers may be used in lieu of tying off, or scaffolds may be clamped together so the height does not exceed three times the smallest base dimension without additional stabilization.
- Screens shall be installed on scaffolds or elevated work platforms over walkways or work areas that expose personnel below to dropped objects (see standard SH-S-2A-32, Falling Objects). At a minimum, the screens shall extend from the toeboards to the midrail.
- Tool tethers shall be used during assembly and disassembly of all scaffolds.
- Welding leads, extension cords, hoses, and so forth shall not be suspended from scaffold components.
- When scaffolding is yellow tagged because it could not be completed, such as a missing or incomplete handrail, or when openings larger than 12 in. in the working platform exist, all scaffold users shall tie off to an acceptable anchorage point using best compatible means available.
- When working from a suspended scaffold or platform, workers shall be secured to an independent lifeline.
- Prior to beginning the shift's activities, the scaffold competent person shall inspect the scaffolds to be used.
- Where possible, gates shall be installed on scaffolding for safe access and egress.
- When scaffolds obstruct access or egress for project and plant personnel to critical equipment, emergency equipment, walkways, ladders, or stairs, the scaffold requestor shall obtain form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit, from the site manager or his or her designee. The scaffold requestor shall take appropriate measures to mitigate the hazards of the obstruction or provide alternate access.
- When accessible levels of the scaffold cannot be built without obstructions to an overhead height of 80 in. or width of 18 in., the obstructions shall be identified by signage at the access point(s) and appropriate safeguards such as flagging, barricading, and/or padding put in place to prevent injury to personnel.

## 4.2 Engineered Scaffolding Requirements

- Supply Chain Management's approval is required for any contractor bidding or erecting an engineered scaffold system.
- Any scaffolding system that meets the following criteria shall be designed by a PE:
  - Any scaffold system in excess of 125 ft in height.
  - Any scaffold built on a sloped founding system (base) installed to the vertical wall of a boiler, regardless of height.
  - Any uncommon or high-risk scaffold such as a suspended scaffold or a scaffold built on a sloped founding system in the cutout bottom of a boiler.
- No changes may be made to any structural members of an engineered scaffold system without prior approval in writing from the PE of record who designed, approved, and signed the scaffold design drawing. Changes shall be inspected by the engineer of record or his or her designee.
- Intermingling of scaffold components from different manufacturers is discouraged, but if necessary, shall be approved by the engineer of record.
- The scaffold competent person shall request engineered scaffold systems in advance. The civil discipline lead or designee shall review the design drawings to determine that the design meets the requirements of the planned work.
- A minimum of 2 weeks prior to the installation of an engineered scaffold system, the contractor shall provide the Southern Company-designated representative a PE-stamped engineering design drawing released for construction and the qualifications for the erection contractor's scaffold qualified and scaffold competent persons.
- The scaffold competent person shall provide the contractor with a copy of the engineered scaffold inspection form (see form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist). The engineer of record and the scaffold competent person in consultation shall determine the scaffold inspection points.
- The contractor and the PE of record shall inspect and attest that the installation of the scaffold meets the requirements of the engineering drawing by signing and dating form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist.
- The contractor representative shall sign the engineered scaffold inspection form and present the inspection form to the Southern Company-designated representative before any Southern Company employee uses the scaffold. (See form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist.)
- After the scaffold competent person has received the signed inspection documents from the contractor, the scaffold will be evaluated by scaffold competent persons representing Southern Company Generation, the contractor, and the company contracted to erect the scaffold. Any deficiencies shall be identified and corrected by the contractor before any Southern Company Generation employee uses the scaffold. The appropriate scaffold inspection tag shall then be signed, dated, and placed at all points of scaffold access.

- The Southern Company-designated representative shall maintain copies of the engineered scaffold inspection forms. See 6.0, Quality Records.

### **4.3 Scaffold Erection and Dismantling**

Scaffold erection and dismantling crews shall adhere to the following requirements:

- Pockets, pouches, and tool belts shall be used to carry the necessary tools for the work. (See standard SH-S-2A-32, Falling Objects.)
- Scaffold components shall be hoisted or lowered with a handline or passed from hand to hand. Throwing or dropping items to coworkers is not permitted.
- The contractor's scaffold competent person shall thoroughly evaluate each scaffold erection and/or dismantling and determine the use of fall prevention measures. Provisions shall be established for using a safety harness and acceptable anchorage points, including self-retracting lifelines and working on firm scaffold decks.
- Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mudsills or an adequate firm foundation.
- Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
- When scaffolding will be secured to a fixed structure or outriggers are to be used, braces shall be installed as soon as possible. When dismantling a scaffold, braces shall be left on as long as practical.
- Scaffold erection and dismantling crews shall preplan the erection and/or dismantling of scaffolds with consideration to surrounding operations and other activities.

### **4.4 Mounting and Dismounting Scaffolds**

All persons mounting and dismounting a scaffold shall adhere to the following requirements:

- Do not carry objects in hands. Keep both hands free for climbing handholds.
- Step only on secured ladder or access rungs.
- Give full attention to stability while getting on and off the working platform. Do not use the toeboard as a handhold or foothold.
- Pay attention to each step and handhold; most falls occur near the top or the bottom of the ladder.

## 4.5 Scaffold Tagging

**WARNING**

**Yellow tags identify hazards (such as an incomplete handrail or incomplete decking) associated with the structural components of the scaffold system. When these hazards are present, 100-percent fall protection is required for scaffold users.**

**Hazards not associated with components of the scaffold system, such as low overhead or limited climbing clearance, shall be controlled by SH-2A-05, Signs and Barricades.**

Tags on scaffolds shall be applied appropriately and easily identifiable. The scaffold competent person shall tag each scaffold with one of following three colors:

<b>TAG COLOR</b>	<b>INDICATES...</b>
Green	The scaffold is complete, as defined by the manufacturer and/or 29 CFR 1926, subpart L, and safe to use. A green tagged scaffold has a complete deck, proper access, and handrails installed.
Yellow	The scaffold can be used with caution but could not be completed because of the scope of work to be performed. This designation usually indicates an incomplete deck, handrail, or ladder. A fall arrest system is required by scaffold users when these hazards are present. Yellow tags may not be used as a substitute for scaffolds that are or can be completed and green tagged.
Red	The scaffold is unsafe for use because it is in the process of being erected, changed, dismantled, or has been damaged. A red tag shall be placed on the scaffold until deficiencies are corrected and the scaffold is inspected by the scaffold foreman or scaffold competent person and retagged.

### 4.5.1 Applying and Removing Scaffold Tags

**WARNING**

**A scaffold that has been erected but not tagged shall be considered to be red tagged. Contact the scaffold foreman or scaffold competent person to inspect and tag the scaffold before work begins.**

- Only a scaffold competent person may inspect and determine appropriate tagging. The scaffold competent person shall be responsible for completing all required information on the tag and affixing it to the scaffold at all access points.

- The scaffold tag shall be affixed to each scaffold access point, where it will not interfere with normal access and is readily visible.
- Any scaffold user may remove a green or yellow scaffold tag if the scaffold does not meet the safety requirements (for example, if the scaffold has been damaged, improperly modified, is missing components, or is deficient in any safety aspect). A scaffold competent person shall place a red tag on the scaffold until the deficiencies are corrected.
- After the scaffold crew repairs a damaged scaffold, a scaffold competent person shall inspect it and retag it accordingly.
- At the beginning of each shift, a scaffold competent person shall inspect all scaffolds to be used, and sign and date the scaffold tags.

#### 4.6 Inspection and Testing - Scaffold Planks

- All scaffold planks shall be scaffold grade or equivalent as recognized by approved grading rules.
- Scaffold planks shall be inspected by a designated scaffold competent person upon receipt and prior to use as a platform. The scaffold competent person shall examine planks for knots, excessive grain slope, shakes, decay, dry rot, burns, cracks, and other defects. The scaffold crew shall immediately remove from service planks with noted defects.
- Scaffold planks are to be used for designated purposes only.

#### 4.7 Training

Training for scaffold users, inspectors, scaffold erection crews, and scaffold dismantler crews shall comply with the current version of OSHA's scaffold standards, 29 CFR 1926.454, subpart L, Scaffolds – Training requirements.

#### 4.8 Storage of Scaffold Materials

**WARNING**  
**Scaffold materials shall not be left in work areas where they obstruct traffic and/or cause fire hazards.**

Scaffold materials shall be temporarily stored in a manner that will protect and prevent damage to them. When possible, scaffold materials, particularly wood scaffold planks, shall be stored under a protective roof.

## **5.0 KEY CONTACT**

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.

## **6.0 QUALITY RECORDS**

The completed Engineered Scaffold System Inspection Form and Checklist (form 2A-07.5) is a quality record and shall be maintained in accordance with the Southern Company records retention schedule.

The completed Scaffold Overhead and Access Restrictions (OAR) Permit (form 2A-07.6) is a quality record and shall be maintained in PIMS.

## **7.0 ATTACHMENTS**

Attachment A – Requirements for Specific Scaffold Types

Attachment B – Scaffold Overhead and Access Restrictions Permit Flowchart

Attachment C – Historical Summary of Changes



## Attachment A – Requirements for Specific Scaffold Types

### A.1 COMMONLY USED SCAFFOLDS

#### A.1.1 All Supported Scaffolds

1. The poles, legs, posts, frames, or uprights of supported scaffolds shall bear the maximum intended load on base plates and mud sills or other adequate stable and firm foundations capable of supporting without settling or displacement. The supports shall be plumb and braced to prevent swaying and displacement. Screw jacks may be used to level and plumb scaffolding, but may not be used to increase the height.
2. Supported scaffolds with a height-to-base width ratio of more than 4:1 shall be restrained from tipping by guying, tying, bracing, or equivalent means. Restraints shall be installed according to manufacturers' recommendations or at the closest horizontal member to the 4:1 height.
3. For scaffolds 3 ft wide or less, restraints shall be repeated vertically every 20 ft and for scaffolds greater than 3 ft wide, every 26 ft. Restraints shall be installed at locations where horizontal members support both inner and outer legs. They shall be installed at each end of the scaffold and repeated at horizontal intervals of 30 ft or less measured from one end toward the other.
4. Supported scaffolds with an eccentric load, such as a cantilevered work platform, shall be restrained from tipping by guying, tying, bracing, or outriggers, regardless of the height-to-base-width ratio.

#### A.1.2 Tube and Coupler Scaffolds

1. Posts shall be erected on required bases and maintained plumb.
2. Diagonal cross bracing shall be provided in accordance with 29 CFR 1926.452(b)(2).
3. Runners shall be erected along the length of the scaffold located on both the inside and outside posts at level heights. (When tube and coupler guardrails and midrails are used on outside posts, they may be used in lieu of outside runners.)
4. Bearers and braces shall extend beyond the posts and runners and shall provide full contact with the coupler.
5. Tube and coupler scaffold taller than 125 ft shall be designed by a registered professional engineer, and shall be constructed and loaded according to the design.

#### A.1.3 Floats

1. The platform shall be supported by a minimum of two bearers, each of which shall project a minimum of 6 in. beyond the platform on both sides. Each bearer shall be securely fastened to the platform.
2. Rope connections shall be such that the platform cannot shift or slip.

3. When only two ropes are used with each float, they shall be arranged so as to provide four ends that are securely fastened to overhead supports.
4. Each supporting rope shall be hitched around one end of the bearer and pass under the platform to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.
5. Before getting on a float, workers shall tie off to an independent lifeline and shall not untie until after getting off a float.

## **A.2 INFREQUENTLY USED SCAFFOLDS (REQUIRES SPECIAL CIRCUMSTANCES)**

### **A.2.1 Fabricated Frame Scaffolds**

1. Frames shall be placed one on top of the other with coupling or stacking pins to provide proper alignment of legs and shall be locked together vertically by pins or other equivalent suitable means to ensure against displacement.
2. Frames shall be braced by cross, horizontal, or diagonal braces, or combination thereof, that secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, square, and rigid. All brace connections shall be secured.
3. When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced.
4. Cantilevered sections may be used only to support personnel. Brackets used to support cantilevered sections shall be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames and shall not be bent or twisted from these positions.

### **A.2.2 Suspended Scaffolds**

1. The use of multilevel suspended scaffolds is prohibited on T&PS projects.
2. Two-point suspended scaffolds shall have standard toeboards, midrails, and handrails.
3. Platforms shall not be more than 36 in. (0.9 m) wide unless designed by a qualified person to prevent unstable conditions.
4. The platform shall be securely fastened to hangers (stirrups) by U-bolts or by other means that satisfy the requirements of 29 CFR 1926.451A.
5. The platforms shall be of ladder-type, plank-type, beam-type, or light-metal-type. Light-metal-type platforms having a rated capacity of 750 lb or less and platforms 40 ft or less in length shall be tested and listed by a nationally recognized laboratory.
6. The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.

7. Two-point scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations unless the bridge connections are articulated (attached), and the hoists properly sized.
8. Passage may be made from one platform to another only when the platforms are the same height, are abutting, and walk-through stirrups specifically designed for this purpose are used.
9. All suspension scaffold support devices such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).
10. When outrigger beams are used to support suspended scaffolds, they shall be:
  - Made of structural steel I-beams (or channel iron that is securely fastened together with the flanges turned out).
  - Installed with the web in a vertical position and all bearing supports perpendicular to the beam center line.
  - Restrained from movement and stabilized by bolts or other direct connections to the floor or roof deck at the inboard end.
  - Placed perpendicular to the bearing supports when possible or placed as close to perpendicular as possible when obstructions are present and stabilized with opposing angle tiebacks that are secured to structurally sound anchorage points.
  - Provided with stop bolts or shackles at both ends.
  - Designed and installed so the shackle or clevis with which the rope is attached is directly over the center line of the stirrup.

**WARNING**

**Counterbalanced outrigger beams cannot be used.**

11. When cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices are used to support suspended scaffolds, they shall be:
  - Made of steel, wrought iron, or materials of equivalent strength.
  - Supported by bearing blocks.
  - Secured against movement with tiebacks (that are equivalent in strength to the hoisting rope) installed at right angles to the face of the structure and secured to a structurally sound point of anchorage.

12. Suspension scaffold hoists shall be either electric or pneumatic and shall be approved by a qualified testing laboratory. Gasoline-powered hoists shall not be used.
13. Gears and brakes on all hoists shall be enclosed. In addition to the normal operating brake, all hoists shall be equipped with a braking device or locking pawl that engages automatically when the hoist makes either of the following uncontrolled movements:
  - An instantaneous change in momentum.
  - An accelerated overspeed.
14. When winding drum hoists are used on suspended scaffolds, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension rope shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with means to prevent the end from passing through the hoist.
15. Wire suspension ropes, including connecting hardware, shall be capable of supporting, without failure, at least six times the maximum intended load with the scaffold operating at either the rated load of the hoist or two times the stall load of the hoist, whichever is greater.
16. The load-end of wire suspension ropes shall be equipped with proper size thimbles and secured by eye splicing. There shall be a minimum of three wire rope clips installed according to the manufacturer's recommendations with spacing of six rope diameters apart. Clips shall be:
  - Retightened to the manufacturer's recommendations after the initial loading.
  - Inspected and retightened as needed at the start of each shift thereafter.
17. Wire suspension ropes shall be inspected by the scaffold competent person prior to each shift and after every occurrence that could affect the rope's integrity. Ropes shall be replaced if any of the following conditions exist:
  - Any physical damage that impairs the function and strength of the rope.
  - Kinks that might impair the tracking or wrapping of rope around the drum or sheave.
  - Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.
  - Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
  - Heat damage caused by a torch or any damage caused by electrical contact.
  - Evidence the secondary brake has been activated during an overspeed condition and has engaged the rope.

18. Suspension scaffolds shall be secured to prevent them from swaying as determined by the scaffold competent person.
19. Suspension ropes shall be adequately shielded from heat-producing processes and corrosive substances when needed.
20. When electric welding is performed from suspended scaffolds, the following precautions shall be taken to prevent current from arcing through the suspension wire rope:
  - An insulated thimble shall be used to attach each suspension rope to its support (such as cornice hook or outrigger beam).
  - The suspension wire rope shall be insulated for a distance of 4 ft above the hoist and any tail line below the hoist shall be insulated to prevent contact with the platform.
  - Each hoist shall be covered with insulated protective covers.
  - A separate grounding conductor, at least the size of the welding lead, shall be connected from the scaffold to the structure at all times while the welding machine is operating; this grounding conductor is in addition to the grounding conductor required by the welding process.
21. In addition to the standard guardrail system, all workers on suspended scaffolds shall be protected from falling by a personal fall arrest system consisting of a full body harness, shock-absorbing lanyard with locking hook, and an appropriately sized rope grab attached to a vertical lifeline. Each worker shall be attached to separate vertical lifelines that are securely and independently attached to substantial members of the structure, not the scaffold.

### **A.2.3 Needle-Beam Scaffolds**

1. Needle beams shall be installed on the edge of the scaffold.
2. Ropes and hangers shall be used for supports, except that one end of the needle beam may be supported by a permanent structural member.
3. Ropes shall be securely attached to the needle beams.
4. The support connections shall be arranged so as to prevent the needle beam from rolling or becoming displaced.
5. Platform units shall be securely attached to the needle beams by bolts or equivalent means. Cleats and overhang are not considered to be adequate means of attachment.

### **A.2.4 Boatswains' Chairs**

1. Boatswains' chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly "eyed spliced" minimum 5/8-in.-diameter first-

- grade manila rope, or other rope that will satisfy the criteria (for example, strength and durability) of manila rope.
2. Boatswains' chair seats slings shall be reeved through four corner holes in the seat, shall cross each other on the underside of the seat, and shall be rigged so as to prevent slippage that could cause an out-of-level condition.
  3. Boatswains' chair seats shall be a minimum of 5/8-in.-diameter fiber, synthetic, or other rope that will satisfy the criteria (for example, strength, slip resistance, durability) of first-grade manila rope.
  4. When a heat-producing process such as gas or arc welding is being conducted, boatswains' chair seat slings shall be a minimum of 3/8-in. wire rope.
  5. Noncross-laminated wood boatswains' chairs shall be reinforced by securely fastened cleats on their underside to prevent the board from splitting.
  6. The worker shall be tied off to an independent lifeline with a safety harness.

### **A.2.5 Electric Hoist Platforms**

1. When working platforms are suspended from electric hoist mechanisms and used to raise and lower workers, each worker shall wear a safety harness and shall be attached to an independently secured lifeline.
2. Such platforms shall have guardrails 42 in. in height above the platform.
3. Prior to each use, the hoist mechanism and support attachment shall be visually inspected and the load support checked at 1 ft off the ground.
4. The cable and the lay of the cable on the spool shall be checked constantly.
5. All wire rope associated with the support of an electric hoist platform shall be protected from abrasive sharp object contact by the use of softeners.

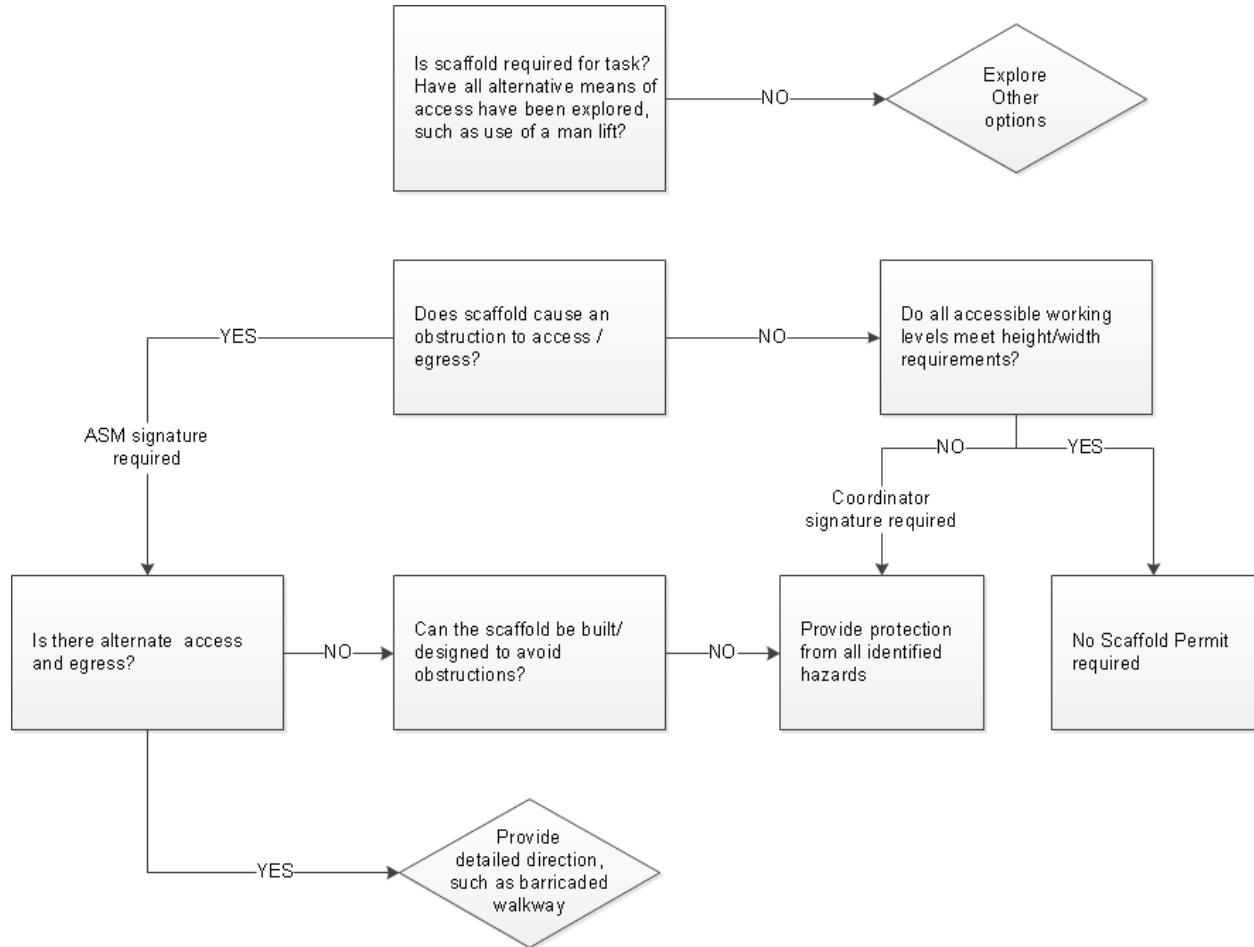
### **A.2.6 Mobile Scaffolds**

1. Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.
2. Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is being used in a stationary manner.
3. Manual force to move the scaffold shall be applied as close to the base as practicable, but not more than 5 ft above the supporting surface.
4. Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles, or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.
5. Scaffolds shall be stabilized to prevent tipping during movement.

6. Employees shall not ride on scaffolds during movement.
7. The height of freestanding mobile scaffolds shall not exceed four times the minimum base dimension.
8. Ladders used to access mobile scaffolds shall be affixed and located in such a manner to eliminate any tendency for the scaffold to tip.
9. Where leveling of the scaffold is necessary, screw jacks or equivalent means shall be used.

### Attachment B – Scaffold Overhead and Access Restrictions Permit Flowchart

Use this flowchart with form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit.





## Attachment C - Historical Summary of Changes

Rev. 0  
12/10/2002

Approved by Don Gaddy  
Reviewed by Construction Safety Leadership Team  
Revised by Bruce Walker

Remarks:  
Issued

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Rev. 1  
3/11/2009

Approved by Will Taylor  
Reviewed by Construction Safety Leadership Team  
Revised by Bruce Walker

Remarks:  
General revision.

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Rev. 2  
5/1/2011

Approved by PCT chair  
Reviewed by Project Safety Leadership Team  
Revised by Bob Fitzgerald

Remarks:  
Added information for training and inspecting scaffolding; pulled definitions from the body of the procedure into Definitions; added references to appropriate Generation and E&CS procedures; removed direct quotations from the OSHA regulations (to eliminate redundancy and outdated information); identified a quality record generated from following this procedure; moved requirements for specific scaffold types from the body of the procedure to attachment A. Added attachment B, Engineered Scaffold Inspection Forms, and attachment C, Historical Summary of Changes.

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Rev.3  
08/30/2012

Approved by PCT chair  
Reviewed by Project Safety Leadership Team  
Revised by Bob Fitzgerald

Remarks:  
General revision of grammar and punctuation.

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Rev. 4  
09/22/2015

Approved by Bob Fitzgerald, Chad Kendrick, and Bill Boyd  
Reviewed by Project Safety Leadership Team and Procedure Consolidation Team  
Revised by Bob Fitzgerald

Remarks:  
General revision for grammar, clarity, and punctuation. Changed phrase "elevated work platforms" to word "scaffolds" (1.1). Edited scope statement (1.2). Linked terms "competent person," "contractor," and "PIMS" to E&CS glossary (2.1). Added references and links for two forms (form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist (formerly attachment B), and new form 2A-07.6, Scaffold Overhead and Access Restrictions Permit)(2.2). Added responsibilities for scaffold requester (3.3). Moved general statement on scaffold competent person's responsibility from 3.2, Contractors, to 3.5, Scaffold Competent Person. Moved examples of high-risk scaffolds from 3.4, Professional Engineer, to 4.2, Engineered Scaffolding Requirements. Added bullet points reflecting OAR-permit responsibilities for scaffold competent person (3.5). Added two bullets concerning new OAR permit (4.1). Edited wording of warning statements (4.5 and 4.5.1). Moved training requirements to new section 4.7, Training. Replaced Engineered Scaffold System Inspection Form and Checklist (now separate form 2A-07.5) with Scaffold Overhead and Access Restrictions Permit Flowchart (attachment B). Updated attachment C, Historical Summary of Changes.

Rev. 5  
05/09/2017

Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team and Process Coordination Team  
Revised by Bill Batts

Remarks:

Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

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Rev. 6  
03/05/2019

Approved by Robin Hurst and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts

Remarks:

Changed references to fall exposure trigger height from 6 ft to 4 ft to reflect changes to requirements of SH-2A-08, Fall Protection (3.8 and attachment A, A.2.2).

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05/15/2019  
Organization name updated.

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# Southern Company Operations

## Technical and Project Solutions

### Environment, Health, and Safety Procedures

#### SH-2A-33

## Safe Work Procedures for Confined Spaces

	<b>Rev. 1**</b>
<b>Date</b>	05/09/2017
<b>Revised By</b>	Bill Batts, manager-Construction Safety and Health
<b>Reviewed By Process Coordination Team</b>	
<b>Approved By</b>	
Project Services	Bill Boyd
Project Support	Bruce Long

## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS AND REFERENCES .....	3
2.1	Definitions .....	3
2.2	References .....	8
3.0	RESPONSIBILITIES .....	9
3.1	Construction Site Manager .....	9
3.2	Startup Manager .....	9
3.3	T&PS Site Safety Lead .....	9
3.4	T&PS Construction Discipline Lead or Coordinator or Startup Discipline Lead or Coordinator .....	9
3.5	Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .....	9
3.6	Contractors .....	10
3.7	Confined Space Log Administrator .....	10
3.8	Host Employer .....	10
3.9	Authorized Entrants .....	10
3.10	Attendants .....	11
3.11	Confined Space Competent Persons .....	12
3.12	Entry Supervisors .....	12
3.13	Contractor Who Designates Rescue and Emergency Services .....	13
3.14	Rescue and Emergency Services Provider .....	13
4.0	PROCEDURE .....	15
4.1	Site Confined Space Inventory List and Activity Log .....	15
4.2	Confined Space Signs, Barriers, and Barricades .....	15
4.3	Site-Specific Instructions .....	16
4.4	Worker Training .....	16
4.5	Coordinating Contractor Confined Space Entry .....	16
4.6	Annual Review .....	17
4.7	Entry Permit/Reclassification Form .....	17
4.8	Atmospheric Testing .....	18
4.9	Reclassification of Permit-Required Confined Spaces .....	19
4.10	Permit-Required Confined Spaces Entered Using Alternate Procedure .....	20
4.11	Reclassification Tag Removal .....	21
4.12	Confined Space Entry Process .....	21
5.0	KEY CONTACTS .....	26
6.0	QUALITY RECORDS .....	26
7.0	ATTACHMENTS .....	26

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure provides the minimum requirements to enter and work in confined spaces on Technical and Project Solutions (T&PS) projects.

### 1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**Alternate Procedure** – The work practice used when the only serious hazard in a confined space is atmospheric, and it can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space for safe entry.

**atmospheric test readings** – Atmospheric checks of a permit-required confined space for (in the following order):

1. Oxygen content.
2. Flammable gases and vapors.
3. Potential toxic air contaminants.

**attendant** – A trained individual stationed outside one or more permit-required confined spaces who monitors the authorized entrants and who performs all the attendant's duties assigned in 3.9, Attendants.

**authorized entrant** – A worker who is authorized by the entry supervisor to enter a permit-required confined space.

**blanking or blinding** – The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

**bump test (also called function check)** – A qualitative function check where a challenge gas is passed over the gas monitoring instrument sensor(s) at a concentration and exposure time sufficient to activate all alarm indicators to present at least their lower alarm setting. The purpose of this check is to confirm that gas can get to the sensor(s) and that all the alarms present are functioning. A bump test of portable gas monitors shall be conducted before each day's use in accordance with the manufacturer's instructions. Any portable gas monitor

that fails a bump test shall be adjusted by means of a full calibration procedure before further use, or it shall be removed from service.

**calibration check** – A quantitative test using a known traceable concentration of a test gas to demonstrate that the gas monitoring instrument sensor(s) and alarms respond to the gas within manufacturer’s acceptable limits. A full calibration adjusts the sensor’s response to match the desired value compared to a known traceable concentration of test gas. This calibration check shall be done in accordance with the manufacturer’s instructions. A full calibration shall be conducted at regular intervals in accordance with instructions specified by the instrument’s manufacturer. Any portable gas monitor that fails a calibration check shall be adjusted by means of a full calibration procedure before further use, or it shall be removed from service.

**competent person** 

**confined space** – A space that meets all of the following criteria:

- Is large enough for an individual to enter and perform assigned work.
- Has limited or restricted means for entry or exit.
- Is not designed for continuous occupancy.

**confined space log administrator** – An individual appointed by the T&PS site safety lead to maintain form 2A-33.2, Site Confined Space Inventory List and Activity Log.

**control** – The action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using methods to maintain the reduced hazard level. Control also refers to the engineering methods used for the purpose. Personal protective equipment is not a control.

**controlling contractor** – The employer who has overall responsibility for construction at the worksite.

**double block and bleed** – The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

**T&PS site contract coordinator** – The person designated as the liaison between T&PS and the contractor.

**early warning system** – The method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early warning systems include, but are not limited to, alarms activated by remote sensors and lockouts with equipment for immediately communicating with all the authorized entrants and attendants.

- emergency** – Any occurrence (including any failure of power or hazard control monitoring equipment) or event internal or external to the permit-required confined space that could endanger entrants.
- engulfment** – The surrounding of an individual by a liquid or particulate that can fill or plug the respiratory system, or cause death by strangulation, constriction, or crushing.
- entry** – The action by which an individual passes through an opening into a permit-required confined space. Entry includes activities in that space and occurs as soon as any part of the authorized entrant's body breaks the plane of an opening into the space.
- entry employer** – Any employer who decides that a worker he or she directs will enter a permit-required confined space.
- entry permit** – The written or printed document that is provided by the employer who designated the space as a permit-required confined space to allow and control entry into a permit-required confined space and that contains the information specified in 29 CFR 1926.1206, Entry permit.
- entry rescue** – Occurs when a rescue service enters a permit-required confined space to rescue one or more workers.
- entry supervisor** – The qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit-required confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this procedure.
- hazardous atmosphere** – An atmosphere that may expose an individual to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:
- Oxygen concentration below 19.5 percent or above 23.5 percent.
  - Carbon monoxide (CO) concentration above 35 ppm.
  - Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL) or lower explosive limit (LEL).
  - Any airborne contaminant in a concentration sufficient to expose a worker to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness.
  - An immediately dangerous to life and health (IDLH) atmospheric condition.
- host employer** – The employer that owns or manages the property where the construction work is taking place.
- immediately dangerous to life and health (IDLH)** – Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse

health effects or that would interfere with an individual's ability to escape unaided from a permit-required confined space.

**isolate or isolation** – The process by which workers in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for worker contact with a physical hazard.

**limited or restricted means for entry or exit** – A condition that has a potential to impede a worker's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces, and ladders.

**lockout** – The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

**lower flammable limit or lower explosive limit** – The minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

**monitor or monitoring** – The process used to identify and evaluate the hazards after an authorized entrant enters the space. This process involves checking for changes in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

**nonentry rescue** – Occurs when a rescue service, usually the attendant, retrieves workers in a permit-required confined space without entering the permit-required confined space.

**nonpermit-required confined space** – A confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm.

**oxygen deficient atmosphere** – An atmosphere containing less than 19.5 percent oxygen by volume.

**oxygen enriched atmosphere** – An atmosphere containing more than 23.5 percent oxygen by volume.

**permit system** – The written procedure for preparing and issuing permits for entry and for returning the permit-required confined space to service following termination of entry.

**permit-required confined space (PRCS)** – A confined space that has one or more of the following hazardous characteristics:



- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration where an entrant may become entrapped or asphyxiated by inwardly converging walls or by a floor sloping downward and tapering to a smaller cross-section.
- Contains any other recognized serious safety or health hazard; that is, a safety hazard that exposes entrants to the risk of death, incapacitation, impairment of the ability to self-rescue, or serious injury.

#### NOTE

All confined spaces shall be considered permit-required confined spaces until the hazards are assessed and controlled or eliminated.

**physical hazard** – An existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to, explosives (as defined by paragraph (n) of 29 CFR 1926.914, definition of “explosive”); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

**prohibited condition** – Any condition in a permit-required confined space that is not allowed by the permit during the period when entry is authorized.

**qualified person** – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project.

**reclassification tag** – A tag posted at all points of entry to a confined space indicating the confined space has been reclassified to a nonpermit-required confined space or an Alternate Procedure confined space.

**representative permit-required confined space** – A mockup of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit-required confined space that authorized entrants enter.

**rescue** – Retrieving and providing medical assistance to one or more workers who are in a permit-required confined space.

**rescue service** – The personnel designated to rescue workers from a permit-required confined space.

**retrieval system** – The equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for nonentry rescue of persons from permit-required confined spaces.

**tagout** – (1) Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and (2) the employer ensures that (i) tagout provides equivalent protection to lockout, or (ii) lockout is infeasible and the employer has relieved, disconnected, restrained, and otherwise rendered safe stored (residual) energy.

**test** or **testing** – The process by which the hazards that may confront authorized entrants of a permit-required confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit-required confined space.

#### NOTE

Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

**time** – All times used on forms, logs, and so forth related to this procedure shall be recorded as local time in a 24-hour format.

**ventilate** or **ventilation** – The process of controlling a hazardous atmosphere using continuous forced-air mechanical systems.

## 2.2 References

- Form 2A-33.1, T&PS Project Safety and Health Confined Space Entry Permit/Reclassification Form.
- Form 2A-33.2, Site Confined Space Inventory List and Activity Log.
- Form 2A-33.3, Confined Space Reclassification Tag.
- Form 2A-33.4, Atmospheric Monitoring Data.
- 29 CFR 1910.146, Permit-required confined spaces.
- 29 CFR 1910.269, Electric power generation, transmission, and distribution.
- 29 CFR 1910.252, subpart Q, Welding, cutting, and brazing.
- 29 CFR 1926 Subpart AA, Confined spaces in construction.
- SCG-SH-0201, Lockout/Tagout (LOTO) Procedure.
- Southern Company Generation Emergency Response Team Executive Committee. Technical Rescue Training Standard Operating Guidelines.
- ANSI Z 117.1-2009.

### **3.0 RESPONSIBILITIES**

#### **3.1 Construction Site Manager**

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

#### **3.2 Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

#### **3.3 T&PS Site Safety Lead**

The T&PS site safety lead is responsible for the following:

- Reviewing and approving a contractor's site-specific confined space program.
- Providing training for T&PS project-assigned personnel on this procedure.
- Ensuring the confined space log administrator maintains form 2A-33.2, Site Confined Space Inventory List and Activity Log.

#### **3.4 T&PS Construction Discipline Lead or Coordinator or Startup Discipline Lead or Coordinator**

The T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator is responsible for the following:

- Ensuring contractor activity under his or her direction is in compliance with this procedure.
- Communicating daily confined space activities of all contractors on the project to the confined space log administrator.
- Communicating newly established confined spaces through normal construction activities to the confined space log administrator.

#### **3.5 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor's site-specific safety plans.

### **3.6 Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor's site-specific safety plans.

### **3.7 Confined Space Log Administrator**

The confined space log administrator is responsible for maintaining form 2A-33.2, Site Confined Space Inventory List and Activity Log, and making it available to all site employers. See 4.1, Site Confined Space Inventory List and Activity Log.

### **3.8 Host Employer**

The host employer is responsible for providing a list of existing, known confined spaces and their respective hazards to the confined space log administrator.

### **3.9 Authorized Entrants**

Authorized entrants into a confined space are responsible for the following:

- Knowing the hazards that could be faced during entry, including the mode, signs or symptoms, and consequences related to exposure.
- Properly using equipment as required by 29 CFR 1926.1204 (d)(1) through (9):
  - Testing and monitoring equipment as described in 4.8, Atmospheric Testing.
  - Ventilating equipment used to obtain acceptable entry conditions.
  - Communications equipment for attendants and authorized entrants.
  - Personal protective equipment, insofar as feasible engineering and work practice controls do not adequately protect workers.
  - Lighting equipment used to enable workers to see well enough to work safely and to exit the space quickly in an emergency.
  - Barriers and shields used to isolate the space and protect authorized entrants from external hazards.
  - Equipment, such as ladders, used for safe ingress and egress by authorized entrants.
  - Rescue and emergency equipment used to affect self-rescue and/or summon emergency services.
  - Any other equipment necessary for safe entry into and rescue from permit-required confined spaces.
- Communicating with the attendant as necessary to enable the attendant to monitor entrant status and to alert authorized entrants of the need to evacuate the space.
- Alerting the attendant when either of the following occurs:
  - The authorized entrant recognizes any warning signs or symptoms of exposure to a dangerous situation.
  - The authorized entrant detects a prohibited condition.

- Exiting from the permit-required confined space as quickly as possible when one of the following events occurs:
  - An order to evacuate is given by the attendant or the entry supervisor.
  - The authorized entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
  - The authorized entrant detects a prohibited condition.
  - An evacuation alarm is activated.

### 3.10 Attendants

Attendants are responsible for the following:

- Knowing the hazards authorized entrants could face during entry, including the mode, signs or symptoms, and consequences of the exposure.
- Being aware of possible behavioral effects of hazard exposure on authorized entrants.
- Continuously maintaining an accurate count of authorized entrants in the permit-required confined space.
- Ensuring the means used to identify authorized entrants accurately identifies who is in the permit-required confined space.
- Remaining at the entry point, outside the permit-required confined space, during entry operations until relieved by another attendant.
- Monitoring the early warning system and communicating with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the confined space.
- Monitoring activities inside and outside the permit-required confined space to determine if it is safe for authorized entrants to remain in the space, and ordering the authorized entrants to evacuate the permit-required confined space immediately under any of the following conditions:
  - The attendant is alerted to a hazard by the early warning system.
  - The attendant detects a prohibited condition.
  - The attendant detects the behavioral effects of hazard exposure in an authorized entrant.
  - The attendant detects a situation outside the space that could endanger the authorized entrants.
  - The attendant cannot effectively and safely perform the required duties of an attendant.
- Summoning rescue and emergency services as soon as the attendant determines authorized entrants need assistance to escape from the permit-required confined space.
- Taking the following actions when unauthorized persons approach or enter a permit-required confined space while entry is underway:
  - Warning the unauthorized persons that they must stay away from the permit-

- required confined space.
- Advising the unauthorized persons that they must exit immediately if they have entered the permit-required confined space.
- Informing the authorized entrants and the entry supervisor if unauthorized persons have entered the permit-required confined space.
- Evacuating the confined space if an unauthorized entrant exposes an authorized entrant to a recognized hazard.
- Performing nonentry rescues as specified by the rescue preplan.
- Not performing any duties that could interfere with the attendant's primary duty to monitor and protect the authorized entrants.

### 3.11 Confined Space Competent Persons

Confined space competent persons are responsible for evaluating confined spaces on a project.

### 3.12 Entry Supervisors

Only confined space competent persons shall be designated as entry supervisors. Entry supervisors are responsible for the following:

- Knowing the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Authorizing initial entry into only those spaces that satisfy the following requirements:

	<b>The entry supervisor shall...</b>
Reclassified space	At all doors opened for entry: <ul style="list-style-type: none"> <li>• Personally confirm the appropriate signage is posted.</li> <li>• Visually confirm the reclassification tags are posted.</li> </ul>
Permit-required confined space	At the primary point of entry: <ul style="list-style-type: none"> <li>• Personally confirm the appropriate signage and form 2A-33.1, T&amp;PS Project Safety and Health Confined Space Entry Permit/Reclassification Form, is posted.</li> <li>• Confirm an attendant is in place.</li> </ul>

- Completing form 2A-33.1 or equivalent approved permit including verifying appropriate information has been documented on the form, all tests specified by the form have been conducted, and the rescue preplans, procedures, and equipment specified by the form are in place before signing the form and allowing the entry to begin.

- Terminating the entry and cancelling form 2A-33.1 as required.
- Verifying rescue and emergency services are available, the means for summoning them are operable, and the contractor shall be notified as soon as the services become unavailable.
- Removing unauthorized individuals who enter or attempt to enter the permit-required confined space during entry operations.
- Determining that entry operations remain consistent with terms of form 2A.33-1.
- Determining that acceptable entry conditions are maintained when responsibility for a permit-required confined space entry operation is transferred from one attendant to another.
- At intervals dictated by the hazards and operations performed within the space, determining that acceptable entry conditions are maintained.

### **3.13 Contractor Who Designates Rescue and Emergency Services**

The contractor who designates rescue and emergency services is responsible for the following:

- Evaluating a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified.
- Evaluating a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit-required confined space or types of permit-required confined spaces identified.
- Selecting a rescue team or service from those evaluated that:
  - Has the capability to reach the victim(s) within a timeframe that is appropriate for the permit-required confined space hazard(s) identified.
  - Is equipped for and proficient in performing the needed rescue services.
- Informing each rescue team or service of the hazards they may confront when called on to perform rescue at the site.
- Providing the rescue team or service selected with access to all permit-required confined spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.
- Verifying that rescue services are available, the means for summoning them are operable, and the contractor who designates rescue and emergency services will be notified as soon as the services become unavailable.

### **3.14 Rescue and Emergency Services Provider**

The rescue and emergency services provider (that is, the contractor whose workers have been designated to provide permit-required confined space rescue and emergency services) is responsible for the following:

- Providing rescue workers with the personal protective equipment (PPE) needed to conduct permit-required confined space rescues safely and train affected workers so they are proficient in the use of the PPE.
- Training rescue workers to perform assigned rescue duties. The rescue and emergency service provider shall ensure that such workers successfully complete the training required to establish proficiency as an authorized entrant.
- Training rescue workers in basic first aid and cardiopulmonary resuscitation (CPR). The rescue and emergency service provider shall ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available.
- Ensuring rescue workers practice making permit-required confined space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit-required confined spaces or from representative permit-required confined spaces.

#### NOTE

Representative permit-required confined spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit-required confined spaces from which rescues are to be performed, including nonentry rescue.

- Ensuring retrieval systems or methods are used for nonentry rescue when an authorized entrant enters a permit-required confined space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:
  - Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point that the employer can establish. The chest or full body harness shall present a profile small enough for the successful removal of the entrant. Wristlets may be used in lieu of the chest or full body harness if the employer can demonstrate that the use of a chest or full body harness is not feasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
  - The other end of the retrieval line shall be attached to a manually operated mechanical device or fixed point outside the permit-required confined space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A manually operated mechanical device shall be available to retrieve workers from vertical-type permit-required confined spaces more than 5 ft deep.
- If an injured entrant is exposed to a substance for which a safety data sheet (SDS) or other similar written information is required to be kept at the worksite, ensuring the SDS or written information shall be made available to the medical facility treating the exposed entrant.



## **4.0 PROCEDURE**

### **4.1 Site Confined Space Inventory List and Activity Log**

#### **4.1.1 Inventory List**

The confined space log administrator shall maintain a list of all confined spaces and make the list available to all site employers. See form 2A-33.2, Site Confined Space Inventory List and Activity Log.

- The confined space log administrator shall obtain a list of existing, known confined spaces and their respective hazards from the host employer (plant operating company).
- The T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator shall ensure all contractors under his or her direction report all newly identified confined spaces to the confined space log administrator.
- Each confined space on the list shall be uniquely numbered in sequential order.
- Multiple entry points to a confined space shall be identified alphanumerically with the number designating the permit-required confined space and the letter designating the entry point.

#### **4.1.2 Activity Log**

The confined space log administrator shall maintain a log of confined spaces derived from the site confined space inventory list and shall make the log available to all site employers. The log entries shall be dated and shall include:

- Status of the confined space (closed, permit-required, reclassified confined space, alternate entry).
- Permit number, if the permit is issued by Southern Company.
- Confined space owner (host employer).
- Controlling employer.
- Entry employer.
- Notes and/or special precautions.
- Authorized entrant activities.

### **4.2 Confined Space Signs, Barriers, and Barricades**

All confined spaces shall have warning signs posted at all points of entry. The sign shall include the numeric space identification and alphabetic entry point. All entry points not under active entry or entry points to permitted spaces not otherwise attended shall have physical barricades or barriers in place to prevent unauthorized entry.



#### 4.3 Site-Specific Instructions

A project may implement site-specific instructions that supplement but do not replace this procedure. Site-specific instructions shall be reviewed and evaluated by the T&PS construction site manager, the T&PS site safety lead, and the regional safety and health manager. Site-specific instructions may include an operating company's site-specific Alternate Procedure.

#### 4.4 Worker Training

All workers whose jobs involve responsibilities associated with confined spaces shall be initially trained so they shall have the understanding, knowledge, and skills necessary for working safely in confined spaces.

Worker retraining is required when a worker fails to demonstrate knowledge or skills necessary to properly enter a confined space.

Annual confined space awareness training is required for all workers whose work activity or work direction may include confined space entry. Annual training shall include:

- Purpose of the confined space program.
- Emergency notification process.
- Duties of authorized entrants.
- Duties of attendants.
- Duties of entry supervisors.
- Rescue and emergency service.
- Permit/reclassification review.
- Atmospheric hazards and testing requirements.

#### 4.5 Coordinating Contractor Confined Space Entry

When T&PS arranges for a contractor to perform work that involves permit-required

confined space entry, the T&PS site contract coordinator shall:

- Ensure a contractor coordinates all confined space entries with the T&PS employee responsible for the work.
- Ensure T&PS employees coordinate with the facility system owner for all contractor entries, if applicable.
- Inform the contractor that the workplace contains confined spaces and entry will be allowed only through compliance with the contractor's confined space program that meets the requirements of 29 CFR 1926 subpart AA, Confined spaces in construction.
- Apprise the contractor of the current confined space conditions, including any serious hazards identified and any previous experience in the space that has made it a permit-required confined space.
- Apprise the contractor of any precautions or programs, such as signage, that the facility has implemented for the protection of workers in or near the confined space where contract workers will be working.
- When both T&PS personnel and contractor workers will be working in or near a confined space, coordinate entry operations with the contractor so that workers of one company do not endanger the workers of the other.
- Debrief the contractor at the conclusion of the entry operations regarding the permit-required confined space program followed and regarding any serious hazards confronted or created in the space.

#### **4.6 Annual Review**

The T&PS construction site manager shall ensure a review of the site-specific confined space program is conducted annually.

#### **4.7 Entry Permit/Reclassification Form**

The entry supervisor shall complete form 2A-33.1, T&PS Confined Space Entry Permit/Reclassification Form, prior to the entry of any authorized entrants into a confined space. See 6.0, Quality Records, for record retention requirements.

The confined space log administrator shall track all approved or cancelled entry permit/reclassification forms on form 2A-33.2, Site Confined Space Inventory List and Activity Log.

The completed form 2A-33.1 shall be available to all authorized entrants:

- For permit-required confined spaces, the completed form 2A-33.1 shall be posted at the primary point of entry.
- For reclassified spaces, a green reclassification tag (form 2A-33.3, Confined Space Reclassification Tag) shall be posted at each point of entry to the confined space. The green reclassification tags shall include the following information:
  - Permit/reclassification number.

- Entry supervisor name.
- Contact number.
- Issued date.
- Closing date.
- Controlling contractor.
- Atmospheric test levels.

See 6.0, Quality Records, for retention requirements for cancelled reclassification tags.

- For spaces entered using the Alternate Procedure, a yellow reclassification tag shall be posted at each point of entry. See 4.10, Permit-Required Confined Spaces Entered Using Alternate Procedure.

#### **4.8 Atmospheric Testing**

Personnel assigned to perform atmospheric testing shall be trained on the specific device used.

All monitors shall be calibrated in accordance with the manufacturer's recommendations, and a bump test (functional test) shall be performed during each shift at a minimum or after an abnormal reading has been detected.

##### **4.8.1 Initial Atmospheric Testing Requirements**

Southern Company requires testing of a confined space to ensure no hazardous atmosphere exists before allowing workers to enter the space.

When a confined space is to be entered, the atmosphere shall be tested before allowing workers to enter the space. The test equipment must consist of direct reading gas monitoring instruments. The individual performing the test shall enter all required information on form 2A-33.1.

- The confined space shall be opened and ventilated or purged, as necessary.
- The atmospheric test shall be performed by a qualified individual.
- Any portable forced ventilation of the confined space shall be stopped prior to performing an initial atmospheric test.
- When conducting the initial test, the qualified individual shall check for (in the order listed):
  1. Oxygen content.
  2. Flammable gases and vapors.
  3. Potential toxic air contaminants.
- The qualified individual shall complete initial tests prior to any worker entering the space through any opening into the space (such as boiler door and observation doors). The workers who are performing the test shall not enter the space to perform the atmospheric test.

- Any worker authorized to enter a space, or that worker's authorized representative, shall be provided the opportunity to observe any atmospheric testing done for the space he or she is about to enter.
- After the atmospheric test is complete, the qualified individual shall complete all information on form 2A-33.1.

If the confined space is classified as a nonpermit required space, the entry supervisor shall complete the Reclassification section of form 2A-33.1. He or she shall ensure that green reclassification tags are posted at all points opened and used for worker access covered by the atmospheric test, or shall post an attendant. Only tagged or attended points of entry may be used. Atmospheric testing shall be documented daily on the green reclassification tag until the confined space is closed or conditions change. See 4.11, Reclassification Tag Removal, for removal of green reclassification tag.

#### **4.8.2 Additional Atmospheric Testing Requirements**

If authorized entrants are present in any reclassified confined space and atmospheric hazards that could reasonably be expected to cause the space to become a permit-required confined space are introduced, the entrants shall vacate the space, the green reclassification tag shall be removed from all entry points, and the space shall be repermited. Continuous monitoring is required. See 4.11 for removal of green reclassification tags.

#### **4.9 Reclassification of Permit-Required Confined Spaces**

A permit-required confined space can be reclassified to a nonpermit-required confined space provided that:

- All related equipment and systems have been properly isolated and cleared.
- Testing and inspection results indicating that all serious atmospheric and physical hazards in the permit-required confined space have been eliminated are documented on form 2A-33.1.
- Workers who are required to enter the permit-required confined space to eliminate the serious atmospheric and physical hazards comply with all requirements of permit-required confined space entry until the serious atmospheric and physical hazards are eliminated.
- A reclassification tag is posted at all points opened and used for worker access covered by the atmospheric test or an attendant is present.
- A green reclassification tag is posted at each point of entry to the confined space. See 4.7, Entry Permit/Reclassification Form, for information needed on a green reclassification tag.
- Atmospheric testing requirements have been met. See 4.8.1, Initial Atmospheric Testing Requirements.

A green reclassification tag shall be completed and posted at the nonpermit-required space. The green tag indicates all potential serious atmospheric and physical hazards in the space have been eliminated and the space is safe for authorized worker entry.

If hazardous changes to a reclassified space occur that endanger the entrants, the confined space shall be immediately evacuated and the confined space reevaluated.

#### **4.10 Permit-Required Confined Spaces Entered Using Alternate Procedure**

T&PS contractors and/or T&PS personnel are not allowed to use the Alternate Procedure for confined space entry performed in spaces under the control of T&PS or its contractors (T&PS or its contractor acting as the host employer or controlling employer).

If T&PS employees or T&PS contractors must make entry into a confined space under the control of an operating company, as host or controlling employer, the operating company's Alternate Procedure may be used with the review and approval of the T&PS construction site manager and T&PS site safety lead.

A confined space entered using the Alternate Procedure shall meet the following criteria:

- The only serious hazard or potential serious hazard in the space is atmospheric.
- It can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space for safe entry.
- The mechanical ventilation used is from a clean air source and is in place prior to entry.
- The atmosphere of the space is monitored continuously. Results shall be recorded on form 2A-33.4, Atmospheric Monitoring Data.
- Form 2A-33.1 is completed and indicates the space is being entered using the Alternate Procedure.
- Yellow reclassification tags have been placed by the operating company at all entry points.

If a hazardous atmosphere is detected during entry:

- Each entrant shall leave the space immediately.
- The space shall be evaluated by the confined space host to determine how the hazardous atmosphere developed.
- Action shall be implemented to protect workers from the hazardous atmosphere before any subsequent entry takes place.

As applicable, each reclassification tag shall have the corresponding number from form 2A-33.1 that identifies the confined space, the entry supervisor, and the date reclassified.

#### 4.11 Reclassification Tag Removal

Reclassification tags shall be removed when the work has been completed or when conditions in the space have become unsafe.

When work is completed or when the space has become unsafe for entry, the entry supervisor shall be contacted and shall be responsible for seeing that all of the reclassification tags are removed from entrances. A confined space entrance cannot be closed until the entry supervisor has been notified and he or she verifies that the reclassification tags have been removed. This process shall be accomplished as follows:

- The entry supervisor shall ensure the removal of the reclassification tags, account for all of the tags, and ensure each reclassification tag number corresponds with the number on form 2A-33.1. The entry supervisor shall sign at the bottom of form 2A-33.1 indicating the permit has been cancelled and write the date on the green reclassification tags in the appropriate space. This action shall also be documented on form 2A-33.2, Site Confined Space Inventory List and Activity Log.
- The cancelled form 2A-33.1 and the green reclassification tags with corresponding numbers shall be attached to each other and retained. See 6.0, Quality Records, for record retention requirements.
- If the entry supervisor is not available, the facility manager or his or her designee can perform this operation.

#### 4.12 Confined Space Entry Process

##### 4.12.1 General

See attachment A, Confined Space Entry Flowchart. When work must be performed in a space that potentially meets the definition of a confined space, the entry employer shall initiate the following steps:

1. The entry employer's confined space competent person shall determine if the space meets the definition of a confined space.
  - a. If the space does not meet the definition of a confined space, work may proceed with normal work procedures.
  - b. If the space meets the definition of a confined space, the entry employer's confined space competent person shall check form 2A-33.2, Site Confined Space Inventory List and Activity Log, to determine if the space is an existing plant-owned confined space.
2. If the space meets the definition of a confined space and is not listed on form 2A-33.2, the T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator shall contact the confined space log administrator to register the space as a confined space.

3. If the space is listed on form 2A-33.2, the T&PS construction site manager shall designate a T&PS confined space competent person, who shall serve as the entry supervisor when the space is entered, to evaluate the confined space.
4. The T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator shall determine if operating company personnel or its contractors will enter the confined space.
  - a. If neither operating company personnel nor its contractors will enter the confined space, work shall proceed following SH-2A-33, Safe Work Practices for Confined Spaces.
  - b. If operating company personnel or its contractors will enter the confined space, the T&PS confined space competent person shall obtain the status of hazards and other contractors' activities in and near the space. The T&PS confined space competent person shall then provide plant operations with the activities and hazards of T&PS contractor entrant activities.
5. The T&PS confined space competent person shall determine if the operating company has established an Alternate Procedure and is entering the space using the Alternate Procedure.
  - a. If the operating company's Alternate Procedure will be used, the T&PS site manager and the T&PS site safety lead shall evaluate the Alternate Procedure to determine if it meets the criteria of 4.10, Permit-Required Confined Spaces Entered Using Alternate Procedure.
  - b. If the operating company's Alternate Procedure does not meet the criteria of 4.10, the T&PS site manager and the T&PS site safety lead shall deny T&PS employees and T&PS contractors access to the space.
6. If the operating company's Alternate Procedure meets the criteria of 4.10, the entry supervisor shall ensure continuous monitoring of the space while following SH-2A-33.
7. The T&PS confined space competent person shall then determine who will enter the confined space:
  - a. Only T&PS personnel.
  - b. Both T&PS personnel and contractor workers.
  - c. Only contractor workers.

#### **4.12.2 T&PS Personnel Only as Entrants**

1. If only T&PS personnel will enter the space, the T&PS confined space competent person shall evaluate the confined space for known or potential hazards.
2. If the space has no known or potential hazards, the T&PS confined space competent person shall:
  - a. Assume the role of entry supervisor.
  - b. Complete the reclassification section of form 2A-33.1.
  - c. Report needed information to the confined space log administrator.



- d. Complete the information on green reclassification tags (form 2A-33.3) and hang them at all entry points.
  - e. Sign form 2A-33.1, approving entry of the confined space. Authorized entrants may enter the space and perform the assigned work.
3. If the space has known or potential hazards, the T&PS confined space competent person shall determine if the serious hazards can be eliminated. If the serious hazards can be eliminated, the T&PS confined space competent person shall:
    - a. Assume the role of entry supervisor.
    - b. Complete the reclassification section of form 2A-33.1.
    - c. Report needed information to the confined space log administrator.
    - d. Complete the information on green reclassification tags (form 2A-33.3) and hang them at all entry points.
    - e. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.
  4. If all serious hazards cannot be eliminated, the T&PS confined space competent person shall:
    - a. Assume the role of entry supervisor.
    - b. Complete form 2A-33.1.
    - c. Report needed information to the confined space log administrator.
    - d. Ensure acceptable entry conditions are maintained, proper air monitoring is performed, the attendant is in place, and rescue services are available.
    - e. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.

#### **4.12.3 Both T&PS Personnel and Contractor Workers as Entrants**

1. If both T&PS personnel and contractor workers will enter the confined space, the T&PS confined space competent person shall coordinate with the contractor's confined space competent person to evaluate the confined space for known or potential hazards.
2. If the space has no known or potential hazards, the T&PS confined space competent person shall:

EITHER...	OR...
Coordinate entry of T&PS personnel under the contractor's approved entry program.	Assume the role of entry supervisor for T&PS personnel who are authorized entrants, and: <ul style="list-style-type: none"> <li>i. Complete the reclassification section of form 2A-33.1.</li> <li>ii. Report needed information to the confined space log administrator.</li> <li>iii. Complete the information on green reclassification tags (form 2A-33.3) and hang them at all entry points.</li> <li>iv. Sign form 2A-33.1, approving entry of the confined space. Authorized entrants may enter the space and perform the assigned work.</li> </ul>

3. If the space has known or potential hazards, the T&PS confined space competent person shall coordinate with the contractor's confined space competent person to determine if the serious hazards can be eliminated. If both parties agree the serious hazards can be eliminated, the T&PS confined space competent person shall:

EITHER...	OR...
Coordinate entry of T&PS personnel under the contractor's approved entry program: <ul style="list-style-type: none"> <li>i. Ensure the contractor's confined space program has been reviewed and approved by the T&amp;PS site safety lead.</li> <li>ii. Ensure all T&amp;PS entrants are trained in the contractor's confined space entry program.</li> <li>iii. Ensure the contractor is aware of all hazards in the space.</li> <li>iv. Ensure the contractor has access to form 2A-33.2.</li> <li>v. Ensure the contractor identifies and properly tags all entry points with an acceptable reclassification tag.</li> <li>vi. Ensure the contractor reports all needed information to the confined space log administrator.</li> <li>vii. Ensure acceptable entry conditions are maintained, and necessary air monitoring is performed.</li> </ul>	Assume the role of entry supervisor for T&PS personnel who are authorized entrants: <ul style="list-style-type: none"> <li>i. Complete the reclassification section of form 2A-33.1.</li> <li>ii. Report needed information to the confined space log administrator.</li> <li>iii. Ensure acceptable entry conditions are maintained, proper air monitoring is performed, and rescue services are available.</li> <li>iv. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.</li> </ul>

4. If the T&PS confined space competent person and the contractor's confined space competent person agree all serious hazards cannot be eliminated, the T&PS confined space competent person shall:

EITHER...	OR...
<p>Coordinate entry of T&amp;PS personnel under the contractor's approved entry program:</p> <ul style="list-style-type: none"> <li>i. Ensure the contractor's confined space program has been reviewed and approved by the T&amp;PS site safety lead.</li> <li>ii. Ensure all T&amp;PS entrants are trained in the contractor's confined space entry program.</li> <li>iii. Ensure the contractor is aware of all hazards in the space.</li> <li>iv. Ensure the contractor has access to form 2A-33.2.</li> <li>v. Ensure the contractor executes and posts an acceptable entry permit.</li> <li>vi. Ensure the contractor reports all needed information to the confined space log administrator.</li> <li>vii. Ensure acceptable entry conditions are maintained, proper air monitoring is performed, the attendant is in place, and rescue services are available.</li> </ul>	<p>Assume the role of entry supervisor for T&amp;PS personnel who are authorized entrants:</p> <ul style="list-style-type: none"> <li>i. Ensure all T&amp;PS entrants are trained to SH-2A-33, Safe Work Procedures in Confined Spaces.</li> <li>ii. Ensure the entrants are aware of all hazards in the space.</li> <li>iii. Complete form 2A-33.1.</li> <li>iv. Report all needed information to the confined space log administrator.</li> <li>v. Ensure acceptable entry conditions are maintained, continuous air monitoring is performed, the attendant(s) is(are) in place, and rescue services are available.</li> <li>vi. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.</li> </ul>

**4.12.4 Contractor Workers Only as Entrants**

If only contractor workers will enter the space, the T&PS confined space competent person shall:

- Ensure the contractor's confined space program has been reviewed and approved by the T&PS site safety lead.
- Make the contractor aware of all hazards in the space.
- Ensure the contractor has access to form 2A-33.2.
- Ensure the contractor has trained and established rescue services in place.

The contractor shall classify the space using his or her approved confined space program and communicate with the T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator. The contractor shall report all needed information to the T&PS confined space log administrator.

#### **4.12.5 Completing the Entry Process**

When work in the confined space is completed, the T&PS confined space competent person/entry supervisor shall:

- Verify that all authorized entrants have left the confined space and that no tools or equipment has been left in the space unintentionally.
- Ensure all permits are removed, and if a T&PS permit was used, remove the posted copy of form 2A-33.1 and sign it, cancelling the permit.
- Notify rescue services the permit has been cancelled.
- Remove all green tags, if applicable, and attach to the cancelled permit.
- Return any cancelled copies of form 2A-33.1 to the confined space log administrator for record retention and filing. See 6.0, Quality Records.

### **5.0 KEY CONTACTS**

For questions regarding the content and implementation of the confined space program, contact the manager—Construction Safety and Health.

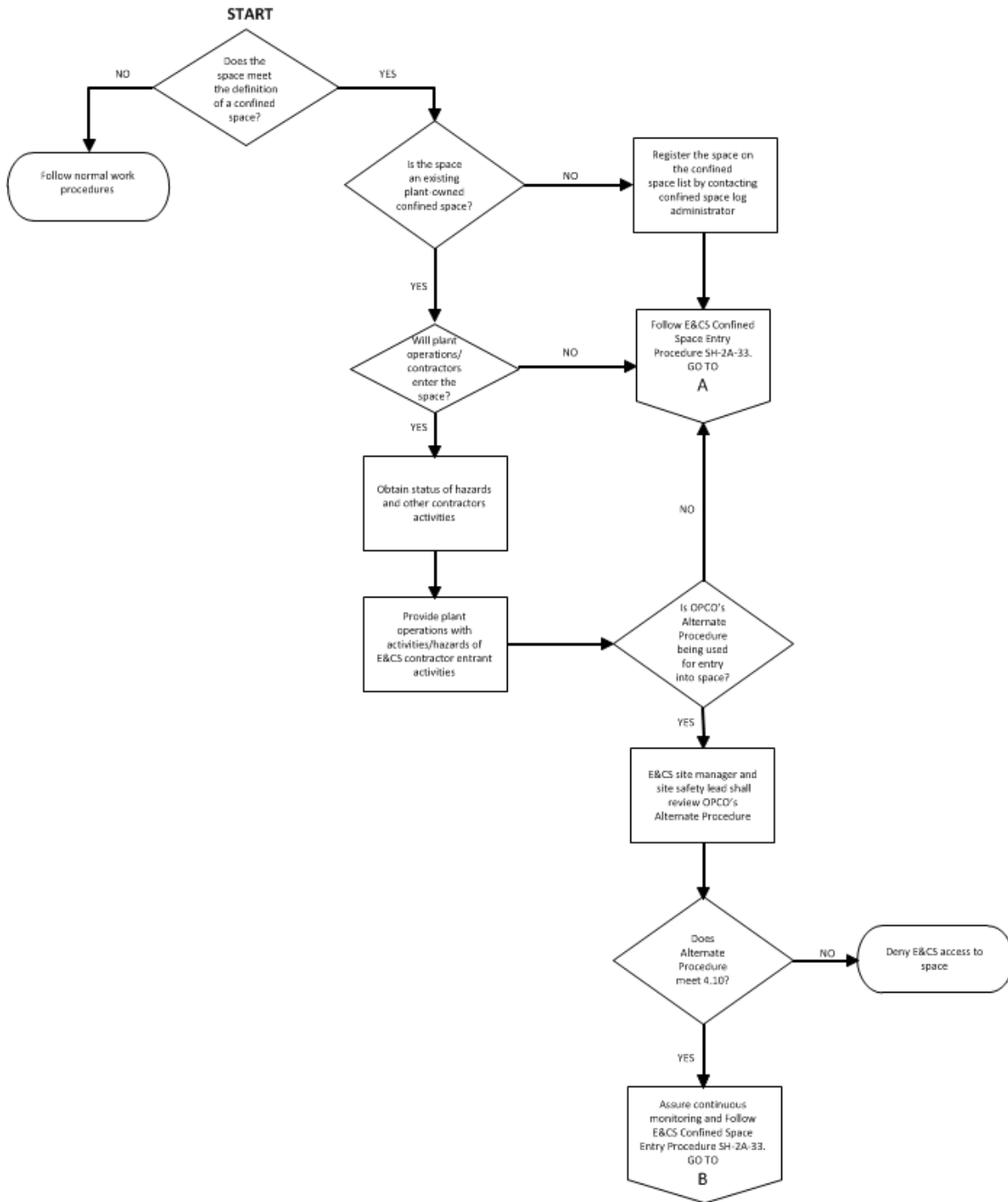
### **6.0 QUALITY RECORDS**

Contractors shall retain cancelled copies of form 2A-33.1 and other records generated by this procedure in accordance with the records retention schedule.

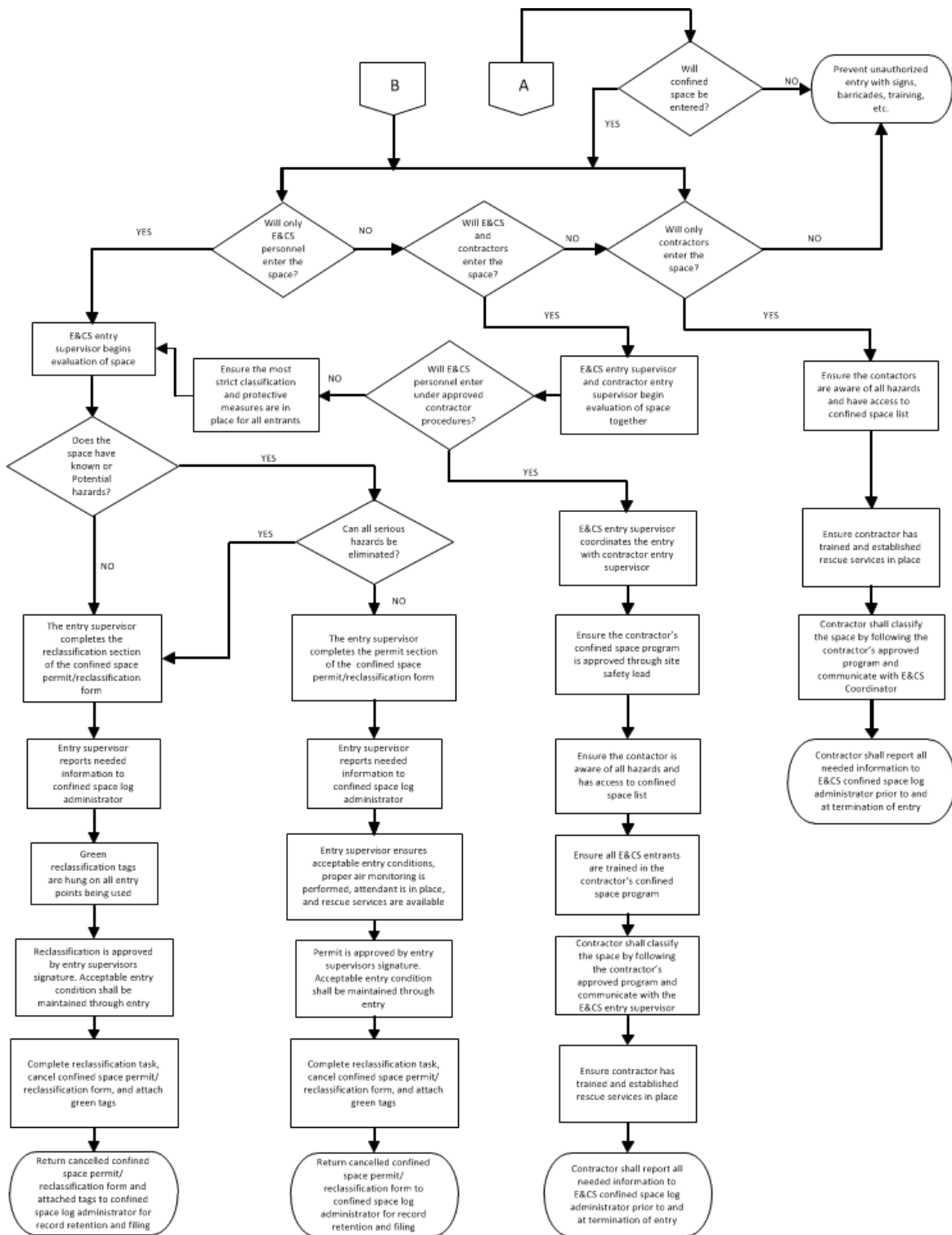
### **7.0 ATTACHMENTS**

- Attachment A, Confined Space Entry Flowchart (2 pages).
- Attachment B, Historical Summary of Changes.

Attachment A, Confined Space Entry Flowchart, Page 1 of 2



Attachment A, Confined Space Entry Flowchart, Page 2 of 2



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Attachment B, Historical Summary of Changes

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Rev. 0  
10-20-2015

Approved by Bob Fitzgerald, Chad Kendrick, and Bill Boyd  
Reviewed by Project Safety Leadership Team and Procedure Consolidation Team  
Revised by Bob Fitzgerald

Remarks:  
Issued.

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12-20-2016

Corrected broken hyperlink to referenced document (2.2).

Approved by Bill Batts

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Rev. 1  
05/09/2017

Approved by Bruce Long and Bill Boyd  
Reviewed by Process Coordination Team and Project Safety Leadership Team  
Revised by Bill Batts

Remarks:  
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

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# Southern Company Operations

## Technical and Project Solutions

### Environmental, Health, and Safety Standards

#### SH-S-6

#### Ash Basins

	<b>Rev. 2</b>
<b>Date</b>	07/27/2021
<b>Revised By</b>	Bill Batts, manager-Operations Safety and Health Corporate
<b>Reviewed by T&amp;PS Process Coordination Team and T&amp;PS Safety Leadership Team</b>	
<b>Approved By</b>	Paula Marino, executive vice president-Technical and Project Solutions



## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS AND REFERENCES .....	3
2.1	Definitions .....	3
2.2	References .....	3
3.0	RESPONSIBILITY .....	4
3.1	Construction Site Manager .....	4
3.2	Startup Manager .....	4
3.3	Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .....	4
3.4	Contractors .....	4
4.0	STANDARD .....	4
4.1	General .....	4
4.2	Planning .....	4
4.3	Emergency Action Plans .....	5
4.4	Training .....	6
4.5	Site Supervision and Competent Person(s) .....	7
4.6	Earth-Moving Equipment .....	8
4.7	Ground Conditions .....	9
4.8	Working Over or Near Water .....	10
4.9	Environmental Requirements .....	10
4.10	Occupational Health .....	10
4.11	Wildlife .....	12
4.12	Drones .....	12
5.0	KEY CONTACT .....	12
6.0	QUALITY RECORDS .....	12
7.0	ATTACHMENTS .....	12

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This standard provides requirements and best practices for the safe execution of ash basin remediation on Technical and Project Solutions (T&PS) coal closure projects.

### 1.2 Scope

This guideline applies to T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

### 2.2 References

- T&PS Contractor Environmental, Health, and Safety Specifications
  - Section 6.0, Planning and Hazard Analysis
  - Section 40.0, Working Over or Near Water
  - Section 52.0, Qualifying Equipment Operators
  - Section 58.0, Earth-Moving Equipment
  - Section 66.0, Silica
  - Section 68.0, Arsenic
  - Section 79.0, Spill Prevention, Control, and Countermeasures (SPCC)
  - Section 80.0, Storm-Water Management
- JSA: Job Safety Analysis - Ash Basin Work
- Man-on-the-Ground Sample Program
- U.S. Federal Emergency Management Agency (FEMA), [Safe Rooms: Selecting Design Criteria \(HSFEHQ-11-J-0004, 0005\)](#), RA2, June 2011
- [Southern Company Project Security Rules](#)

### **3.0 RESPONSIBILITY**

#### **3.1 Construction Site Manager**

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

#### **3.2 Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

#### **3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

#### **3.4 Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

### **4.0 STANDARD**

#### **4.1 General**

Prior to beginning work, contractors performing work on Southern Company projects shall submit a detailed site-specific safety plan to the T&PS construction site manager for review and approval.

#### **4.2 Planning**

Contractors will develop a work plan that includes the following:

- Identify roles, responsibilities, and key personnel for the main construction and field engineering activities.
- Summarize the applicable geotechnical engineering reports, design drawings, and specifications that are applicable to the development of the ash basin closure means and methods.

- Provide site-specific material selection and placement criteria.
- Develop work plans for the safe loading, unloading, storage, and transport of liner rolls.
- Develop stop-work decision trees for a variety of construction and field monitoring activities related to wet ash.
- Establish procedures for the use of monitoring equipment and the criteria used to inform equipment operators and site management of potential problem conditions.
- Provide criteria for addressing changes in site conditions and/or identifying when work plan updates are required.

Contractors shall plan all work activities in accordance with the requirements found in T&PS Contractor EH&S Specifications, section 6.0, Planning and Hazard Analysis.

#### **4.3 Emergency Action Plans**

The T&PS construction site manager shall ensure a site-specific emergency action plan (EAP) has been developed for T&PS personnel on the project.

Contractors shall develop a site-specific EAP for their personnel. Contractors may, with agreement from site management, use the inclement weather portion of the T&PS site EAP for their personnel.

The contractor's EAP may be subject to specific plant requirements.

The contractor's EAP shall include:

- A plan for inclement weather including, but not limited to, hurricane, flash flooding, lightning, severe storms, and tornadoes. The plan shall include:
  - Weather monitoring, responsible person(s), distances for action, shelter, and site evacuation. Storm shelters shall meet the requirements found in FEMA DR 1679 RA2.
  - A method of communicating weather alarms to personnel, such as radio, LINC phone, or other approved method. If the site is located outside the alarm coverage of the parent facility, outdoor audio and/or visual alarms are recommended and will be evaluated by site management for feasibility.
- Fire.
- Medical emergency, including the closest hospital and appropriate emergency numbers.
- Chemical release, including anhydrous ammonia and chlorine.
- Rescue of personnel who become trapped in wet ash, including:

- Alternative methods of exiting the cab of trapped equipment.
- Placement of rescue devices at regular intervals, including types of rescue devices, specific locations or distance intervals, and the testing and inspection of rescue devices.
- Rescue equipment for working over or near water. See T&PS Contractor EH&S Specifications, section 40.0, Working Over or Near Water.
- Training of rescue personnel including familiarization of risk and properties of both wet and dry ash.

#### NOTE

Due to the nature of wet ash, boats, skiffs, or typical motorized equipment may be insufficient in a rescue situation. Amphibious vehicles are an option; however, they must be evaluated based upon their capabilities, capacities, and configuration.

Personnel shall train to the EAP in accordance with regulatory requirements.

Emergency drills shall occur at not less than 6-month intervals.

Rescue services other than a facility's emergency rescue team (ERT) must be reviewed and approved by T&PS site management. Site visits for the purposes of training rescue personnel shall be coordinated with T&PS site management.

If third-party services are used for rescue, work will stop if units are unavailable to respond unless secondary services are available.

When emergency personnel are responding to an active emergency such as medical or fire, all vehicle operations on access roads shall stop until the all-clear signal is given. If the response involves the ash basin operations area, all equipment shall also stop until emergency personnel are clear of the operations area.

#### NOTE

Depending on the layout of the site, shutdowns during an active emergency may involve the entire site to ensure proper access and egress of emergency vehicles and personnel.

Contractor plans, submitted as part of their site-specific safety plan, will be subject to review and approval by T&PS site management.

#### 4.4 Training

Contractors shall provide training to meet all regulatory requirements and site access requirements.

In addition to the above, contractors shall train operators on the following:

- Comprehensive training on the specific hazards associated with both wet and dry ash and the tools and methods used to monitor and make safety assessments related to the conditions of the ash.
- Ash-pond-specific general awareness orientation at the time of hire.
- Evacuation and/or rescue plans specific to the ash basin locations.
- Man-on-the-ground process.
- Stop-work authority.

The contractor shall submit their training program to the T&PS construction site manager for review prior to mobilization.

Visitors and vendors who have reason to be within the bounds of an ash basin shall be escorted at all times and shall receive a briefing on the hazards associated with the work, the area where they will be located, and the site EAP. The contractor shall provide a full orientation to any vendor or visitor requiring unescorted access.

After personnel are trained, the contractor shall issue each worker a card that indicates training dates and is maintained on his or her person while onsite. Hardhat stickers that indicate training are also recommended and may be required at certain sites for specific training such as anhydrous ammonia awareness.

Contractors shall maintain a training matrix. At a minimum, the matrix shall include the following information:

- Employee name.
- Date of hire.
- Date of last drug test.
- Date of orientation training (or update training.)
- Specific equipment and date of training.
- Specialty training and date of training (for example, OSHA 30 hr or CPR/first aid).
- Specialty PPE authorized and date of training (for example, respirator type and size).

Contractors shall keep the training matrix current and make it available for review, upon request.

The contractor shall submit all training materials to T&PS construction site management for review and approval.

#### **4.5 Site Supervision and Competent Person(s)**

Contractors shall submit to the T&PS construction site manager the resume and qualification documentation for competent person(s) and supervisory personnel assigned to the project. The required documentation shall be submitted through PIMS. The purchaser reserves the right to reject any proposed personnel for those positions.

Contractors shall maintain a current list of competent person(s) for all areas within their scope of work as identified in the OSHA Standards for Construction (29 CFR 1926). Furthermore, the contractor shall identify and assign responsible persons who are

qualified and competent in the recognition and control of hazards unique to work on ash basins. The list shall be provided to the Southern Company EH&S site lead on a monthly basis.

#### **4.6 Earth-Moving Equipment**

All earth-moving equipment shall be maintained in a safe condition at all times. Daily preshift inspections are required on all equipment. Any defects noted will be documented and corrected as soon as practical. Inoperable safety devices are sufficient cause to remove the equipment from service until such time as the equipment is repaired. Examples of safety devices include:

- Horns.
- Mirrors.
- Signal lights.
- Backup alarms.
- Proximity warning devices or backup cameras when part of the contractor's man-on-the-ground process.

Contractors shall develop a man-on-the-ground process to ensure the safety of personnel working on foot or in small motorized equipment such as buggies. See doc 6.3, Man-on-the-Ground Sample Program.

Personnel shall not approach moving equipment unless a positive means of alerting the operator has been made and the equipment has stopped.

Operators will be trained and qualified in accordance with T&PS Contractor EH&S Specifications, section 52.0, Qualifying Equipment Operators. In addition to the requirements found in section 52.0, operator training will include the nature of wet and dry ash and how to recognize potential hazards associated with it. Contractors shall submit their training material to the T&PS construction site manager for review and approval.

Contractors shall develop a procedure for extricating stuck equipment.

Access roads within the bounds of an ash basin shall be constructed and maintained based on P.E.-approved designs for specific ash basin conditions. Where geosynthetics are used, the computations shall be based on the specifications provided by the manufacturer. Designs or computations shall be submitted to the T&PS construction site manager for review a minimum of 15 days, or as otherwise agreed to, prior to the beginning of construction.

Appropriate signage shall be displayed as needed to indicate routes of travel.

Equipment within the bounds of the ash basin shall not be left running at idle unnecessarily as the vibrations can lead to liquefaction of the ash.

Vibratory equipment (smooth drum rollers, sheep-foot rollers, and so forth) shall have vibratory elements disabled for operations over wet ash. For operations adjacent to wet ash, the design engineer shall determine proper setbacks for vibratory element use.

In case of unacceptable ground conditions, work shall stop immediately in such locations until conditions have been deemed acceptable by the competent person.

Break areas, port-a-johns, and fuel storage areas shall be protected from moving equipment through the use of jersey barriers or equivalent, or set back sufficiently far from routes of travel as to minimize the risk. Access roadways near excavations or steep slopes will likewise be protected.

All night operations must be approved in advance by Southern Company management. At a minimum, night-time operations must provide lighting and reflective signage to identify travel routes, intersections, pedestrian crossings, or any other area where personnel could be at risk from vehicular traffic.

During winter months or when there is a risk of freezing temperatures, ash shall not be preloaded and shall not be left in the truck bed overnight.

No dumping equipment shall move with a dump bed or tarpaulin system in the raised position. Contractors shall develop a system to alert operators when the bed is in a raised position.

Dump beds shall be monitored for the accumulation of wet ash, which could present a rollover hazard.

When not in use, equipment shall be parked on level and stable ground with the parking brakes set and wheels chocked with a purpose-designed device.

Cell phones shall be prohibited from use in the cab of mobile equipment. Two-way radio is the preferred method of communication with and between operators.

See T&PS Contractor EH&S Specifications, section 58.0, Earth-Moving Equipment, for additional requirements.

#### **4.7 Ground Conditions**

Contractors shall monitor and document ground conditions as required. A competent person(s) shall be designated to inspect work areas on a regular basis. The frequency and methods of inspection shall be determined based on the environmental conditions, types and amount of equipment operating, and any engineering requirements.

#### **NOTE**

Monitoring of ground conditions is of critical importance on ash basin remediation projects. Hazards include liquefaction, slumping, cave-in or collapse of excavations, stuck equipment, or trapped personnel. The contractor shall have a method of immediate notification to craft workers when work should stop.



#### **4.8 Working Over or Near Water**

See T&PS Contractor EH&S Specifications, section 40.0, Working Over or Near Water, for requirements related to working in proximity to water and the associated personal floatation devices (PFDs) that are required.

See note at 4.3, Emergency Action Plans, when selecting rescue equipment for personnel working over or near water.

#### **4.9 Environmental Requirements**

Contractors shall meet all federal, state, local, and Southern Company requirements for environmental protection. This requirement shall include a comprehensive plan for dust suppression and fugitive dust control, both onsite and for offsite ash handling operations, if part of the contractor's scope.

As part of a best management practices (BMP) plan, the contractor shall ensure appropriate methods are employed to prevent the spread and accumulation of dirt, dust, and rock from construction equipment onto public roadways at points of entry or exit from the project.

Contractors shall develop a spill prevention control and countermeasures (SPCC) plan and a storm water management plan (if part of the contractor's scope). The developed plan(s) shall be included in the contractor's site-specific safety plan and subject to review and approval by the construction site management and/or the relevant operating company environmental affairs specialist. See T&PS Contractor EH&S Specifications, section 79.0, Spill Prevention, Control, and Countermeasures Plans (SPCC), and section 80.0, Storm-Water Management, for further information.

Spill kits of sufficient size and quantity shall be positioned at fueling areas or in areas where the potential for fuel spill is the greatest. Spill kits shall be maintained and inspected on a regular basis.

#### **4.10 Occupational Health**

In the site-specific safety plan, each contractor shall include an occupation health program that meets all regulatory requirements. Occupational health programs shall include but are not limited to:

- Inorganic arsenic.
- Silica.
- Other heavy metals known to be present in coal combustion byproducts.
- Respirable dust.
- Heat/cold stress management.

The location(s) of portable wash stations (hand wash and/or showers) shall be specified in the safety plan.

A safety data sheet (SDS) shall be made available to the contractor for the coal ash that is part of his or her scope of work.

Contractors are responsible for performing exposure determinations for all methods of exposure (inhalation, contact, and ingestion) and obtaining personnel sampling data, as required to meet regulatory requirements. The contractor's plan shall account for changing conditions as the work progresses. Contractors shall maintain records as required.

The contractor's sampling strategy must meet the following minimum criteria:

- Airborne personal exposure monitoring shall be completed for appropriate constituents as identified on the SDS.
- Airborne personal exposure monitoring shall be conducted initially, then every 6 months for the first 3 years, and subsequently as conditions change at the site.
- Exposure monitoring shall be conducted by qualified individuals and conducted under the direction of a certified industrial hygienist (CIH).
- Samples shall be collected and analyzed in accordance with regulatory requirements or other internationally recognized methods (such as NIOSH).
- Sampling equipment shall be maintained in accordance with manufacturer's instructions and/or generally accepted good industrial hygiene practices.
- Laboratories shall be accredited by the American Industrial Hygiene Association (AIHA) or equivalent.

For contract compliance purposes, the purchaser may request to review the contractors' sampling results.

At a minimum, the following information shall be provided for each sample collected:

- Sample date.
- Employee name.
- Company and job title.
- Job tasks performed during sampling.
- Any applicable work conditions, including environmental conditions.
- Sample duration.
- Air sampling pump calibration values.
- Pre- and post-calibration values.
- Use of respirators or other control methods (ventilation, wet methods, and so forth).
- Analytical results.

Contractors shall provide immediate notification to the purchaser if any sampling results equal or exceed the action level for the sampled substance. Additionally, contractors shall provide plans to mitigate the hazard(s) to ensure compliance with relevant standards. The contractor is responsible for amending the site-specific safety plan to reflect the change(s).

See T&PS Contractor EH&S Specifications, section 68.0, Arsenic; and section 66.0, Silica; for further requirements.

#### **4.11 Wildlife**

Contractors will develop a plan to address encountering dangerous wildlife such as, but not limited to, venomous snakes, alligators, or any other wildlife that could be a threat to the safety of workers. Only trained and licensed third-party or state/local authorities may capture or remove wildlife from the work areas.

#### **4.12 Drones**

A drone or unmanned aerial vehicle (UAV) is a useful tool to provide progress reports and for planning purposes. They also provide a means of investigating potentially unstable areas from a safe distance, keeping personnel out of harm's way. Drone operation is regulated by the U.S. Federal Aviation Administration (FAA). The contractor must provide a documented program that complies with FAA regulations, identifies authorized pilots, and has provisions for requesting/notifying Southern Company management of flight plans prior to operation.

### **5.0 KEY CONTACT**

For questions regarding the content or implementation of this standard, contact the manager—Construction Safety and Health.

### **6.0 QUALITY RECORDS**

Quality records shall be retained in accordance with the Southern Company record retention schedule.

### **7.0 ATTACHMENTS**

- Attachment A, Historical Summary of Changes

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## Attachment A, Historical Summary of Changes

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Rev. 0  
10/18/2017

Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts

Remarks:  
Issued.

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Rev. 1  
06/28/2018

Approved by Bill Boyd and Robin Hurst  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts

Remarks:  
Revised 4.5, Earth-Moving Equipment, to clarify and strengthen requirements. Added requirement for SDS and specified information to be provided for exposure sampling (4.9, Occupational Health).  
Revised 4.11, Training.

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05/15/2019  
Organization name updated.

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02/01/2021  
Repaired broken link to FEMA document (2.2).

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Rev. 2  
07/27/2021

Approved by Paula Marino  
Reviewed by T&PS Safety Leadership Team  
Revised by Bill Batts

Remarks:  
References to voided EH&S procedures, standards, and guidelines updated to T&PS Contractor EH&S Specifications. Corrected title of FEMA document (2.2). Edited note on evaluation of amphibious vehicles (4.3). Moved Training (was 4.12) to 4.4 to be consistent with Generation and Operations procedures; removed option to use third-party training providers; clarified explanation of orientation for unescorted vendors or visitors. Strengthened requirements for list of current competent persons; eliminated list of required competent persons (4.5). Strengthened requirements concerning personnel and earth-moving equipment and access roads; added the requirement for night operations to be approved by SC management; prohibited cell phone use in the cab of mobile equipment; deleted the requirement for over-the-road tractors to comply with 49 CFR (4.6). Clarified requirements for ground stability monitoring (4.7). Added requirement for contractors to prevent dust, dirt, and rock on public roadways (4.9). Added minimum criteria for contractor's occupational health sampling (4.10). Added 4.12, Drones.


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## SOUTHERN COMPANY GENERATION

SCG-SH-0060

### Legionella Exposure Control Guideline

<b>Revision</b>	<b>Approval Date</b>	<b>Approved by</b>	<b>Title</b>
0	2/7/2018		Executive Vice President and Chief Production Officer

Contents

<b>1.0</b>	<b>Purpose and Scope</b> .....	<b>3</b>
1.1	Purpose.....	3
1.2	Scope.....	3
<b>2.0</b>	<b>Definitions and References</b> .....	<b>3</b>
2.1	Definitions .....	3
2.2	References.....	3
<b>3.0</b>	<b>Responsibilities</b> .....	<b>3</b>
3.1	Program Manager .....	3
3.2	Program Coordinator .....	4
3.3	Supervisors .....	4
3.4	Authorized Employees.....	4
3.5	Project Managers or Contractor Liaisons.....	4
3.6	Plant Safety and Health Professional .....	4
3.7	Corporate Industrial Hygiene .....	5
<b>4.0</b>	<b>Program</b> .....	<b>5</b>
4.1	Site-Specific Procedure .....	5
4.2	Site-Specific Information Form .....	5
4.3	Work Practices .....	5
4.4	Treatment Methods .....	6
4.5	Sampling .....	6
4.6	Training .....	6
4.7	Respiratory Protection .....	6
<b>5.0</b>	<b>Key Contacts</b> .....	<b>6</b>
<b>6.0</b>	<b>Records Retention Requirements</b> .....	<b>6</b>
<b>7.0</b>	<b>Attachments</b> .....	<b>6</b>
	<b>Attachment 1 - General Information</b> .....	<b>7</b>
	<b>Attachment 2 – Site-specific Information Form</b> .....	<b>9</b>
	<b>Attachment 3 – Sampling Guidelines</b> .....	<b>10</b>

## **1.0 PURPOSE AND SCOPE**

### **1.1 Purpose**

The purpose of this document is to standardize practices used by Southern Company Generating facilities to manage exposure to Legionella bacteria associated with water systems.

### **1.2 Scope**

This document applies to Southern Company Generating facilities where there are potential exposures to Legionella bacteria due to presence of potentially contaminated water sources. Examples of potentially contaminated water sources are listed in Attachment 1.

## **2.0 DEFINITIONS AND REFERENCES**

### **2.1 Definitions**

**Legionella** – Common aquatic bacteria found in natural and man-made water systems, and occasionally in some soils. More than 50 species of Legionella have been identified. Legionella pneumophila is associated with 90 percent of legionellosis cases.

**Legionnaires' DISEASE** – A common name for any of the several illnesses caused by Legionella bacteria. It is a form of pneumonia caused by a lung infection. Legionnaires' disease is bacterial and is associated with contaminated water-based aerosols that have originated from warm water sources. It is often associated with poorly maintained cooling towers and potable water systems.

**legionellosis** – The term used to describe any illness caused by exposure to Legionella bacteria. Legionnaires' disease and Pontiac fever are the most common types of legionellosis; Legionnaires' disease is the more serious and of primary concern.

### **2.2 References**

OSHA Technical Manual Section III: Chapter 7, "Legionnaires' Disease"

The Ohio State University, Legionella Exposure Control Plan, 2013

Gulf Power Company, Safety and Health Compliance Guidelines – Waterborne Pathogens Program, 2001

American Electrical Power (AEP), Legionella Exposure Guidelines, 2016

29 CFR 1910.134, Respiratory Protection, 2013

## **3.0 RESPONSIBILITIES**

### **3.1 Program Manager**

The program manager is responsible for the following:

- Provide program oversight and consultation to work groups regarding potential Legionella risks and exposure prevention.

- Periodically review this document and the Legionella site-specific procedure, and identify tasks with potential Legionella exposure.
- Assign a program coordinator.

### **3.2 Program Coordinator**

The program coordinator should be someone who has knowledge of all aspects of the facility water system including cooling towers, potable water systems, and emergency water systems. In addition, the program coordinator is responsible for the following:

- Identify areas and equipment with potential for Legionella growth.
- Develop a Legionella risk assessment for these areas.
- Develop a Legionella site-specific procedure. This procedure should define the evaluation, controls, and personal protective equipment (PPE) needed.
- Update the Legionella risk assessment and Legionella site-specific procedure, and communicate to the Program Manager.
- Determine proper control procedures and PPE as needed.
- Arrange sampling for Legionella contamination if needed.
- Maintain proper documentation of the site-specific procedure.

### **3.3 Supervisors**

Supervisors are responsible for the following:

- Ensure all affected personnel are trained and competent on the Legionella site-specific procedure.
- Provide appropriate PPE when conducting work associated with this procedure.

### **3.4 Authorized Employees**

Authorized employees are responsible for the following:

- Must be properly trained on the Legionella site-specific procedure.
- Obtain and use the appropriate PPE for the task being performed.

### **3.5 Project Managers or Contractor Liaisons**

The project manager or contractor liaison is responsible for the following:

- Ensure all affected contractor personnel are made aware of the hazards associated with Legionella.
- Ensure all affected personnel have appropriate PPE when conducting work associated with this procedure.

### **3.6 Plant Safety and Health Professional**

The plant Safety and Health professional is responsible for the following:

- Assist program coordinator by providing supporting data to make decisions on the Legionella site-specific procedure and PPE.
- Coordinate and facilitate the necessary training.
- Ensure proper records are maintained.
- Review these procedures annually.



### **3.7 Corporate Industrial Hygiene**

Corporate Industrial Hygiene is responsible for the following:

- Assist the program coordinator with decisions regarding the adequacy of the Legionella site-specific procedure and PPE as requested.
- Provide information on sampling and give technical guidance as requested.

## **4.0 PROGRAM**

### **4.1 Site-Specific Procedure**

The program coordinator should develop a site-specific procedure for the facility. The purpose of a site-specific procedure is to reduce the risk of legionellosis by:

- Specifying the types of water systems in a facility.
- Identifying risk factors, which include any favorable conditions for legionella growth.
- Establishing practices to address identified risks.
- Implementing sound preventative maintenance practices using effective controls.

### **4.2 Site-Specific Information Form**

Each area or type of equipment with potential Legionella exposure should be identified and evaluated. A Legionella site-specific information form should be completed, listing those areas and equipment. See Attachment 2 for a template.

### **4.3 Work Practices**

Some Southern Company work activities present a potential exposure to aerosolized contaminated water sources. These work activities include:

- Condenser cleaning.
- Cooling tower sludge cleaning.
- Cooling tower inspections (on-line).
- Washing hydro scroll cases.
- Repairing condenser tube leaks.
- Any activity where potentially contaminated water sources will be used or aerosolized.

These PPE and work practice controls are recommended to prevent possible exposure:

- Half-mask respirator with high efficiency cartridges (P100).
- Neoprene or nitrile gloves.
- Rubber boots.
- Face shield, chemical goggles, or full-face respirator.
- Good hygiene practices; for example, washing face and hands before eating, drinking, or smoking.
- Impermeable coveralls, if necessary, to limit dermal exposure.
- Effective water treatment methods to control organisms (biocides, chlorine) when feasible.
- Limit aerosolizing of water and sludge.

#### **4.4 Treatment Methods**

The growth of Legionella can be controlled through regular maintenance activities and a disinfection program. Plant management should determine the best method for disinfection based on treatment effectiveness, cost, and potential for piping or system corrosion.

Additional treatment methods can be employed to ensure Legionella proliferation does not occur. Plant management shall determine when additional treatment methods are required or recommended, based on the types of water systems in the facility.

#### **4.5 Sampling**

Sampling for Legionella is not normally required, since protection or mitigation needs are determined by the type of water source. The program coordinator, in consultation with corporate Industrial Hygiene, shall implementing acceptable sampling protocols based on the types of water systems present within the facility. See attachment 3, Sampling Guidelines.

#### **4.6 Training**

The plant Safety and Health professional shall ensure initial training is provided to designated employees before they work in any risk areas. Initial training shall be documented in SHIPS #024136. Site-specific annual refresher training shall be captured as part of the plant's site-specific compliance training.

#### **4.7 Respiratory Protection**

Employees required to wear respiratory protection must meet the fit-testing, medical, training, and usage requirements of SCG-SH-1000, Respiratory Protection Program.

#### **5.0 KEY CONTACTS**

For questions regarding the content and implementation of this program, contact your Generation Safety & Health Coordinator.

#### **6.0 RECORDS RETENTION REQUIREMENTS**

The following records are business records generated from following this procedure and shall be retained according to the Southern Company Record Retention Schedule.

#### **7.0 ATTACHMENTS**

Attachment 1, General Information

Attachment 2, Site-Specific Information Form

Attachment 3, Sampling Guidelines

## ATTACHMENT 1 - GENERAL INFORMATION

In 1976, more than 200 people attending an American Legion convention at a Philadelphia, Pennsylvania, hotel acquired a severe respiratory illness that led to 34 deaths. An investigation revealed that victims had inhaled air containing a previously unknown bacterial strain. The bacteria were traced to cooling tower drift that had entered the hotel's ventilation system. The bacterial strain was named *Legionella pneumophila*, and the illness was called Legionnaires' disease.

*Legionella* bacteria are commonly found in drinking water, groundwater, and surface water. While the bacteria have been detected in habitats ranging from alpine lakes to hot springs, growth is strongest in waters with temperatures between 68 and 122 °F. The bacteria thrive in the warm, damp conditions within cooling towers, humidifiers, and evaporative condensers. Cooling towers provide a strong breeding ground because the evaporation concentrates the bacteria's food source of nutrients and organic matter, and stagnant water provides time for reproduction of the organisms.

Legionnaires' disease is not contagious. The mere presence of *Legionella* bacteria is not an indication that disease will occur. Disease develops only when a susceptible individual inhales a virulent strain of the bacteria. Individuals who are most at risk include the elderly, smokers, alcoholics, young children, and those with suppressed immune systems.

Reaction to *Legionella* bacteria exposure can range from a mild respiratory illness that may not require treatment, to severe pneumonia-like symptoms 2 to 10 days after exposure. If not detected and treated promptly with appropriate antibiotics, it can lead to death.

### Symptoms

Legionnaires' disease has an incubation period of 2 to 10 days. Severity ranges from a mild cough and low fever to rapidly progressive pneumonia and coma. Early symptoms include malaise, muscle aches, and slight headache. Later symptoms include high fever (up to 105 °F), a dry cough, and shortness of breath. Gastrointestinal symptoms including vomiting, diarrhea, nausea, and abdominal pain are common. The disease is treated with erythromycin or a combination of erythromycin and rifampin.

Pontiac fever is a non-pneumonia, flu-like disease associated with, and likely caused by, the *Legionella* bacterium. This disease has an "attack rate" of 90 percent or higher among those exposed, and a short incubation period of 1 to 3 days. Complete recovery usually occurs in 2 to 5 days without medical intervention.

### Growth Conditions

*L. pneumophila* bacteria are widely distributed in water systems. These bacteria tend to grow in biofilms or slime on the surfaces of lakes, rivers, and streams. They are not eliminated by the chlorination used to purify domestic water systems. Low and even nondetectable levels of the organism can colonize a water source and grow to high concentrations under the right conditions.

Conditions that promote growth of the organism include heat, sediment, scale, and supporting microflora in water. Common water organisms, including algae, amoebae, and other bacteria, appear to amplify *Legionella* growth by providing nutrients or harboring the organism. Because

of its ability to remain viable in domestic water systems, it is capable of rapid multiplication under the proper conditions.

Water conditions that tend to promote the growth of Legionella include:

- Stagnation.
- Temperatures between 20 and 50 °C (68 to 122 °F). The optimal growth range is 35 to 46 °C (95 to 115 °F).
- A pH between 5.0 and 8.5.
- Sediment that tends to promote growth of commensal microflora; and micro-organisms, including algae, flavobacteria, and pseudomonas, which supply essential nutrients for growth of Legionella or harbor the organism.

Water sources that frequently provide optimal conditions for growth of the organisms include:

- Cooling towers, evaporative condensers, and fluid coolers that use evaporation to reject heat. These include many industrial processes that use water to remove excess heat.
- Domestic hot-water systems with water heaters that operate below 60 °C (140 °F) and deliver water to taps below 50 °C (122 °F).
- Humidifiers and decorative fountains that create a water spray and use water at temperatures favorable to growth.
- Spas and whirlpools.
- Sources such as stagnant water in fire sprinkler systems, and warm water for eye washes and safety showers.

**ATTACHMENT 2 – SITE-SPECIFIC INFORMATION FORM**

**Plant/Location:** \_\_\_\_\_

**1. Site-Specific Information Form**

The designated program coordinator for this site is:

Program Coordinator:	
Contact Numbers: Office:	
Linc Radio / Cell:	
Other:	

**2. Areas and Equipment**

The potential Legionella bacteria exposure areas, equipment, and work activities at this facility.

Date	Areas and Equipment	Work Activities
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

### ATTACHMENT 3 – SAMPLING GUIDELINES

If sampling is performed, consult with corporate Industrial Hygiene. The OSHA guidelines in Table 1 should be used to assess the effectiveness of water system maintenance and to interpret sampling results. The values in Table 1 are applicable to facilities and buildings occupied by generally healthy individuals.

**Table 1: OSHA Recommended Legionella Levels in Water Systems**

Results provided in number of colony forming units (CFU) of Legionella per milliliter (ml) of water.			
Action/Response	Cooling Tower or Evaporative Condenser	Potable Water	Humidifiers or Misters
Continue current treatment methods.	0 – 100	0 – 10	0
Clean and disinfect system followed by biocide treatment if necessary.	100 – 1,000	10 – 100	1 – 10
Immediate cleaning and disinfecting of the system followed by biocide treatment. Prevent employee and public exposure.	>1,000	>100	>10

Legionella sources are identified by microbiological examination of water and swab samples. Sample results are evaluated for hazard potential based on potential for exposure and the risk category in Table 2.

**Table 2: Risk Factors and Sample Results**





Risk Category	Legionella (CFU/ml)
High	Greater than 1000
Medium	100 – 999
Low	100



## SOUTHERN COMPANY GENERATION

SCG-SH-0100

### SAFE WORK PROCEDURES FOR CONFINED SPACES

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
0	February 10, 2003		Executive Vice President and Chief Production Officer
1	March 18, 2005		Executive Vice President and Chief Production Officer
2	October 19, 2011		Executive Vice President and Chief Production Officer
3	September 25, 2013		Executive Vice President and Chief Production Officer

## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS, REFERENCES, AND RELATED DOCUMENTS .....	3
2.1	Definitions.....	3
2.2	References .....	5
2.3	Related Documents .....	6
3.0	RESPONSIBILITY .....	6
3.1	Entrant Responsibilities .....	6
3.2	Attendant Responsibilities.....	7
3.3	Entry Supervisor Responsibilities.....	8
3.4	Management Responsibilities .....	9
4.0	REQUIREMENTS.....	10
4.1	Site Inventory List .....	10
4.2	Confined Space Warning Signs .....	11
4.3	Site-Specific Instructions .....	11
4.4	Employee Training.....	11
4.5	Contractor Requirements for Permit-Required Confined Space Entry.....	11
4.6	Annual Review.....	12
4.7	Entry Permit/Reclassification Form .....	12
4.8	Atmospheric Testing .....	12
4.9	Reclassification of Permit-Required Confined Spaces .....	14
4.10	Permit-Required Confined Space Entered Using Alternate Procedure.....	14
4.11	Reclassification Tag Removal.....	15
5.0	KEY CONTACT .....	16
6.0	QUALITY RECORDS .....	16
6.1	Record Retention.....	16
7.0	ATTACHMENTS.....	16



## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

The purpose of this procedure is to describe the requirements for safely entering and working in confined spaces at SC Generation facilities.

### 1.2 Scope

This procedure applies to all Generation facilities and Southern Company employees.

## 2.0 DEFINITIONS, REFERENCES, AND RELATED DOCUMENTS

### 2.1 Definitions

**Alternate Procedure** – The work practice used when the only serious hazard in the confined space is atmospheric and it can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space for safe entry.

**atmospheric test readings** – Atmospheric checks for (in the following order):

1. Oxygen content. (Between 19.5 – 23.5)
2. Flammable gases and vapors. (<10% LEL)
3. Potential toxic air contaminants. (Use the appropriate levels for the potential contaminant being tested for)

**attendant** – A trained individual stationed outside one or more permit-required confined spaces who monitors the authorized entrants and who performs all attendant's duties assigned in 3.2, Attendant Responsibilities.

**authorized entrant** – A trained individual that is authorized to enter a permit-required confined space.

**bump test** (also called **function check**) – A qualitative function check where a challenge gas is passed over the gas monitoring instrument sensor(s) at a concentration and exposure time sufficient to activate all alarm indicators to present at least their lower alarm setting. The purpose of this check is to confirm that gas can get to the sensor(s) and that all the alarms present are functional. A bump test of portable gas monitors shall be conducted before each day's use in accordance with the manufacturer's instructions. Any portable gas monitor that fails a bump test must be adjusted by means of the manufacturer's full calibration instructions before further use, or it shall be removed from service.

**full calibration check** – A quantitative test using a known traceable concentration of test gas to demonstrate that the gas monitoring instrument sensor(s) and alarms respond to the gas within manufacturer's acceptable limits. A full

calibration adjusts the sensor(s) response to match the desired value compared to a known traceable concentration of test gas. This full calibration check shall be done in accordance with the manufacturer's instructions. A full calibration shall be conducted at regular intervals in accordance with instructions specified by the instrument's manufacturer. Any portable gas monitor that fails a calibration check must be adjusted by means of the manufacturer's full calibration instructions before further use or it shall be removed from service.

**company site contractor coordinator** – The person designated to coordinate the work between the company and the contractor.

**confined space** – A space meeting all of the following criteria:

- Large enough for an individual to enter and perform assigned work.
- Limited or restricted means for entry or exit.
- Not designed for continuous occupancy.

**engulfment** – The surrounding of an individual by a liquid or particulate that can fill or plug the respiratory system, or cause death by strangulation, constriction, or crushing.

**entry** – The action by which an individual passes through an opening into a permit-required confined space. Entry includes activities in that space and occurs as soon as any part of the entrant's body breaks the plane of an opening into the space.

**entry supervisor** – The entry supervisor shall be designated by management as a person who has been trained in the roles and responsibilities associated with the entry of any specific space.

**hazardous atmosphere** – An atmosphere that may expose an individual to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- Oxygen concentration below 19.5 percent or above 23.5 percent.
- Carbon monoxide (CO) concentration above 35 ppm.
- Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL) or lower explosive limit (LEL).
- Any airborne contaminant in a concentration sufficient to expose an employee to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness.
- An immediately dangerous to life and health (IDLH) atmospheric condition.

**immediately dangerous to life and health (IDLH)** – Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit-required confined space.

**nonpermit-required confined space** – A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

**operating time** – All times shall be recorded as operating time, that is, central time in a 24-hour format.

**permit system** – The written procedure for preparing and issuing permits for entry and for returning the permit-required confined space to service following termination of entry.

**permit-required confined space (PRCS)** – A confined space that has one or more of the following hazardous characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material which has the potential for engulfing an entrant.
- Has an internal configuration where an entrant may become entrapped or asphyxiated by inwardly converging walls or by a floor sloping downward and tapering to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

#### NOTE

All confined spaces will be considered permit-required confined spaces until the hazards are assessed and controlled or eliminated.

**reclassification tag** – A tag posted at all points of entry to confined spaces indicating the confined space has been reclassified to a nonpermit-required or an Alternate Procedure confined space.

## 2.2 References

- 29 CFR 1910.146, Permit-required confined spaces.
- 29 CFR 1910.269, Electric power generation, transmission, and distribution.
- 29 CFR 1910.252, subpart Q, Welding, cutting, and brazing.
- SCO-SH-0201, Lockout/Tagout (LOTO) Procedure.
- Southern Company Generation Emergency Response Team Executive Committee. Technical Rescue Training Standard Operating Guidelines.

### **2.3 Related Documents**

- Generation Confined Space Entry Permit/Reclassification Form.
- Atmospheric Monitoring Data (Addendum).
- Reclassification Tags.
- Confined Space Log.

### **3.0 RESPONSIBILITY**

The following requirements apply to all employees whose jobs involve responsibilities associated with permit-required confined spaces.

#### **3.1 Entrant Responsibilities**

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Properly use equipment as required by paragraph (d)(4) of 29 CFR 1910.146:
  - Testing and monitoring equipment as described in 4.8, Atmospheric Testing.
  - Ventilating equipment needed to obtain acceptable entry conditions.
  - Communications equipment so attendants and authorized entrants can communicate.
  - Personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees.
  - Proper lighting equipment required to enable employees to see well enough, to work safely and to exit the space quickly in an emergency.
  - Follow all clearance procedures required prior to entry.
  - Barriers and shields used to isolate the space and protect entrants from external hazards.
  - Equipment, such as ladders, needed for safe ingress and egress by authorized entrants.
  - Rescue and emergency equipment needed to summons rescue and emergency services and to rescue entrants from permit spaces, except to the extent that the equipment is provided by rescue services.
  - Any other equipment necessary for safe entry into and rescue from permit spaces.

- Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.
- Alert the attendant when:
  - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or
  - The entrant detects a prohibited condition.
- Exit from the permit space as quickly as possible when:
  - An order to evacuate is given by the attendant or the entry supervisor,
  - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation,
  - The entrant detects a prohibited condition, or
  - An evacuation alarm is activated.

### **3.2 Attendant Responsibilities**

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Be aware of possible behavioral effects of hazard exposure in authorized entrants.
- Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the means used to identify authorized entrants accurately identifies who is in the permit space.
- Remain outside the permit space during entry operations until relieved by another attendant.
- Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
- Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:
  - If the attendant detects a prohibited condition.
  - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant.
  - If the attendant detects a situation outside the space that could endanger the authorized entrants.

- If the attendant cannot effectively and safely perform the required duties of an attendant.
- Summon emergency services as soon as the attendant determines that authorized entrants need assistance to escape from the permit space.
- Take the following actions when unauthorized persons approach or enter a permit space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the permit space.
  - Advise the unauthorized persons that they must exit immediately if they have entered the permit space.
  - Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.
- Perform nonentry rescues as specified by the rescue preplan.
- Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

### 3.3 Entry Supervisor Responsibilities

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Authorize initial entry into only those spaces that meet the following requirements:

If the space is a...	The entry supervisor shall...
Reclassified space	Visually confirm the appropriate sign and the reclassification tags are posted at all doors opened for entry.
Permit-required confined space	Visually confirm the appropriate sign and the permit/reclassification form are posted at the primary point of entry and an attendant is in place.

- Verify the appropriate entries have been made on the permit/reclassification form, that all tests specified by the permit/reclassification form have been conducted, and that the rescue preplans, procedures, and equipment specified by the permit/reclassification form are in place before endorsing the permit/reclassification form and allowing the entry to begin.
- Terminate the entry and cancel the permit/reclassification form as required.

- Verify that rescue services are available and that the means for summoning them are operable.
- Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
- Determine, when responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit/reclassification form and that acceptable entry conditions are maintained.

### **3.4 Management Responsibilities**

#### **3.4.1 Rescue and Emergency Services**

- If site management designates outside rescue and emergency services to provide permit space rescue, they shall:
  - Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified.
  - Evaluate a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit space or types of permit spaces identified.
  - Select a rescue team or service from those evaluated that:
    - Has the capability to reach the victim(s) within a timeframe that is appropriate for the permit space hazard(s) identified.
    - Is equipped for and proficient in performing the needed rescue services.
  - Inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site.
  - Provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.
- If site management designates onsite ERT to provide permit space rescue and emergency services, they shall take the following measures:
  - Provide affected employees with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train affected employees so they are proficient in the use of that PPE.
  - Train affected employees to perform assigned rescue duties. Management must ensure that such employees successfully complete the training required to establish proficiency as an authorized entrant.

- Train affected employees in basic first aid and cardiopulmonary resuscitation (CPR). Management shall ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available.
  - Ensure that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces.

#### NOTE

Representative permit spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

- Ensure rescue training complies with the Generation Technical Rescue Training Standard Operating Guidelines.
- To facilitate non-entry rescue, retrieval systems or methods shall be used when an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:
  - Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which the employer can establish. The chest or full body harness shall present a profile small enough for the successful removal of the entrant. Wristlets may be used in lieu of the chest or full body harness if the employer can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
  - The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical-type permit spaces more than 5 ft deep.
- If an injured entrant is exposed to a substance for which a material safety data sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information shall be made available to the medical facility treating the exposed entrant.

## 4.0 REQUIREMENTS

### 4.1 Site Inventory List

A list of all confined spaces shall be maintained by the generating facility and made available to facility employees.



## 4.2 Confined Space Warning Signs

All confined spaces shall have warning signs posted at all confined space points of entry. One sign can be used for multiple doors when the intention is obvious.



## 4.3 Site-Specific Instructions

A generating facility may implement site-specific instructions that supplement but do not replace this procedure.

## 4.4 Employee Training

All employees whose jobs involve responsibilities associated with confined spaces shall be initially trained so they shall have the understanding, knowledge, and skills necessary for working safely in confined spaces. Employee retraining is required when an employee fails to demonstrate knowledge/skills necessary to properly enter a confined space. Annual confined space awareness training is required for designated employees.

## 4.5 Contractor Requirements for Permit-Required Confined Space Entry

When a facility arranges to have a contractor perform work that involves permit-required confined space entry work, it is the responsibility of the company site contract coordinator to:

- Ensure the contractor coordinates all entries with the Generation employee responsible for the work.
- Inform the contractor that the workplace contains permit-required confined spaces and entry will be allowed only through compliance with the contractor's confined space program that meets the requirements of OSHA 1910.146.
- Apprise the contractor of the confined space conditions, including the serious hazards identified and previous experience in the spaces that make it a permit-required confined space.

- Apprise the contractor of any precautions or programs, such as signage, that the facility has implemented for the protection of employees in or near the permit-required confined space where contract personnel will be working.
- When both company employees and contract personnel will be working in or near permit-required confined spaces, coordinate entry operations with the contractor so that employees of one company do not endanger the employees of the other.
- Debrief the contractor at the conclusion of the entry operations regarding the permit-required confined space program followed and regarding any serious hazards confronted or created in the space.

#### **4.6 Annual Review**

The site specific confined space procedure shall be reviewed annually by the site.

#### **4.7 Entry Permit/Reclassification Form**

The Southern Company Generation Entry Permit/Reclassification Form shall be completed prior to entry into a confined space. Cancelled entry permit/reclassification forms shall be retained for 1 year; see 6.0, Quality Records.

A tracking system that documents entry permit/reclassification forms that are approved or cancelled shall be maintained by the generating facility.

The entry permit/reclassification form shall be available to all authorized entrants:

- For permitted spaces, the permit/reclassification form shall be posted at the primary point of entry.
- For reclassified spaces, a green reclassification tag shall be posted at each point of entry to the confined space.
- For spaces entered using the alternate procedure, a yellow reclassification tag shall be posted at each point of entry. See 4.10, Permit-Required Confined Space Entered Using Alternate Procedure.
- Ensure that reclassification tags are posted at all points opened and used for personnel access, or post an attendant. If an attendant is used in lieu of a tag, they shall comply with all duties of an attendant for a PRCS with the exception of logging entrants in and out.

#### **4.8 Atmospheric Testing**

Initial atmospheric testing is required prior to entry into a confined space. Depending on the activities or conditions in a confined space, additional atmospheric testing may be required.

The generating facility shall train appropriate personnel to perform atmospheric tests using the gas monitoring instruments provided by the facility.

All monitors shall be calibrated and bump-tested in accordance with the equipment manufacturer's recommendation. Calibration results for each monitor shall be documented and maintained for 1 year. See 6.0, Quality Records.

#### **4.8.1 Initial Atmospheric Testing Requirements**

This section establishes company requirements concerning the testing of confined spaces to ensure that no hazardous atmosphere exists before allowing personnel to enter.

When a confined space is to be entered, the atmosphere shall be tested before allowing personnel to enter the space. The test equipment must consist of direct reading gas monitoring instruments. The individual performing the test shall enter all required information on the entry permit/reclassification form.

- The confined space shall be opened and ventilated/purged, as necessary.
- The atmospheric test shall be performed by a qualified individual. Any portable forced ventilation of the confined space shall be stopped prior to performing an initial atmospheric test.
- When conducting the initial test, check for (in the order listed):
  1. Oxygen content. (Between 19.5 – 23.5)
  2. Flammable gases and vapors. (<10% LEL)
  3. Potential toxic air contaminants. (Use the appropriate levels for the potential contaminant being tested for)
- The initial tests shall be made prior to entry of the space through any opening in the space (such as boiler door and observation doors) without the testing personnel entering the space.
- Any employee authorized to enter a space, or that employee's authorized representative, shall be provided the opportunity to observe any atmospheric testing done for the space in which they are entering.
- After the atmospheric test is complete, fill in the requested information on an entry permit/reclassification form.

If the confined space is classified as a nonpermit-required space, the entry supervisor shall complete the Reclassification section of the entry permit/reclassification form. He or she shall ensure that reclassification tags are posted at all points opened and used for personnel access covered by the atmospheric test, or post an attendant. Only these points of entry may be entered. If an attendant is used in lieu of a tag, they shall comply with all duties of an attendant for a PRCS with the exception of logging entrants in and out.

#### **4.8.2 Additional Atmospheric Testing Requirements**

If entrants are present in any confined space and atmospheric hazards that could reasonably be expected to cause the space to become a permit-required confined space are introduced, continuous monitoring is required.

#### **4.9 Reclassification of Permit-Required Confined Spaces**

A permit-required confined space can be reclassified to a nonpermit-required confined space provided that:

- All related equipment and systems have been properly isolated and cleared.
- Follow all clearance procedures required prior to entry.
- Testing and inspection results indicating that all serious hazards in the permit-required confined space have been eliminated shall be documented on the entry permit/reclassification form.
- If it is necessary to enter the permit-required confined space to eliminate the serious hazards, all requirements of permit-required confined space entry apply until the serious hazards are eliminated.
- A reclassification tag is posted at all points opened and used for personnel access covered by the atmospheric test or an attendant is present.
- If hazardous changes to a reclassified space occur that endanger the entrants, the confined space shall be immediately evacuated and the confined space reevaluated.

A green reclassification tag shall be completed and posted at the nonpermit-required space. The green tag indicates that all potential serious hazards in the space have been eliminated and the space is safe for authorized personnel entry.

#### **4.10 Permit-Required Confined Space Entered Using Alternate Procedure**

A permit-required confined space may be entered using the Alternate Procedure provided that:

- The only serious hazard or potential serious hazard in the space is atmospheric.
- It can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space for safe entry.
- The mechanical ventilation used is from a clean air source and is in place prior to entry.
- Periodic atmospheric monitoring is in place.

- The entry permit/reclassification form is completed and indicates the space is entered using the Alternate Procedure.

A yellow reclassification tag shall be completed and posted at the space using the Alternate Procedure. The yellow tag indicates that the hazardous atmosphere has been eliminated through mechanical ventilation and periodic air monitoring is required to verify the space is safe for personnel entry.

The atmosphere within the permit-required confined space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. The results must be recorded. If a hazardous atmosphere is detected during entry:

- Each employee shall leave the space immediately.
- The space shall be evaluated to determine how the hazardous atmosphere developed.
- Action shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

As applicable, each reclassification tag shall have the corresponding number from the entry permit/reclassification form that identifies the confined space, the entry supervisor, and the date reclassified.

#### **4.11 Reclassification Tag Removal**

Reclassification tags shall be removed when the work has been completed or when conditions in the space have become unsafe.

When work is completed or when the space has become unsafe for entry, the entry supervisor shall be contacted and shall be responsible for seeing that all of the reclassification tags are removed from entrances. A confined space entrance cannot be closed until the entry supervisor has been notified and he or she verifies that the reclassification tags have been removed. This process shall be accomplished as follows:

- The entry supervisor shall confirm that all personnel, lighting, tools, and so forth, have been removed from the space and notify the party who issued the clearance/ subclearance.
- The entry supervisor shall ensure the removal of the reclassification tags, account for all of the tags, and ensure each reclassification tag number corresponds with the entry permit/reclassification form number. The entry supervisor shall sign at the bottom of the confined space entry permit/reclassification form indicating that it has been cancelled. This action shall also be documented in the log book.
- If the entry supervisor is not available, the facility manager or his or her designee can perform this operation.

## **5.0 KEY CONTACT**

For questions regarding the content and implementation of the confined space program, contact your safety and health representative.

## **6.0 QUALITY RECORDS**

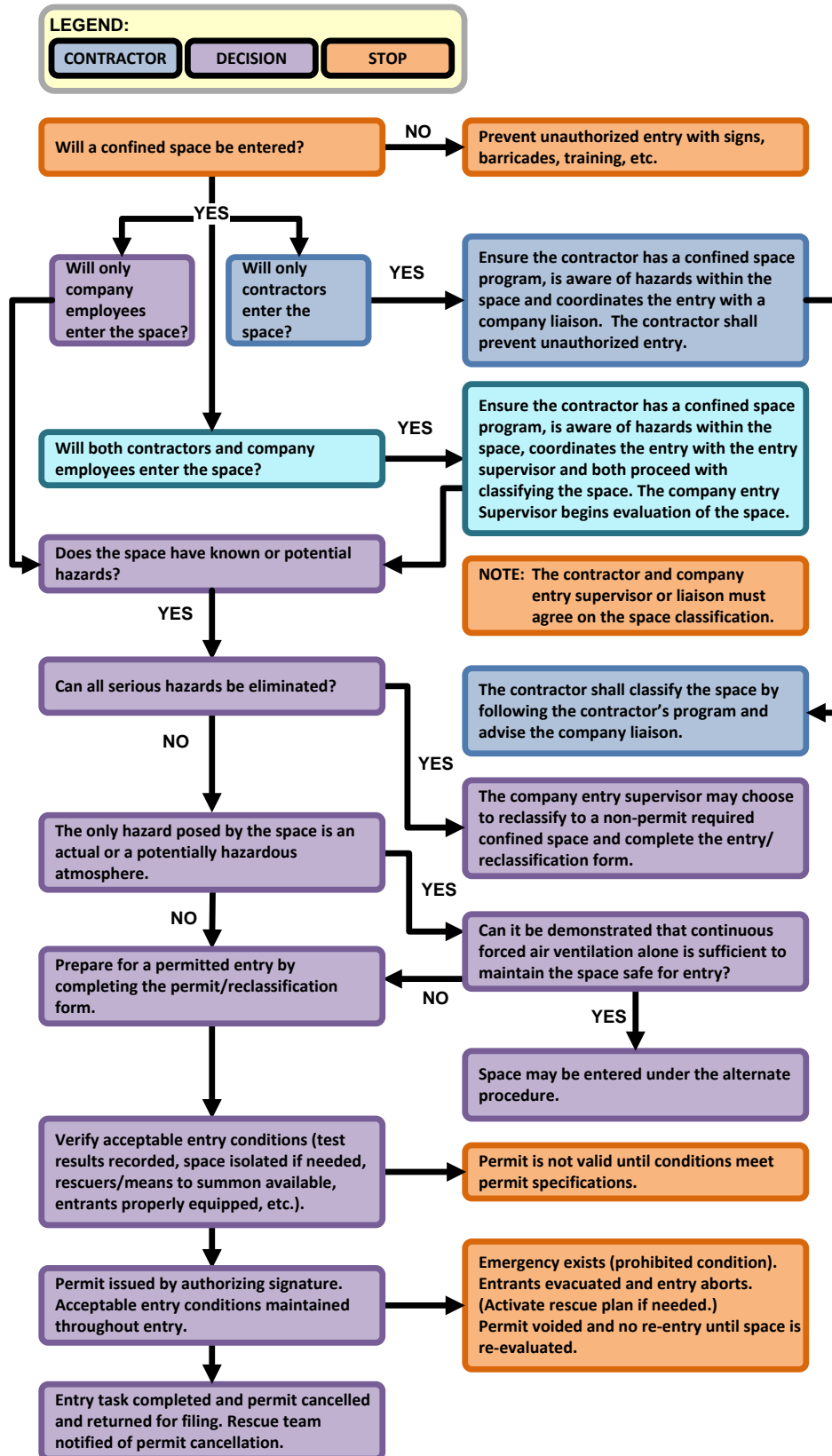
### **6.1 Record Retention**

- Generating facilities shall retain the following corporate records for 1 year (Southern Company Records Management record series code RSK.01.09 Safety Inspection – Conventional; Office of Record: O/R105-Safety & Health - Subsidiary / Business Unit / Plant Site):
  - Cancelled Generation Confined Space Entry Permit/Reclassification Forms (see 4.7, Entry Permit/Reclassification Form).
  - Calibration results for gas monitoring instruments (see 4.8, Atmospheric Testing).
  - Completed Confined Space Logs (see 4.7, Entry Permit/Reclassification Form).
- Reclassification tags are excluded from the record retention requirement.

## **7.0 ATTACHMENTS**

- Attachment 1, Confined Space Entry Flowchart.
- Attachment 2, Completing a Generation Confined Space Permit/Reclassification Form.

### Attachment 1 – Confined Space Entry Flowchart



## Attachment 2 – Completing a Generation Confined Space Permit/Reclassification Form

The entry supervisor or his or her designee shall obtain and fill out the Generation Confined Space Permit/Reclassification form and appropriate tags. To obtain and complete a confined space entry permit/reclassification form and tags:

Responsible party	Action
<b>Step 1 – Form Information</b>	
Entry supervisor	<ul style="list-style-type: none"> <li>• Obtain a Generation Confined Space Entry Permit/Reclassification Form from your site's designated area. If the permit/reclassification form is not prenumbered or the permit number cannot be determined, contact the compliance specialist.</li> <li>• On the permit/reclassification form, enter the:                             <ul style="list-style-type: none"> <li>- Permit number.</li> <li>- Unit number.</li> <li>- Confined space to be entered.</li> <li>- Entry supervisor's name (printed).</li> <li>- Detailed purpose of entry.</li> </ul> </li> <li>• Obtain the confined space log from your site's designated area.</li> <li>• On the confined space log, enter the:                             <ul style="list-style-type: none"> <li>- Permit number.</li> <li>- Unit number.</li> <li>- Confined space location.</li> <li>- Entry supervisor name (printed).</li> </ul> </li> </ul>
<b>Step 2 – Atmospheric Monitoring Data and Additional Items</b>	
Entry supervisor or designee	<ul style="list-style-type: none"> <li>• On the entry permit/reclassification form, enter the atmospheric monitor data:                             <ul style="list-style-type: none"> <li>- Model/serial number.</li> <li>- Calibration date.</li> <li>- The name of the person who performed the daily bump test.</li> </ul> </li> <li>• Perform the atmospheric test with a monitor with the appropriate sensors.</li> <li>• The permit/ reclassification form should be modified to list all "Other Toxic Gases" being tested for.</li> <li>• Record the date and time, test result, and initials of the person performing the atmospheric test. If needed, use the Atmospheric Monitoring Data (Addendum) sheet to record additional tests.</li> <li>• Answer the additional items questions.</li> </ul>
<b>Step 3 – Potential Hazards in the Space</b>	
Entry supervisor	<ul style="list-style-type: none"> <li>• Based on the data in step 2, mark the appropriate YES/NO answers for:                             <ul style="list-style-type: none"> <li>- Hazardous atmosphere potential.</li> <li>- Engulfing potential.</li> <li>- Configuration potentially hazardous.</li> <li>- Other serious safety or health hazards.</li> </ul> </li> <li>• If there are any YES answers, explain the measures taken to eliminate or control the hazard.</li> <li>• If there are hazards that cannot be eliminated or controlled, the space must be permitted or worked using the Alternate Procedure. (Whichever is appropriate.)</li> </ul>
<b>Step 4 – Classifying the Space</b>	
Entry supervisor	Determine how the space can be worked and check the appropriate box on the form: <ul style="list-style-type: none"> <li>• Reclassified/non-permit space.</li> <li>• Alternate procedure space.</li> <li>• Permit-required confined space.</li> </ul>



Responsible party	Action	
	If the space is to be worked as a ...	Take this action...
Entry supervisor	Reclassified/nonpermit space	In the Entry Supervisor, Reclassification Approved block: <ul style="list-style-type: none"> <li>• Sign the form.</li> <li>• Enter the date and time.</li> <li>• Complete and hang a green tag at each point of entry.</li> <li>• Enter the number of tags applied.</li> </ul>
	Alternate procedure space	In the Entry Supervisor, Reclassification Approved block: <ul style="list-style-type: none"> <li>• Sign the form.</li> <li>• Enter the date and time.</li> <li>• Complete and hang a yellow tag at each point of entry.</li> <li>• Enter the number of tags applied.</li> </ul>
	Permit-required confined space	Skip the reclassification signatures, check the box titled <i>A permit-required confined space</i> , and go to step 5 (back of form).
Entry supervisor	When cancelling or terminating the entry of a reclassified space: <ul style="list-style-type: none"> <li>• Ensure the tags are removed.</li> <li>• On the permit/reclassification form in the Reclassification Cancelled block:                             <ul style="list-style-type: none"> <li>- Sign the form.</li> <li>- Enter the date and time.</li> <li>- Enter the number of tags removed.</li> </ul> </li> <li>• On the confined space log:                             <ul style="list-style-type: none"> <li>- Complete the information.</li> <li>- Enter the date and time cancelled.</li> </ul> </li> <li>- Return the cancelled Permit/Reclassification Form to the appropriate location.</li> </ul>	
<b>Step 5 – Rescue Action Items</b>		
Entry supervisor	Ensure that: <ul style="list-style-type: none"> <li>• The Confined Space Rescue Team has been established and notified.</li> <li>• The rescue team member in charge (RTMIC) has been notified and a means of communication has been agreed upon. Fill in the radio/phone number.</li> <li>• The communication procedures are established for entrants and the attendant.</li> <li>• The RTMIC has completed the pre-entry rescue plan.</li> </ul>	
<b>Step 6 – Permitted Space Approval, Transfer Signatures, Entrants, Attendants and Cancellation of Permit</b>		
Entry supervisor	<ul style="list-style-type: none"> <li>• After the requirements of the entry permit have been met, approve the entry by signing and entering the date and time.                             <ul style="list-style-type: none"> <li>- When the space is being entered as permit-required confined space, post the permit at all open doors used for entry to the space. The permit shall remain there for the duration of the job.</li> </ul> </li> <li>• On the confined space log:                             <ul style="list-style-type: none"> <li>- Complete the information.</li> <li>- Put an "X" in the Permit Space and the date and time approved.</li> </ul> </li> </ul>	
Attendant	<ul style="list-style-type: none"> <li>• Enter his or her name and the time he or she began monitoring the space and the time he or she stopped monitoring the space.</li> <li>• Each new attendant shall enter his or her name and the time he or she began monitoring the space and the time he or she stopped monitoring the space.</li> <li>• Enter the name of each authorized entrant on the permit as the entrant enters the space. Enter the time in/out each time the entrant enters or exits the space.</li> </ul>	
Entry supervisor	If the entry supervisor must transfer duties, the new entry supervisor must sign and enter the date and time of transfer.	

Responsible party	Action
Entry supervisor	Upon completion of the work in the confined space, ensure all personnel are accounted for and all permit/reclassification forms are removed.
	When cancelling or terminating the entry of a permitted space: <ul style="list-style-type: none"><li>• Obtain the appropriate confined space entry permit/reclassification form and confined space log.</li><li>• On the permit/reclassification form:<ul style="list-style-type: none"><li>- Enter the date and time the permit was cancelled.</li><li>- Sign the permit/reclassification form cancelled block.</li></ul></li><li>• On the confined space log:<ul style="list-style-type: none"><li>- Complete the information for the entry by writing in time and date cancelled.</li></ul></li><li>• Return the cancelled permit/reclassification form to the appropriate location.</li></ul>

NOTE



The Atmospheric Monitoring Data (Addendum) sheet can be used for recording additional air monitoring data during a Permit Required Confined Space entry or using the Alternate Procedure.



## Southern Company Generation

### SCG-SH-0201

# LOCKOUT/TAGOUT (LOTO) PROCEDURE

<b>Revision</b>	<b>Approval Date</b>	<b>Approved by</b>	<b>Title</b>
0	June 9, 2016		Executive Vice President and Chief Production Officer
1*	January 1, 2018		Executive Vice President and Chief Production Officer

\*Updated 12/05/2022

## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS AND REFERENCES .....	4
2.1	Definitions .....	4
2.2	References .....	11
3.0	RESPONSIBILITY .....	12
3.1	Plant Manager .....	12
3.2	Operating Area Manager .....	12
3.3	LOTO Administrator .....	12
3.4	Authorized List Administrator .....	12
3.5	Requestors .....	13
3.6	Operating Area Leader (OAL) .....	13
3.7	Primary Authorized Employee (PAE) .....	14
3.8	Operating Area Authorized Employee (OAAE) .....	14
3.9	Verifier .....	15
3.10	LOTO Holder .....	15
3.11	LOTO Coordinator .....	16
3.12	Non-Listed Worker .....	17
4.0	PROCEDURE .....	18
4.1	Routine Lockout/Tagout (LOTO) .....	18
4.2	Simple LOTO .....	18
4.3	Develop LOTO Record .....	19
4.4	Isolate Equipment .....	21
4.5	Verify Isolation .....	24
4.6	Perform Work .....	26
4.7	Maintenance Release .....	28
4.8	Work Completed .....	29
4.9	Release LOTO .....	31
4.10	Suspend Work .....	32
4.11	Testing .....	32
4.12	Modify Boundary .....	34
4.13	Non-Listed/Visitor Lock .....	35
4.14	Lock Emergency Removal .....	36
5.0	TRAINING .....	37
5.1	LOTO Awareness Training .....	37
5.2	Authorized Worker Training .....	37
5.3	Department Training and Proficiency Requirements .....	38
5.4	Authorized List .....	39
6.0	PROCEDURE REVIEW .....	39
6.1	LOTO Periodic Inspection .....	39
6.2	Facility Active LOTO Review .....	40
7.0	KEY CONTACT .....	40
8.0	QUALITY RECORDS .....	41
9.0	ATTACHMENTS .....	41

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure establishes a program, consisting of energy control, employee training, and periodic inspections, to ensure that before any worker performs any servicing or maintenance on equipment where the unexpected energizing, startup, or release of stored energy could occur and cause injury, the equipment is isolated from the energy source and rendered inoperative.

NOTE: Failure to follow directives outlined in this procedure is considered sufficient cause for disciplinary action, up to and including discharge.

### 1.2 Scope

This procedure applies to all persons (employees and contractors) working on equipment under the control and operation of Southern Company Generation facilities.

This procedure does not supersede procedures established for the orderly shutdown of equipment. Those procedures must be followed to avoid any additional or increased hazard(s) to employees because of the equipment stoppage.

NOTE: This procedure does not apply to the following:

- Electrical energy sources less than 50 V.
- Work on cord- and plug-connected equipment, where exposure to the hazards of unexpected energizing or startup of the equipment is controlled by unplugging the equipment from the energy source, and the plug is under the exclusive control of the individual performing the service or maintenance.
- Minor servicing, which includes performing simple adjustments to ensure equipment is functioning properly (without having to disassemble the component being adjusted and/or expose an employee to a hazardous energy source).
- Work that does not involve plant-controlled equipment such as:
  - Equipment under the exclusive control of Transmission or Distribution.
  - Equipment identified as new construction that is under the exclusive control of T&PS Projects and has not been connected to the facility.

Generating facilities may develop site-specific procedures to supplement this procedure. Site-specific procedures do not replace material covered in this procedure.

When external maintenance or servicing personnel will be engaged in activities covered by the scope of this procedure, the authorized representatives of the Company and the contractors shall provide and coordinate their respective lockout or tagout procedures.

Details of the LOTO program will be covered as part of the Contractor Orientation Checklist. Southern Company LOTO Awareness Training is available under “Safety Orientation Requirements for Generation Contractors” at the following link: <https://www.southerncompany.com/about/suppliers/generating-plant-requirements.html>. It is the responsibility of each outside servicing employer to train and document their employees in the requirements of this procedure prior to the start of work.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**active LOTO** – A LOTO that has been issued, executed, and has an operating area lock (orange) secured to a master lockbox indicating the associated equipment is isolated and ready for service or maintenance activity.

**active LOTO file** – A designated file or location, such as master lockbox, that holds all LOTO records that have been issued and are considered to be active.

**affected employee** – Employee that is affected by a lockout, which means their work involves the equipment that is being locked out and their job will be affected during the lockout. An affected employee is not authorized to lockout equipment.

**authorized employee** – Employee who has had proper training on equipment isolation and the associated hazards and is allowed to use lockout devices. An authorized employee can be an affected employee.

Authorized employees are qualified by training and evaluation in the Southern Company Generation LOTO procedure in the following categories:

- LOTO Holder – A qualified employee/worker who may request LOTO and/or perform work on equipment or systems held by LOTO.
- LOTO Coordinator – A qualified employee/worker who may request LOTO and/or coordinate work on equipment or systems held by LOTO for non-listed workers or other authorized workers.
- Operating Area Authorized Employee (OAAE) – A person who can lockout or tagout equipment when servicing and/or maintenance is performed by crew, craft, department, or other group. An Operating Area Authorized Employee can perform the following duties:
  - Develop LOTO records.
  - Execute/verify LOTO records.
- Operating Area Leader (OAL) – A person who has primary responsibility for a set number of employees working under the protection of a group lockout device (operating area lock (orange)); has the knowledge and authority to determine if a requested piece of equipment can be taken out of service

based on operational conditions, personnel, unit commitments, worker and equipment safety, and any other factors that may impact system reliability; has been qualified to perform all roles of the OAAE; and has the authority to perform the following duties:

- Accept requests.
- Approve/reject requests.
- Approve LOTO records.
- Issue isolation/release LOTO records.
- Approve boundary modifications.
- Activate LOTO records.
- Complete LOTO records.
- Serve as primary authorized employee, as required (see 3.7, Primary Authorized Employee (PAE)).

NOTE: Operating Area Leader and Operating Area Authorized Employee roles must be independently selected in COOL Compliance to grant permissions within SafeTK.

**authorized list** – Roster maintained for the facility that identifies authorized workers by name and type of LOTO activity(ies) each worker is permitted to perform. Inclusion on the authorized list is determined at the discretion of the facility's management as approved in Cool Compliance.

**capable of being locked out** – Energy isolating device capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

**designated operating area (DOA)** – Area or department of the facility that has the exclusive control of issuing and executing LOTO in their specific area. Examples of designated operating areas:

- Operations.
- Fuels.
- Laboratory.
- Environmental.
- Individual hydro plants.
- Combustion turbine plants.
- Combined cycle plants.
- Solar plants.

**energy isolating device** – A device that physically prevents the transmission or release of energy, including but not limited to the following: an electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy.

NOTE: Push buttons, selector switches, and other control circuit type devices are not energy isolating devices. See attachment B, Example LOTO Tag, for an example of an Operational Control Tag when control devices require exclusive control of the operating area.

**energy source** – Any source of electrical (50 V or greater), mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, or other energy.

**hasp** – A device that allows energy isolating devices to be locked with multiple locks.

**isolate** – Removal of all sources of energy from the equipment to be worked on.

**isolation test** – The method used to ensure all stored energy sources cannot create the potential for injury or accident while servicing or maintenance is being performed on the equipment. The test method is documented on the LOTO Record, as follows:

- Visual – A visual inspection to ensure an air gap exists or an installed voltage indicator determines absence of energy between energy sources and isolation devices.
- Test equipment – Use of instrumentation to verify electrical energy sources are isolated. Voltage meters and noncontact voltage detectors that alarm in the proximity of voltage applications are acceptable, based on the skills and training of the qualified person. All devices must be properly rated for voltage.

NOTE: Proximity meters are not acceptable for shielded cables. DC circuits and shielded cables must be tested at termination points.

- Test/try – Test performed by attempting to operate a piece of equipment either remotely or locally to ensure the equipment will not operate.
- Drain/depressurize – Verification that a system or component is drained, depressurized, and safe for work.

**issued LOTO** – LOTO record identified in the software (SafeTK) as in-progress by the OAL while the OAAE performs steps to isolate equipment for upcoming service or maintenance activities.

**lockbox** – Box with multiple locking points in which the key(s) to the lockout device(s) are placed and secured by authorized employees. Lockboxes are red or yellow, based on the following criteria:

- Master lockbox – Red lockbox in which key(s) to red isolation locks are placed and secured by an operating area lock (orange). LOTO holders secure locks (individual (blue)/coordinator (green)) after the operating area lock (orange) is secured, to hold the LOTO for service or maintenance activity. The original completed LOTO documentation (LOTO records,



LOTO test records, and so forth) shall be maintained in an active LOTO file, and the LOTO cover sheet is attached to the master lockbox (red).

- **Satellite lockbox** – Yellow lockbox that is an extension of the master lockbox (red). It may be located remotely in an area that provides convenient access for workers while under the exclusive control of the LOTO Coordinator. One or more satellite lock(s) (yellow) will be used in conjunction with the satellite box and is secured to the master lockbox; the associated key is secured in the satellite box with a coordinator lock. A copy of the LOTO documentation (LOTO records, LOTO test records, and so forth) is attached to the satellite lockbox.

**lockout** – Placement of a lockout device on an energy isolating device, in accordance with an established procedure, to ensure the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

**lockout device** – Device that employs a positive means (lock and key) to hold an energy isolating device in the safe position and prevent the energizing of equipment. See attachment A, Example Lockout Devices, for an example of lockout devices. Southern Company Generation approved lockout devices include the following:

- **Isolation lock** – Red in color, used to secure energy isolation devices. Always secured with an attached tagout device.
- **Operating area lock** – Orange in color, used for operating area continuity; indicates equipment has been isolated per the LOTO record. Operating area locks are always the first lock on and last lock off to ensure continuity of the active LOTO and the position of isolation devices have not been altered. No other lock shall be placed on the master lockbox without an operating area lock previously installed.
- **Individual lock** – Blue in color, assigned to individuals for their personal protection while performing work under a LOTO. Individuals are assigned five locks for this purpose. Individual locks must display worker name and contact number.
- **Coordinator lock** – Green in color, used by departments to coordinate multiple work crews, ensure the continuity and integrity of an active LOTO for the protection of other workers. Coordinator locks are issued and controlled as approved by plant management, as required for each department. Requires an attached LOTO information tag.
- **Satellite lock** – Yellow in color, used to maintain continuity while a satellite lockbox is in use. Satellite locks are assigned to a corresponding satellite lockbox. Requires an attached LOTO information tag.
- **Non-listed/visitor lock** – Brown in color, used for non-listed workers to enable them to perform service or maintenance under the protection of a LOTO. Only used at the direction of a LOTO coordinator and after a coordinator lock (green) is secured. Non-listed/visitor locks are issued for temporary use at

the discretion of plant management. Requires an attached LOTO information tag.

- Contractor lock – Lock provided by contractors for adherence to the Southern Company LOTO procedure and protection of their employees. All contractor personal protective locks shall be individually keyed and individually assigned to that worker.

When securing to Southern Company lockout devices, contractor locks shall adhere to the following:

- Contain worker's name, contact number, and company.
- Not be manufactured by American Lock.
- Shall be silver, gray, or black in color.

**lockout/tagout (LOTO)** – A safety procedure used to ensure equipment is properly shut off and not able to be started up until the completion of maintenance or service work. It requires hazardous energy sources to be "isolated and rendered inoperative" before work is started on the equipment in question. Lockout/tagout can be accomplished in the following ways:

- Group LOTO – A LOTO executed by authorized workers within a designated operating area for other workers requesting to perform service or maintenance work on equipment.
- Simple LOTO – A LOTO executed by authorized workers where personal protection locks are applied directly to isolation devices when the below criteria are followed:
  - Workers have knowledge, training, skills, tools, and time to perform work safely.
  - Scope of work is of short duration (can be completed in one shift).
  - Isolation steps include five or fewer isolation devices.
  - Scope of work has no special conditions such as confined space, grounding, hydrogen, natural gas, or process safety management chemicals.
  - Parts are readily available.
  - Facility has defined acceptable equipment or type of equipment in site-specific procedures.
  - Permission of the designated operating area (DOA) to proceed exists.
  - Approved documented procedural steps exist and must be followed.

NOTE: Procedural steps are not required if the equipment has a single energy source that can be readily identified, isolated, and verified, and no prior accidents exist involving the unexpected activation or re-energization of equipment during service or maintenance.

**LOTO administrator** – Individual responsible for administration of the LOTO software. Each facility has LOTO administrator(s), who administer responsibilities, approve standards, and perform other local functions. There is also a corporate LOTO administrator who is responsible for the overall administration and configuration of the LOTO software across all Southern Company Generation facilities.

**LOTO boundary** – Energy isolating devices required for a designated scope of work.

**LOTO information tag** – Tag that identifies the responsible person using a lockout device. Each tag is secured via the lock shackle and, at a minimum, contains the worker's name and contact number. See attachment B, Example LOTO Tag, for an example of a LOTO information tag.

**LOTO record** – Instructional checklist of energy isolating devices needed for a LOTO boundary, used to place and secure equipment in a desired isolation or service position.

**minor servicing** – The act of performing simple adjustments to ensure equipment is functioning properly (without having to disassemble the component being adjusted and/or expose an employee to a hazardous energy source).

**non-listed worker** – Person performing service or maintenance under the direction of a LOTO coordinator and who is not included on the facility's authorized list. These individuals may be unfamiliar with the equipment or lack the necessary experience or training to individually hold LOTO.

A non-listed worker may perform work under LOTO at the request of the LOTO coordinator in either of the following two ways:

- Individual accountability – By securing directly to an approved Southern Company LOTO device with the permission of the LOTO coordinator.
  - All non-listed workers shall secure a personal protective lock directly to the LOTO device. Under this system, a Southern Company LOTO coordinator shall be responsible for the non-listed group of individuals and assume responsibility for the accountability and notification of any changes to the LOTO.
  - Alternate accountability – A system where a contractor responsible person holds LOTO for other workers. This system can be used when approved by Southern Company plant management. The contractor responsible person, specified by the contractor, may be a contractor superintendent, crew foreman, project coordinator, or any other responsible individual associated with the group and shall be responsible for the following:
    - Communicating with all non-listed individuals who intend to work on plant equipment.

- Securing a lock designated as an alternate accountability responsible person device behind a coordinator lock on either the hasp or the satellite box.
- Ensuring each individual worker secures an individual personal protective lock to the appropriate lockout device per their employer's energy control program.
- Under this system, a Southern Company LOTO coordinator shall hold the LOTO for the contractor responsible person and provide them all information, including limitations and boundaries associated with the scope of work and LOTO record.

NOTE: Contractors shall maintain an effective energy control program of accountability using locks for personnel that meets all requirements set forth in 29 CFR 1910.269(d), 1910.147, and this procedure. Program shall demonstrate controlled means to remove individual worker's lockout devices when not at the facility. Prior to using alternate accountability, contractor shall submit their site-specific alternate accountability system to plant management for approval.

**normal production operations** – Use of equipment to perform its intended production function.

**personal protective lock** – Lockout device used for the protection of individuals performing work under a LOTO. Personal protective locks can be individual, non-listed/visitor, or contractor locks.

**qualified person** – Person who is competent, by their electrical knowledge and skills, to safely work on energized circuits. Competence includes the demonstration of proper use of precautionary techniques, personal protective equipment, insulating materials, voltage detection devices, and insulated tools.

NOTE: Third-party qualified persons shall be trained and qualified by their respective employer.

**requestor** – Employee/worker on the authorized list who has requested a LOTO to have scheduled service or maintenance activity performed on a piece of equipment.

**SafeTK** – Software used to manage, document, and track activities within the LOTO process. SafeTK is the official repository of LOTO documentation, including standards.

**servicing and/or maintenance** – Workplace activities such as constructing, installing, adjusting, inspecting, modifying, and servicing and/or maintaining equipment. These activities include lubrication, cleaning or unjamming of equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energizing or startup of the equipment or release of hazardous energy.

**standards** – LOTO records, grouped by equipment, developed, approved, and saved for recurring maintenance activities. Standards for each facility are approved by a LOTO administrator at that facility.

**system break** – The intentional opening of a pipe, line, or duct that is or has been carrying a flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

**tagout** – Placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed.

**tagout device** – Prominent warning device, securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed. See attachment B, Example LOTO Tag, for an example of a tagout device.

NOTE: When TPGs are installed as part of the LOTO record by the Southern Company Generation qualified person, two red tags shall be fastened to the TPGs. Where a lockout device(s) cannot be affixed directly to the energy isolating device, a tagout device shall be located as close as safely possible to the energy isolating device in a position obvious to anyone attempting to operate the device.

Where tagout devices are used to control isolation devices, additional means shall include the implementation of additional safety measures, such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energizing.

NOTE: Tagout devices without a lock shall only be used on isolation devices until a permanent means to hang a lock can be designed and installed.

**temporary protective ground (TPG)** – Device installed by a qualified person for the purpose of grounding electrical equipment previously energized at a voltage greater than 600 V.

**temporary protective ground (TPG) tags** – Orange tags affixed to grounds by a qualified third party to control the installation and removal of the grounds.

**worker** – Person performing service or maintenance under LOTO.

## 2.2 References

- Frequently Asked Questions (FAQ), SCG-SH-0201, Lockout/Tagout (LOTO) Procedure
- 29 CFR 1910.269, Electric power generation, transmission, and distribution

- 29 CFR 1910.147, The control of hazardous energy (lockout/tagout)
- SCG-SH-0230, Temporary Protective Grounds
- T&PS Engineering and Design standard D-11, Design Functional Tags and Descriptions

### **3.0 RESPONSIBILITY**

#### **3.1 Plant Manager**

The plant manager maintains overall responsibility for the administration of the LOTO program and is responsible for implementing and strictly enforcing this procedure. The plant manager or designee also has responsibility and control of all spare and backup keys issued for removing locks of other employees or departments.

#### **3.2 Operating Area Manager**

The operating area manager ensures the LOTO procedure is correctly administered by all designated operating area employees and they are following the LOTO procedure and performing their respective duties. The operating area manager also defines the process for assigning a single designated primary authorized employee per shift.

#### **3.3 LOTO Administrator**

There are LOTO administrators for each facility, appointed by management, responsible for the following:

- Reviewing and approving standards at a facility.
- Interfacing with corporate LOTO administrators on software changes or improvements.
- Administration of LOTO training at a facility.

The corporate LOTO administrators will represent operating companies (Alabama Power, Georgia Power, Mississippi Power, and Southern Power) and are responsible for the following:

- Administration of the LOTO software across the Southern Company Generation facilities.
- Gathering input on software changes or improvements.

The Southern Company Generation corporate LOTO administrator is the primary interface with the LOTO software provider and coordinates changes or improvements.

#### **3.4 Authorized List Administrator**

The authorized list administrator is designated by the plant manager and is responsible for approving or denying permission requests for the plant's authorized list through COOL Compliance.

### 3.5 Requestors

The requestor collaborates with the operating area leader (OAL) to ensure the LOTO request record is appropriate for the work to be performed. The requestor works with the OAL to complete the LOTO request record. The LOTO request record populates the LOTO information section of the LOTO record and notifies affected workers of scheduled service or maintenance activity. The requestor is responsible for the following:

- Determining what equipment requires isolation for the purpose of servicing for maintenance activity.
- Reviewing with the OAL all applicable scopes of work, work orders, electrical or mechanical prints, and/or other relevant documents to ensure all energy isolations are properly identified.
- Confirming, in collaboration with the OAL, mutual understanding and agreement on energy isolation points are achieved.

### 3.6 Operating Area Leader (OAL)

The operating area leader (OAL) is identified as the person with authority to perform specific roles in the LOTO process. The OAL may be a supervisor, operator, or other designee as defined by management, and is responsible for the following:

- Implementing the LOTO procedure.
- Reviewing and understanding the LOTO Request Record.
- Ensuring the operating area (unit) can support and approves the request for LOTO.
- Developing or assigning an OAAE to develop the LOTO isolation record.
- Create standards for approval by the local LOTO administrator.
- Ensure the proper LOTO boundaries are established through reviewing scope and type of work, performing system walk-downs, reviewing drawings, and ensuring the proper positioning of devices.
- Ensuring the LOTO record is appropriate for the scope of work and is completed before initiating the isolation process.
- Approving selected LOTO records.
- Assigning OAAE and issuing the LOTO record to execute.
- Resolving any LOTO boundary issues.
- Reviewing the completed LOTO record for accuracy and completeness.
- Authorizing placement or removal of third-party grounds. Tracking (SafeTK), issuing, and collecting TPG tags (orange).
- Ensuring all locking devices are accounted for and the number of locks/tags matches the number of entries on the LOTO record.
- Assigning a verifier to walk down and verify the execution of the LOTO record.

- Activating the LOTO by ensuring all isolation keys are placed inside the master lockbox and are secured with an operating area lock.
- Activating the LOTO record (SafeTK).
- Notifying the requestor of an active LOTO.
- Controlling access to the master lockbox. Ensuring all LOTO holders have reviewed the LOTO information prior to locking on the appropriate lockbox or devices.
- Ensuring all locks are removed before any release for test, boundary reduction modification, or release.
- Removing the operating area lock on the master lockbox to support a release for test, boundary reduction modification, or final release.
- Assigning an OAAE to release the LOTO.
- Reviewing the completed LOTO documents and verifying the LOTO documents indicate the LOTO has been released and equipment is ready for operation.
- Completing the LOTO Record (SafeTK) and storing the completed LOTO documents per the record retention schedule.

### **3.7 Primary Authorized Employee (PAE)**

When workers are servicing or maintaining equipment under a group LOTO, a single primary authorized employee (PAE) is identified and documented in each designated operating area for every shift. Transfer of the PAE responsibilities may only be conducted during shift or personnel changes to ensure continuity. Responsibilities of the PAE include the following:

- Having overall job-associated lockout or tagout control responsibility when employees are working under the protection of a group lockout or tagout device(s).
- Coordinating affected work forces and ensuring continuity of protection.
- Providing oversight, ensuring the designated operating area follows provisions for each authorized employee to affix a personal lockout device to the group lockout device, group lockbox, or comparable mechanism, when he or she begins work, and ensuring they remove those devices when he or she stops working on the equipment being serviced or maintained.
- Ensuring the designated operating area follows procedure for orderly shutdown and startup of equipment.
- Identifying the PAE in the turnover log system for each designated operating area when turnover review has been completed and responsibility has been transferred.

### **3.8 Operating Area Authorized Employee (OAAE)**

The operating area authorized employee (OAAE) is identified as the person with authority to perform specific roles in the LOTO process. The OAAE may be an operator



or other designee as defined by management. The OAAE is responsible for the following:

- Developing a LOTO boundary on the LOTO record that is appropriate for the scope of work, eliminating hazardous energy.
- Reviewing the LOTO record with the OAL.
- Placing isolation locks, associated locking devices, and tags on the isolation component, in the proper sequence as outlined on the LOTO record.
- Ensuring the appropriate energy sources to equipment being worked on are properly isolated by a visual, test try, test equipment, or drain/depressurize method.
- Completing each line item on the LOTO record to document the device position and test method used.
- Removing the locking devices and restoring the equipment to the desired position as determined on the LOTO release record.
- Visually verifying personnel are not exposed to equipment before re-energizing equipment.
- Creating standards for approval by the LOTO administrator.

### 3.9 Verifier

The verifier validates (through review) completion of the LOTO. The verifier may not reposition or remove any lockout device placed on equipment.

The verifier is responsible for the following:

- Verifying each device listed on the LOTO record is correctly tagged and locked per the LOTO record and the *Test Method* section is complete.
- Initialing and signing required sections of the LOTO record.
- Notifying the OAL immediately when any devices are discovered in conflict with the LOTO record.

### 3.10 LOTO Holder

The LOTO holder is an authorized employee/worker who may request LOTO and/or perform work on equipment held by LOTO. The LOTO holder is responsible for the following:

- Before securing any lock to the lockbox, gaining permission of the designated operating area and ensuring an operating area lock (orange) is secured.
- Reviewing the LOTO information; knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device as required, using an individual lock (blue).

- Prior to starting work, verifying by walkdown the LOTO is adequate for the work being performed, and equipment is properly isolated and safe for the work he or she intends to perform.
- Before beginning a new shift, verifying the LOTO is still active.
- Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
- Not changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task.
- Immediately communicating any concerns noted with the LOTO boundaries or associated scope of work to the designated operating area.
- Immediately removing personal protective locks when work is complete and safe to return to service or suspended.
- Prior to removing an individual lock, ensuring a coordinator lock is secured if work is not complete and safe to return to service.

### **3.11 LOTO Coordinator**

The LOTO coordinator is an authorized employee/worker who may request LOTO and/or coordinate work on equipment held by LOTO workers. The LOTO coordinator is responsible for the following:

- Before securing any lock to the lockbox, gaining permission of the designated operating area and ensuring an operating area lock (orange) is secured.
- Reviewing the LOTO information; knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device as required, using a coordinator lock (green).
- Prior to starting work, verifying by walkdown the LOTO is adequate for the work being performed, and equipment is properly isolated and safe for the work he or she intends to perform.
- Before beginning a new shift, verifying the LOTO is still active.
- Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
- Changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task as authorized by Maintenance Release LOTO.
- Immediately communicating any concerns noted with the LOTO boundaries or associated scope of work to the designated operating area.
- Controlling access to the satellite lockbox. Providing information (including limitations and boundaries associated with the scope of work and LOTO record) to all workers performing service or maintenance under the coordinator lock (green).
- Managing the installation and removal of third-party TPGs.

- Working with the designated operating area to track the issue and return of TPG tags.
- Securing an individual lock prior to performing any maintenance, inspection, or service of equipment controlled by an active LOTO.
- Removing all locks immediately when work is complete or suspended.
- Completing a Coordinator Continuity Transfer Record prior to taking responsibility of a coordinator lock and either having full understanding of work scope status or obtaining permission of the current LOTO coordinator.
- Securing a coordinator lock and LOTO information tag before removing the prior coordinator lock.

NOTE: The LOTO coordinator attaches the Coordinator Continuity Transfer Record to the appropriate lockbox or active LOTO file for the duration of the work. At completion of work, the LOTO coordinator returns the record to the DOA, retaining per Southern Company Records Retention Schedule.

### 3.12 Non-Listed Worker

A non-listed worker is a worker performing service or maintenance under the direction of a LOTO coordinator. The non-listed worker shall be responsible for the following:

- Successfully completing LOTO awareness training.
- Knowing that equipment is not safe for performing service or maintenance unless a LOTO has been established and workers are locked on to the appropriate lockbox or device.
- Understanding their role in the LOTO procedure and implementing methods to ensure compliance with this procedure.
- Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
- Personally locking on and off the appropriate lockbox or device when required, but only after a coordinator lock (green) is secured. Only securing a personal protective lock to a hasp or yellow satellite box.
- Reviewing the LOTO information provided by the LOTO coordinator. Obtaining a copy of all requested LOTO documents.
- Knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device and performing work.
- Knowing they have the option, and are encouraged, to personally walk down the LOTO boundaries to ensure a safe work condition.
- Not changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task.

- Stopping work when any deficiencies of the LOTO are identified or when concerns are noted with the LOTO boundaries or associated scope of work and reporting immediately to the LOTO coordinator.
- Immediately removing personal protective locks when work is complete or suspended.

See *non-listed worker* definition for details on working under LOTO.

NOTE: Non-listed workers shall always secure personal protective locks on a hasp or yellow satellite box behind a coordinator lock (green). Non-listed workers shall not secure a lock directly to a master lockbox. Non-listed workers shall not secure a lock to any Southern Company LOTO device without the permission of the LOTO coordinator or additionally when a coordinator lock is not secured to that device.

## 4.0 PROCEDURE

### 4.1 Routine Lockout/Tagout (LOTO)

#### [Process Map](#)

Routine LOTO defines the overall process for isolating equipment for servicing and maintenance in which the unexpected energizing or startup of the equipment, or release of stored energy, could harm employees. This process establishes minimum performance requirements for the control of such hazardous energy.

NOTE: All LOTO records shall be created and issued via the SafeTK software. In the event of an unscheduled software outage, each facility shall manually create and issue temporary LOTO records until the software returns to service. An index shall be kept of each record using a sequential log number for the designated operating area. All fields on each LOTO record shall be completed to include device descriptions and device number. Associated temporary LOTO tags shall contain at minimum the log number and date. See attachment C, Example Temporary LOTO Records, for an example of temporary LOTO records.

Existing active LOTO records shall be completed and retained in a temporary folder until SafeTK records are updated and documents can be filed per the record retention schedule.

### 4.2 Simple LOTO

#### [Process Map](#)

Simple LOTO defines the process for applying individual locks directly to isolation devices by authorized workers to maintain local control of equipment under LOTO.

NOTE: If the work has not been completed and/or the equipment is not ready to be placed in service at the end of shift, or when the authorized employee leaves the facility, the OAL shall be contacted immediately and proceed to 4.3, Develop LOTO Record.

1. OAL selects the Simple LOTO record for the scope of work in software (SafeTK).
2. OAL assigns the authorized employee from the *LOTO Activated By* dropdown list (SafeTK) to execute the LOTO.
3. LOTO holder receives the LOTO simple record and executes according to the execution steps, then places devices in the isolation position, and installs individual locks (blue) and tags. Each step is installed to document execution.

*Proceed to 4.5, Verify Isolation.*

NOTE: When executing a Simple LOTO, the LOTO Holder performs the duties of the OAAE in the Verify Isolation process.

4. LOTO holder signs the simple LOTO record (in the LOTO Activated By field) to document execution of the LOTO steps.
5. LOTO holder performs prejob briefing.
6. LOTO holder performs maintenance activity.
7. LOTO holder determines if work is completed and equipment is safe to return to service.

*If yes, proceed to Step 8.*

*If no, proceed to 4.3, Develop LOTO Record.*

8. LOTO holder removes the locks from the isolation devices, positions, and initials each step according to the LOTO simple record (release).
9. LOTO holder signs the LOTO simple record (in the LOTO Released By field) to signify scope of work is complete and the equipment is released to Operations.
10. The OAL, along with the LOTO holder, reviews the returned documentation with the LOTO holder for completeness and ensures the proper number of tags has been returned.
11. OAL completes the LOTO (SafeTK) to document the simple LOTO is completed.
12. OAL files the original completed LOTO documents and retains per Southern Company Records Retention Schedule.

*End of process.*

### **4.3 Develop LOTO Record**

#### [Process Map](#)

Develop LOTO Record defines the process for requesting and developing LOTO records identifying procedural steps to develop, document, and control potentially hazardous energy when employees are engaged in service and maintenance activities.

Employees shall request LOTO when performing servicing and/or maintenance activity on equipment in which the unexpected energizing, startup, or release of stored energy from the equipment could cause injury to employees.

1. Requestor identifies equipment to be worked on.
2. Requestor submits a LOTO request record (SafeTK) to outline the scope of work and equipment to be isolated for servicing or maintenance.

NOTE: If maintenance release or simple LOTO is required, begin Reason for LOTO field with "Maintenance Release" or "Simple LOTO."

3. OAL, along with the requestor, reviews the request and scope of work to ensure understanding. (SafeTK)
4. OAL determines if the equipment can be removed from service without interrupting unit operation.

*If yes, proceed to Step 5.*

*If no, proceed to Step 20.*

5. OAL approves LOTO Request (SafeTK).
6. OAAE reviews the LOTO request record and defines the isolated boundaries to match the scope of work.
7. OAAE searches the LOTO standards in database to determine if a standard already exists.

*If yes, proceed to Step 8.*

*If no, proceed to Step 9.*

8. OAAE selects the standard (SafeTK) to match the scope of work.

NOTE: If Maintenance Release, use satellite box and assign at least two additional separately keyed isolation locks.

9. OAAE creates the LOTO record and saves (SafeTK).
10. OAAE modifies the LOTO record (SafeTK).

NOTE: Indicate isolations on LOTO Isolation Record that will be used for Maintenance Release.

11. OAL reviews the LOTO record (SafeTK) to confirm the isolation boundaries match the scope of work.
12. OAL determines if request is for Simple LOTO.

*If yes, proceed to 4.2, Simple LOTO.*

*If no, proceed to Step 13.*

13. OAL determines whether to approve the LOTO for execution.

*If yes, proceed to Step 14*

*If no, proceed to Step 6*

14. OAL selects an available lockbox (SafeTK).
15. OAL assigns the authorized employee selected from the LOTO Isolation Executed By dropdown list (SafeTK) to execute the LOTO.
16. OAL assigns the authorized employee selected from the LOTO Isolation Verified By dropdown list (SafeTK) to verify the LOTO.

NOTE: If using independent verification and the name of the authorized employee is not available, manually complete this section as assigned in the Isolate Equipment Process (Step 17).

17. OAL determines if a Maintenance Release is required.

*If yes, proceed to Step 18*

*If no, proceed to Step 19*

18. OAL issues two single locks for the isolation devices associated with the maintenance release.
19. OAL approves the LOTO (SafeTK) and prints the forms and tags (issues) for the LOTO.

*Proceed to 4.4, Isolate Equipment*

20. OAL notifies the requestor unit operations cannot support the request.

*End of Process*

#### **4.4 Isolate Equipment**

##### [Process Map](#)

Isolate Equipment defines the process for isolating (device positioning, locking, tagging, grounding, and so forth) equipment when servicing and/or maintenance is performed by a crew, craft, department or other group (Group LOTO). All hazardous energy sources shall be isolated in such a manner as to prevent their inadvertent activation. Only approved energy isolating devices specifically provided by the facility for the purpose of controlling hazardous energy shall be used. Operating Area Authorized Employees shall be responsible for isolating equipment per the LOTO record as issued by the Operating Area Leader.

NOTE: Southern Company Generation Qualified Persons shall install temporary protective grounds (TPGs) per the identified steps on the LOTO record. TPGs shall be secured at minimum with an isolation lock on the ground side of the cable and tagged on both sides of the ground with a danger tag.

1. OAL determines if the concurrent verification is to be used per site-specific procedure.

*If yes, proceed to Step 2.*

*If no, proceed to Step 3*

2. OAL assigns a verifier to go with the LOTO executor (SafeTK).
3. OAAE receives the LOTO record and executes according to the execution steps, then places devices in the isolation position, and installs locks and tags. Each step is initialed to document execution.

NOTE: If any device requires an isolation test to be performed prior to securing a lockout device, proceed to 4.5, Verify Isolation, prior to securing isolation lock and tagout devices.

*Proceed to 4.5, Verify Isolation.*

4. OAAE determines if internal grounds are required.

*If yes, proceed to Step 5.*

*If no, proceed to Step 8.*

5. OAL requests a qualified person to install internal grounds.
6. Prior to installing the grounds, the qualified person performs a walkdown and tests the conductor to verify absence of energy.

NOTE: Use device properly rated for voltage.

7. Qualified person, with guidance from the OAAE, installs the internal grounds.

Reference: SCG-SH-0230 Temporary Protective Grounds

8. OAAE signs the Executed By section of the LOTO Isolation Record and returns to OAL for review.
9. OAL reviews the completed LOTO Record with the OAAE to ensure completeness of the record and all steps are executed.
10. OAL determines if concurrent verification was performed.

*If yes, proceed to Step 11.*

*If no, proceed to Step 16.*



11. OAL determines if LOTO is a maintenance release.

*If yes, proceed to 4.7, Maintenance Release.*

*If no, proceed to Step 12.*

12. OAL places the key(s) to the isolation devices in the master lockbox, then secures the master lockbox with an operating area lock.

13. OAL activates the LOTO Isolation Record (SafeTK).

14. OAL attaches the cover page to the master lockbox and places the associated LOTO record(s) in the active LOTO file.

15. OAL notifies the requestor the LOTO is active.

*Proceed to 4.6, Perform Work.*

16. OAL assigns a verifier for independent verification.

17. Verifier walks down the equipment per steps on the LOTO Isolation Record to confirm LOTO devices are properly installed on correct devices. The verifier initials that all devices are correct per LOTO Isolation Record.

NOTE: The verifier shall not reposition any devices as a part of this walkdown. If any portion of the LOTO record is in question, the verifier shall return to the OAL for resolution.

18. The verifier signs the LOTO Isolation Verified By field on the LOTO Isolation Record.

19. OAL reviews the completed LOTO Record with the verifier to ensure completeness of the record and all steps are verified.

*Proceed to Step 11.*

20. OAL reviews the boundary issue with the OAAE.

21. OAL determines if the boundary can be modified to resolve the boundary issue.

*If yes, proceed to Step 22.*

*If no, proceed to Step 24.*

22. OAL reviews boundary issue with the LOTO with the OAAE and revises LOTO record to resolve the boundary issue.

23. OAL determines if the boundary modification record is approved.

*If yes, proceed to Step 1.*

*If no, proceed to Step 24.*

24. OAL notifies a requestor the unit cannot support the isolation request.

*Proceed to 4.9, Release LOTO*

#### **4.5 Verify Isolation**

##### [Process Map](#)

Verify Isolation defines the process for ensuring the equipment is properly removed from service and that all stored and/or potentially hazardous or residual energy has been relieved, disconnected, or properly restrained.

The verifier shall not reposition or remove any lockout device placed on equipment. Any devices discovered in conflict with the LOTO record shall be identified and brought to the Operating Area Leader (OAL) for resolution.

The Operating Area Authorized Employee (OAAE) assigned to execute the LOTO record shall be responsible for verification of isolation.

1. OAAE determines if any isolation devices are electrical components.

*If yes, proceed to Step 2.*

*If no, proceed to Step 13.*

2. OAAE determines if it is possible to perform a visual inspection either through (1) ensuring an air gap exists between the source and equipment or (2) an installed voltage indicator to verify the absence of voltage.

NOTE: When an installed voltage indicator is used, the OAAE shall verify the voltage indicator is operating properly prior to performing the isolation step. If the voltage indicator is not working properly, it cannot be used as a verification method.

*If yes, proceed to Step 9.*

*If no, proceed to Step 3.*

3. OAAE determines if a test try will be performed.

*If yes, proceed to Step 10.*

*If no, proceed to Step 4.*

4. OAAE determines if test equipment can be used.

*If yes, proceed to Step 5.*

*If no, proceed to Step 6.*

5. The qualified employee will use test equipment to verify the absence of the energy and prove to the OAAE that hazardous energy is absent.

NOTE: Use a device properly rated for the voltage.

6. OAAE determines if hazardous energy is absent.

*If yes, proceed to Step 7.*

*If no, proceed to 4.4, Isolate Equipment (Step 22).*

NOTE: If any required mechanical component by design cannot be tested for isolation, plant management will work with the appropriate personnel to establish safe work procedures for a system break prior to activating the LOTO.

Using a system break for an isolation test shall only be used until a permanent means for isolation test can be installed.

7. OAAE updates the Test Performed By section of LOTO Isolation Record to indicate the verification action performed.

NOTE: When isolation devices have an active LOTO in place (overlapping LOTO), it shall be assumed that the prior isolation test has not been compromised. The test method section shall be lined through and indicated as a visual test method. The test performed by section shall be initialed, and the prior active LOTO number shall be referenced in the notes section.

8. OAAE determines if a Simple LOTO record is used.

*If yes, proceed to 4.2, Simple LOTO (Step 12).*

*If no, proceed to 4.4, Isolate Equipment (Step 4).*

9. OAAE confirms absence of voltage by confirming a visual air gap exists or the voltage indicator validates an absence of voltage.

*If yes, proceed to Step 6.*

*If no, proceed to 4.4, Isolate Equipment (Step 22).*

10. OAAE clears the area for the equipment that will be attempted to start.

NOTE: Ensure area around equipment is clear of hazards and all personnel in case the equipment should start inadvertently during the test try. Controls should be placed in the "stop" or "off" position following verification of a test try.

11. OAAE performs a test try by attempting to start the equipment using control devices.

NOTE: Attempt to start equipment. (Emergency stops and other interlocks should be checked to make sure they would not block the startup of the equipment.) If using a Start button for the test try, press the Stop button afterward.

12. OAAE determines if the equipment started.

*If yes, proceed to 4.4, Isolate Equipment (Step 22).*

*If no, proceed to Step 7.*

13. OAAE verifies the system or device is drained, depressurized, and safe for work. Verification can be confirmed by using a pressure gauge, drain, vent, or equivalent method.

*Proceed to Step 6.*

## 4.6 Perform Work

### [Process Map](#)

Perform Work defines the process for all workers to ensure an energy isolating device remains in a safe position and prevents the energization of equipment while performing servicing or maintenance activities.

1. LOTO Holder selects the LOTO and verifies with DOA the selected LOTO matches the scope of work.
2. LOTO Holder secures the master lockbox with an individual or coordinator lock.
3. LOTO Holder determines if third-party grounds are required.

*If yes, proceed to step 4.*

*If no, proceed to step 15.*

4. LOTO Holder obtains TPG tags (orange) from the OAL.
5. OAL indicates (SafeTK) the LOTO coordinator's name and time/date the tags were issued. The TPG Tag Tracking index remains in the electronic file as part of the LOTO documentation.

NOTE: The LOTO coordinator shall request TPG tags (orange) from the OAL in the designated operating area. The OAL shall prepare the appropriate number of TPG tags (orange) by writing the associated LOTO and tag number on the tag(s) in ink.

6. LOTO holder performs a prejob briefing with the third-party qualified person.
7. Third-party qualified person secures lockbox (hasp or satellite as needed) behind the coordinator lock with a non-listed (contractor or visitor) lock.
8. Third-party qualified person performs walkdown with the LOTO holder and verifies the absence of energy.

NOTE: Use a device properly rated for voltage.

9. Third-party qualified person installs grounds and TPG tags (orange).
10. LOTO holder performs work with all workers.

11. LOTO holder determines if testing is required.

*If yes, proceed to 4.11, Testing.*

*If no, proceed to Step 12.*

12. LOTO holder determines if work is complete.

*If yes, proceed to 4.8, Work Completed.*

*If no, proceed to Step 13.*

13. LOTO holder determines if a boundary modification is needed.

*If yes, proceed to Step 14.*

*If no, proceed to Step 10.*

14. LOTO holder determines if a decreased boundary is needed.

*If yes, proceed to 4.10, Suspend Work*

*If no, proceed to 4.12, Modify Boundary*

15. LOTO holder performs a prejob briefing.

16. LOTO holder performs a walkdown.

17. LOTO holder determines if they will coordinate the LOTO for other workers.

*If yes, proceed to Step 18.*

*If no, proceed to Step 10.*

18. LOTO holder performs a prejob briefing with all workers involved in servicing and maintenance activity.

19. Non-listed worker secures lockout device behind the coordinator lock with a personal protective lock.

NOTE: Each worker may determine to his or her satisfaction the appropriate isolations are in place and the isolations are secure for the task in which he or she is involved. A copy of the LOTO record shall be provided when requested.

NOTE: If non-listed worker, follow 4.13, Non-Listed/Visitor Lock, to obtain lock.

*Proceed to Step 10.*

## 4.7 Maintenance Release

### [Process Map](#)

Maintenance Release defines the process for when a LOTO coordinator needs local control to operate equipment under LOTO to perform an assigned maintenance activity such as jogging, rotating, or intermittently moving the equipment. Examples include rotating an air heater to replace baskets and rotating intake water screens to replace or repair them.

A maintenance release authorizes a LOTO coordinator holding stated equipment under LOTO to operate the equipment only when the following condition has been met:

A minimum of two isolation devices have been identified and shall be used to isolate and control equipment under the maintenance activity. The isolation devices shall remain under the exclusive control of the LOTO coordinator via independently keyed isolation locks and satellite box.

Only one person may hold a maintenance release on a piece of equipment or component at one time.

1. OAL secures all nonmaintenance release isolation keys in master lockbox with operations lock

NOTE: OAL restricts access to master lockbox ensuring other workers understand the LOTO boundary does not include the devices associated with the maintenance release.

2. OAL places maintenance release isolation keys in satellite lockbox.
3. LOTO coordinator secures coordinator lock to satellite lockbox.
4. OAL activates LOTO isolation record (SafeTK).
5. OAL attaches the completed LOTO isolation record to lockboxes. OAL attaches original LOTO isolation record to the master lockbox and a copy of the record to the satellite box, then places a cover page for the LOTO on each lockbox.
6. OAL notifies requestor that LOTO is placed.
7. LOTO coordinator relocates satellite lockbox to work area. The satellite lockbox will remain in the maintenance release work area under the exclusive control of the LOTO coordinator for the duration of the job.
8. LOTO coordinator controls access to maintenance release work area.

NOTE: Use barricade procedure to secure the area and control access.

9. LOTO coordinator conducts prejob briefing with all workers involved in maintenance release activities.

NOTE: LOTO coordinator shall document and communicate process for securing and releasing locks during maintenance release.

A briefing with the immediate work group shall address:

- The person(s) who shall operate the controls. When working around the clock, a person shall be identified for each shift.
- The means of controlling access to the work area.
- The type of communication method that shall be used to notify others in his or her work group to clear the area prior to energizing the equipment.
- Each person's communication method to respond back that he or she has taken a safe position that shall prevent him or her from making or coming in contact with rotating or energized equipment.

10. Workers secure satellite lockbox with personal protective locks.

11. Workers perform maintenance activity with the LOTO coordinator.

12. LOTO coordinator determines if additional maintenance release activity is required.

*If yes, proceed to Step 13.*

*If no, proceed to 4.8, Work Completed.*

NOTE: If Maintenance Release activity is completed prior to other work on the associated LOTO, the isolation devices shall be placed in the position indicated on the Isolation Record and secured with isolation locks and tags. The keys shall be returned to the Designated Operating Area and placed in the master lockbox by the OAL until all work activity is complete and ready to return to service.

13. Workers remove personal locks from satellite box.

14. LOTO coordinator removes coordinator lock from satellite lockbox and obtains keys for maintenance release.

15. LOTO coordinator removes isolation locks and tags.

16. Worker repositions equipment for maintenance activity.

17. LOTO coordinator isolates, tags, and locks devices per LOTO Isolation Record.

18. LOTO coordinator places the keys to the maintenance isolation locks in satellite lockbox and secures with a coordinator lock.

*Proceed to Step 10.*

#### **4.8 Work Completed**

##### [Process Map](#)

Work Completed defines the process for removing workers from an active LOTO following the completion of all servicing and maintenance activities.

1. Workers remove non-listed personal protective locks.

NOTE: If non-listed/visitor lock is used and no longer needed, follow 4.13, Non Listed/Visitor Lock. LOTO holder determines if coordinating other workers.

*If yes, proceed to Step 3.*

*If no, proceed to Step 11.*

2. LOTO coordinator verifies all personal protective locks are removed.

NOTE: Excluding qualified person locks.

3. LOTO coordinator determines if third-party grounds are installed.

*If yes, proceed to Step 5.*

*If no, proceed to Step 10.*

4. Third-party qualified person removes grounds and TPG tags and returns tags to LOTO coordinator.
5. LOTO coordinator returns TPG tags to the DOA.
6. OAL indicates each TPG tags returned in tool (SafeTK).
7. Third-party qualified persons remove lock(s).
8. LOTO coordinator verifies all personal protective locks have been removed.
9. LOTO coordinator verifies all personnel are clear of work area.

NOTE: Collect tools from work area.

10. LOTO holder determines if equipment is safe to return to service.

NOTE: If any equipment is left in a condition not safe to return to service, all LOTO holders shall remain locked to the master lockbox until a LOTO coordinator responsible for the servicing or maintenance activities can maintain continuity by securing a coordinator lock.

NOTE: The LOTO Holder shall assign a coordinator associated with the specific scope of work.

*If yes, proceed to Step 12.*

*If no, proceed to Step 13.*

11. LOTO holder removes individual lock and/or LOTO coordinator removes coordinator lock from lockbox.

*Proceed to 4.9, Release LOTO.*

12. LOTO coordinator installs coordinator lock.



13. LOTO coordinator determines if work should be suspended for testing.

*If yes, proceed to 4.10, Suspend Work (step 2).*

*If no, proceed to 4.6, Perform Work.*

#### **4.9 Release LOTO**

##### [Process Map](#)

Release LOTO defines the process for restoring equipment to normal production operations.

1. OAL determines if all LOTO holder locks are removed.

*If yes, proceed to Step 2.*

*If no, proceed to 4.14, Lock Emergency Removal.*

2. OAL releases LOTO (SafeTK).

3. OAL assigns OAAE to release LOTO (SafeTK).

4. OAL issues LOTO Release Record (SafeTK).

5. OAL removes operating area lock from lockbox and issues keys for items to release.

6. OAL determines if internal grounds require removal.

*If yes, proceed to Step 7.*

*If no, proceed to Step 9.*

7. OAL requests electrician to remove internal grounds.

8. Qualified person removes internal grounds with OAAE.

9. OAAE removes locks and tags and repositions and initials each step per LOTO record.

10. OAAE signs LOTO Released By section of LOTO Release Record.

11. OAAE verifies all locks returned and stores lockbox.

12. OAL accounts for and disposes of all tags.

13. OAL completes LOTO (SafeTK).

14. OAL files original completed LOTO documents and retains per Southern Company Records Retention Schedule.

*End of process.*

#### 4.10 Suspend Work

##### [Process Map](#)

Suspend Work defines the process for removing workers from an Active LOTO to support testing or a reduced boundary.

1. LOTO coordinator determines if third-party TPGs are installed.

*If yes, proceed 4.8, Work Completed (Step 6).*

*If no, proceed to Step 2.*

2. LOTO coordinator verifies all workers have removed locks.
3. LOTO holder verifies all personnel are clear of work area.

NOTE: Collect tools from work area.

4. LOTO holder removes lock from lockbox.
5. OAL places lockbox(es) in a secure area to prevent access by workers.

NOTE: Place in designated secure area; remove all locks except operation area lock.

6. OAL determines if all locks are removed.

*If yes, proceed to Step 7.*

*If no, proceed to 4.14, Lock Emergency Removal.*

7. OAL determines if work is suspended for testing.

*If yes, proceed to 4.11, Testing.*

*If no, proceed to 4.12, Modify Boundary.*

#### 4.11 Testing

##### [Process Map](#)

Testing defines the process for temporary releasing a portion of a LOTO boundary to perform an operational check, servicing, or repositioning of equipment under an Active LOTO. All workers shall suspend servicing or maintenance activity on any system or equipment when a test is performed. Access to the group master lockbox shall be prevented.

Any LOTO holder may request a test release of the equipment and must be on site during the time of the test. Only one person may request a test release on the same equipment at one time.

NOTE: A test release shall not be required for tests such as meggering, motor evaluation tests, or resistance where LOTO is not released.

1. LOTO holder reviews scope of testing with OAL.
2. OAAE creates the LOTO Test Release Record (SafeTK).

NOTE: If TPGs are part of the LOTO record, a review should be performed to determine if removal is required prior to issuing Test Release.

3. OAL reviews isolation boundaries.
4. OAL determines if the LOTO Test Release Record can be approved

*If yes, proceed to Step 5.*

*If no, proceed to Step 2.*

5. OAL assigns employee to release isolation (SafeTK).
6. OAL issues LOTO Test Release Record (SafeTK).
7. OAL removes operating area lock from lockbox and issues key(s) for items to release.
8. OAL determines if internal ground removal is required.

*If yes, proceed to Step 9.*

*If no, proceed to Step 11.*

9. OAL requests qualified person for ground removal.
10. Qualified person removes internal grounds with OAAE.
11. OAAE removes locks, tags, and LOTO devices; repositions devices.
12. OAAE initials each item repositioned on the LOTO Test Release Record.

NOTE: Verify all equipment is in the correct position.

13. OAL receives locks, tags, devices, and LOTO Test Release Record.
14. OAL activates LOTO Test Release Record (SafeTK).
15. LOTO holder performs a prejob briefing with OAL and OAAE.
16. LOTO holder performs testing with support from the DOA.
17. LOTO holder determines if work is complete.

*If yes, proceed to 4.8, Work Completed.*

*If no, proceed to Step 18.*

18. OAL initiates Test Restore Record.

*Proceed to 4.3, Develop LOTO Record (step 15).*

#### **4.12 Modify Boundary**

##### [Process Map](#)

Modify Boundary defines the process for making changes to the LOTO boundaries including increasing and decreasing isolation devices.

NOTE: If any device of the active boundary is decreased, work must be suspended prior to releasing any isolation device.

When isolation devices are added to increase the boundary, LOTO holders may remain on the active LOTO. New LOTO holders must review and understand the entire boundary prior to performing service or maintenance activity. When a LOTO boundary is increased, all workers shall review the associated LOTO documents and isolation devices per the new boundary modification prior to working beyond the scope original boundary.

1. LOTO holder identifies the isolation needs and requests boundary change.
2. OAL reviews LOTO request and scope of work with the LOTO holder.
3. OAL determines if the unit can support a boundary modification.

*If yes, proceed to Step 5.*

*If no, proceed to Step 4.*

4. OAL notifies the requestor that the unit cannot support LOTO request.

*End of process.*

5. OAAE defines the isolation boundaries.
6. OAAE determines if the request is an increased boundary change.

*If yes, proceed to Step 8.*

*If no, proceed to Step 7.*

7. OAAE determines if work has been suspended.

*If yes, proceed to Step 8.*

*If no, proceed to 4.10, Suspend Work.*

8. OAAE creates a boundary change record (SafeTK).
9. OAL reviews isolation boundaries.
10. OAL determines if the boundary change record is approved.

*If yes, proceed to 4.4, Isolate Equipment.*

*If no, proceed to Step 5.*

NOTE: If boundary decrease, remove Operating Area Lock to access isolation lock key.

#### 4.13 Non-Listed/Visitor Lock

##### [Process Map](#)

Non-Listed/Visitor Lock defines the process for temporarily issuing a visitor lock to workers who are not on the plant authorized list that require protection under LOTO while performing service or maintenance activity. See attachment D, Example Non-Listed/Visitor Lock Index, for an example Non-Listed/Visitor Lock index.

At the discretion of plant management, each DOA can issue non-listed/visitor locks to workers.

1. Non-listed Worker/Visitor requests non-listed/visitor lock.
2. LOTO coordinator determines if LOTO Awareness Training has been completed.

*If yes, proceed to Step 4.*

*If no, proceed to Step 3.*

3. Worker completes LOTO Awareness Training as coordinated by the LOTO coordinator.
4. LOTO coordinator verifies training is completed and communicates to OAL.

NOTE: It is the non-listed worker's (visitor or contractor) responsibility to prove to the LOTO coordinator that LOTO Awareness Training has been completed. Training records, sign-in sheets, or verbal confirmation from the worker's employer are examples of acceptable means of verification.

5. OAL issues non-listed/visitor lock and information tag.

NOTE: The Non-Listed Visitor Lock Index can be used to track issued locks.

6. Worker uses lock as required by LOTO coordinator.
7. Worker returns non-listed/visitor lock to DOA.
8. OAL returns lock to secure location.

#### 4.14 Lock Emergency Removal

##### [Process Map](#)

Lock Emergency Removal defines the process for removing a personal protective lock when the lock owner cannot remove the lock. All reasonable efforts shall be made to contact the lock owner and have the individual return to remove their own personal protective lock. If it is not reasonable for the worker to return or the worker cannot be reached, only the plant manager or designee may remove a lock for the worker.

1. OAL makes all reasonable effort to contact worker.
2. OAL determines if the worker is an authorized worker.  
*If yes, proceed to Step 5.*  
*If no, proceed to Step 3.*
3. LOTO coordinator determines if the contractor responsible person is available.  
*If yes, proceed to Step 4.*  
*If no, proceed to Step 5.*
4. LOTO coordinator requires implementation of contractor lock removal policy.  
*End of Process.*
5. OAL determines if employee can be contacted to remove lock.  
*If yes, proceed to 4.8, Work Completed.*  
*If no, proceed to Step 6.*
6. Employee's supervisor verifies for LOTO holder or LOTO coordinator verifies for non-listed worker is not at facility and takes steps to control the employee's access to facility.
7. Employee's supervisor or LOTO coordinator verifies all personnel clear of work area.
8. Employee's supervisor or LOTO coordinator verifies all tools and equipment are clear and equipment is configured to return to service.
9. OAL issues Lock Emergency Removal Record (SafeTK).
10. OAL determines if the LOTO holder is an authorized worker.  
*If yes, proceed to Step 11.*  
*If no, proceed to Step 16.*
11. Employee's supervisor or LOTO coordinator completes Emergency Lock Removal Record with plant manager or designee and obtains spare key.

12. Employee's supervisor or LOTO coordinator removes lock and provides it to plant manager or designee.
13. Plant manager or designee notifies LOTO holder of actions and returns lock.

NOTE: Following discussion, plant manager can remove restriction to facility access.

14. LOTO Holder signs and records Date and Time fields of the LOTO Lock Emergency Removal Record.
15. OAL files LOTO Lock Emergency Removal Record with original LOTO documents and retains per Southern Company Records Retention Schedule.
16. LOTO coordinator cuts lock.

*Proceed to Step 14.*

*End of Process.*

## **5.0 TRAINING**

All Southern Company Generation employees and other personnel working under the requirements of this procedure shall be trained in the use of this procedure.

### **5.1 LOTO Awareness Training**

Each employee whose work operations are or may be in an area where energy control procedures may be used shall be instructed during site orientation or annual compliance training (as applicable) on the LOTO procedure; instruction shall include training about the prohibition related to attempts to restart or re-energize equipment that is locked out or tagged out. Each affected employee shall be instructed in the purpose and use of the energy control procedure. Any worker not on the plant's authorized list shall complete LOTO Awareness Training or Initial LOTO Training prior to working on equipment as a non-listed worker.

### **5.2 Authorized Worker Training**

#### **5.2.1 Initial Training**

Initial training shall be classroom training conducted by a qualified instructor as deemed by management.

- At a minimum, employees shall be trained initially to ensure the purpose and function of the energy control program are understood and the knowledge and skills necessary for the safe application, usage, and removal of the energy controls are required.
- Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

- Initial training requires a documented LOTO evaluation.
- When tagout systems are used, employees shall also be trained on the limitations of tags only.
- Initial training shall be documented using the corporate LOTO procedure LearningSource code.

Site-specific training shall be conducted at each facility and shall include any local requirements of the plant or designated operating areas and identify employees having specific roles and responsibilities at that facility. Each facility shall have a unique LearningSource code for site-specific training.

### **5.2.2 Refresher Training**

Refresher training shall be conducted annually by a qualified instructor as deemed by management.

- Refresher training will include the site-specific procedure, site-specific issues/best practices, as well as fleet issues/best practices.
- Refresher training does not require a LOTO evaluation.
- Refresher training shall be documented using the facility's LOTO site-specific LearningSource code.
- The refresher training shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

### **5.2.3 Retraining**

- Retraining shall be conducted when periodic inspections reveal, or when management has reason to believe there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures. This training may include a review of initial, site-specific, and/or department training. See 5.3, Department Training and Proficiency Requirements.
- The retraining shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

NOTE: Approved employee training (Initial, Site-Specific, and Refresher) shall be documented in LearningSource prior to requesting access on any authorized list in Cool Compliance. Completion of authorized worker training shall be acceptable training for workers that are required to work at other facilities as a non-listed worker.

## **5.3 Department Training and Proficiency Requirements**

In addition to the LOTO training outlined in this procedure, each employee's supervisor shall ensure department training has been completed, and evaluate each employee, specific to their position, on the following:

- Understanding of general plant knowledge, such as plant orientation, system design, and system operation.



- Proficiency to safely perform assigned job responsibilities.
- Understanding of limitations of the LOTO program.

NOTE: Required department training is defined by plant management. Additional training may be required for specific LOTO roles, such as LOTO coordinators.

#### **5.4 Authorized List**

COOL Compliance governs permissions for all roles in the LOTO process. Inclusion on any facility authorized list shall be approved or denied in Cool Compliance by the employee's supervisor and the plant authorized list administrator. The supervisor's approval in Cool Compliance certifies the employee has met the requirements of 5.3, Department Training and Proficiency Requirements, and is proficient to hold all selected roles. The plant authorized list administrator's approval in Cool Compliance grants final permission and inclusion on the plant's authorized list.

- Authorized list permission will expire at 1 year + 60 days after the most recent training completion date, or as revoked by management.
- SafeTK automatically integrates with Cool Compliance to govern permissions in the software according to the authorized list.
- For permissions not integrated with SafeTK, the employee's supervisor shall collect lockout devices (locks, keys, and so forth) when permissions have expired in Cool Compliance.

NOTE: With permission of the DOA, employees who have not been approved on the facility authorized list may work under the guidance of a coordinator only after completion of annual LOTO Awareness training and issuance of a non-listed/visitor lock (brown).

### **6.0 PROCEDURE REVIEW**

Southern Company Generation management shall ensure a review of the Southern Company Generation LOTO Procedure is conducted at least annually to ensure the procedure and the provisions of 29 CFR 1910.269(d) and 29 CFR 1910.147 are being followed.

#### **6.1 LOTO Periodic Inspection**

A periodic inspection of LOTO records will be conducted at least annually at each facility to ensure the procedure is being followed. Each facility, having similar equipment by system and the same or similar types of control measures, shall group LOTO records for the purpose of inspection. An authorized employee shall interview a representative number of available employees implementing and/or holding an active LOTO within each system.

NOTE: If an active LOTO is not available, an authorized employee shall conduct at minimum a periodic inspection for each system using completed LOTO records annually.

The LOTO Periodic Inspection Record shall be completed by an authorized employee not utilizing the LOTO record being inspected. The inspection shall identify and require correction of any deviations or inadequacies.

NOTE: If significant deviations or inadequacies are discovered during the periodic inspection, an additional inspection of a LOTO record shall be performed within the same system.

The LOTO Periodic Inspection Record shall certify:

- The equipment on which the energy control was used.
- The date of the inspection.
- The employees included in the inspection.
- The person performing the inspection.

A copy of the LOTO Periodic Inspection Record shall be retained per the record retention schedule. The facility management, LOTO coordinator, and safety and health manager shall develop corrective actions to address any procedure inadequacies. When the inspection reveals any inadequacies in employee knowledge, plant management shall conduct a more detailed review to address responsibilities. Employees found to have significant inadequacies shall be removed from the facility authorized list and retrained.

## **6.2 Facility Active LOTO Review**

Each facility shall inspect all active LOTO records annually from the date they became active.

Active LOTO records shall be inspected annually by an employee from the designated operating area to ensure the following:

- The status of the equipment has not changed.
- The LOTO record is still valid.
- The locks and tags are intact and legible.
- Following each review, the employee from the designated operating area indicates the review on the LOTO record, identifying any actions required, noted, and/or performed.

## **7.0 KEY CONTACT**

For questions regarding the content and implementation of this document, contact your safety and health representative.

## **8.0 QUALITY RECORDS**

The following records are official records and shall be retained in accordance with the Southern Company Records Retention Schedule:

- LOTO Isolation Record.
- LOTO Maintenance Release Record.
- LOTO Release Record.
- LOTO Test Release Record.
- LOTO Test Restore Record.
- LOTO Boundary Increase Record.
- LOTO Boundary Decrease Record.
- LOTO Simple Record.
- LOTO Lock Emergency Removal Record.
- LOTO Annual Procedure Review Record.
- Coordinator Continuity Transfer Record.

## **9.0 ATTACHMENTS**

Attachment A, Example Lockout Devices

Attachment B, Example LOTO Tags





Attachment C, Example Temporary LOTO Records




Attachment D, Example Non-listed/Visitor Lock Index

Attachment E, Revision History

Attachment A, Example Lockout Devices

**lockout device** – Device that uses a positive means such as a lock and key, to hold an energy isolating device in the safe position and prevent the energizing of equipment. Southern Company Generation-approved lockout devices are as follows:

<p><b>Isolation locks</b></p>		<p>Red locks are used to secure energy isolation devices.</p> <ul style="list-style-type: none"> <li>• Keyed in groups (lock sets).</li> <li>• Used to secure/isolate equipment.</li> <li>• Always secured with an attached tagout device.</li> </ul>
<p><b>Operating area locks</b></p>		<p>Orange locks are used for operating area continuity indicating equipment has been isolated per the LOTO record. Operating area locks are always the first lock on and last lock off to ensure continuity of the active LOTO and the position of isolation devices has not been altered. No other lock shall be placed on the master lockbox without an operating area lock previously installed.</p> <ul style="list-style-type: none"> <li>• “Operations Lock.”</li> <li>• Keyed in groups by Designated Operating Area (DOA).</li> <li>• All Operating Area Leaders are issued keys.</li> <li>• Indicates the position of isolation devices has not been altered or equipment has not changed.</li> </ul>
<p><b>Individual locks</b></p>		<p>Blue locks are assigned to individuals for their personal protection while performing work under a LOTO. Individuals are assigned five locks for this purpose.</p> <ul style="list-style-type: none"> <li>• Keyed in groups (lock sets).</li> <li>• Each worker has five locks and one key.</li> <li>• Emergency key held by plant manager or designee.</li> <li>• Can lock on any LOTO with DOA permission.</li> <li>• Shall display worker name and contact number.</li> </ul>
<p><b>Coordinator locks</b></p>		<p>Green locks are used by departments to coordinate multiple work crews, ensure continuity and integrity of active LOTO, and protection of other workers. Coordinator locks are issued and controlled as approved by plant management, as required for each department. Requires an attached LOTO information tag.</p> <ul style="list-style-type: none"> <li>• Keyed in groups by department.</li> <li>• Used to coordinate work crews.</li> <li>• Requires an attached LOTO information tag and:             <ol style="list-style-type: none"> <li>1. Hasp on master lockboxes (red)</li> <li>or</li> <li>2. First lock on a Satellite Box (yellow).</li> </ol> </li> </ul>

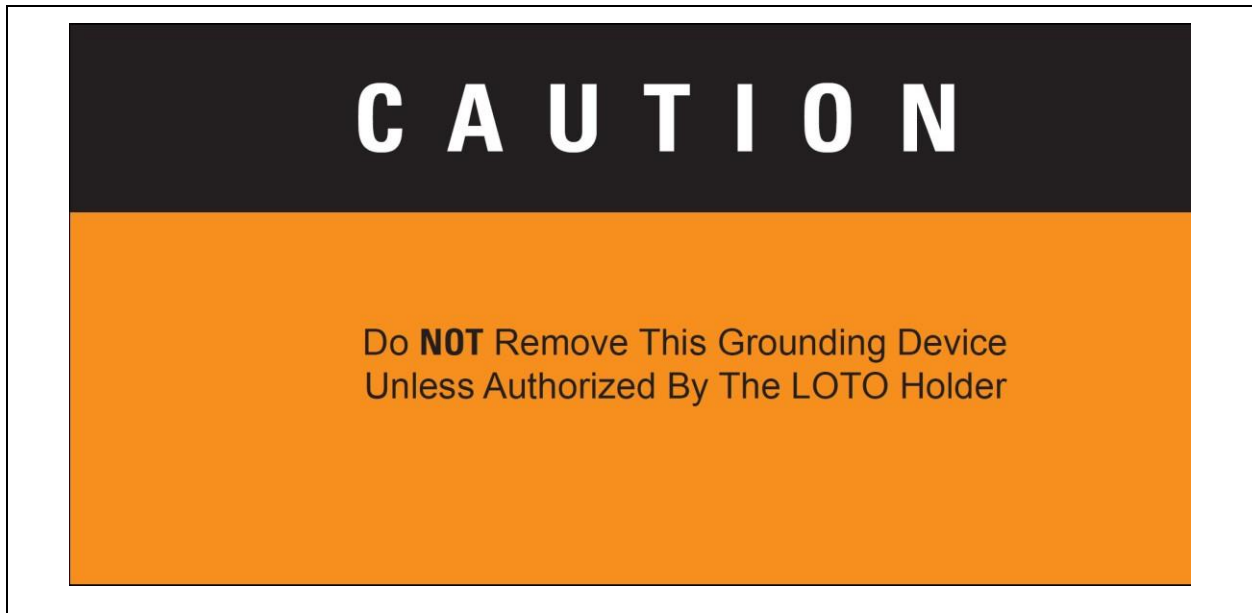
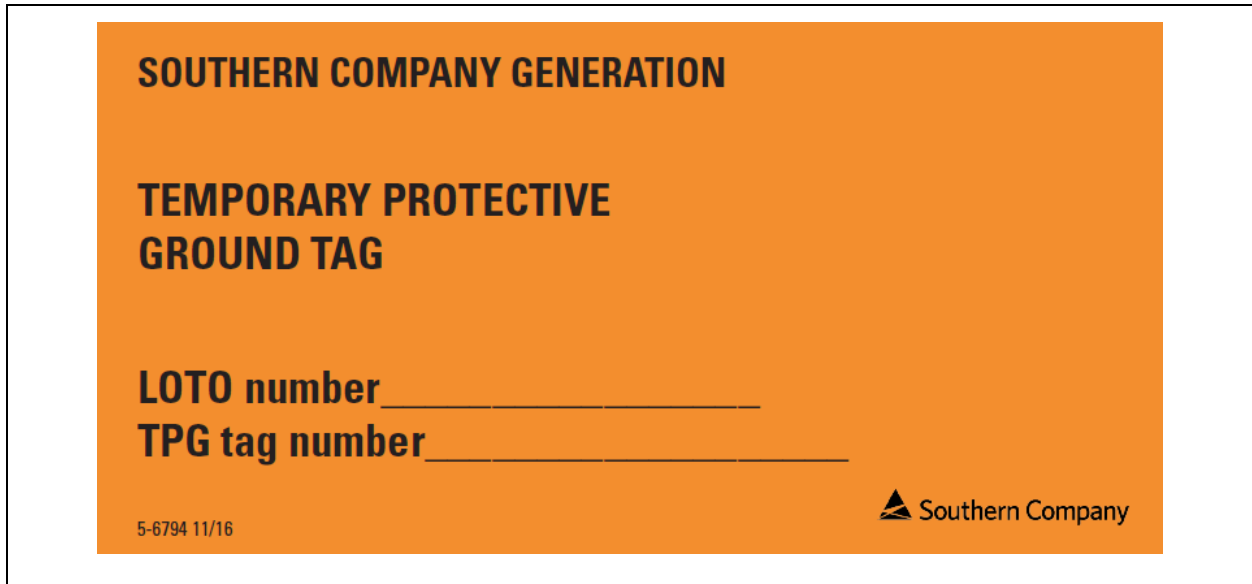
<p><b>Satellite lock</b></p>		<p>Yellow locks are used to maintain continuity while a satellite lockbox is in use. Satellite locks are assigned to a corresponding satellite lockbox.</p> <ul style="list-style-type: none"> <li>• Placed on master lockbox.</li> <li>• Shows satellite lockbox in use.</li> <li>• Keyed individually (one key and one lock) or in sets (one key and multiple locks) (to corresponding yellow box).</li> <li>• Requires an attached LOTO information tag.</li> </ul>
<p><b>Non-listed/visitor lock</b></p>		<p>Brown locks are used for non-listed workers to enable them to perform service or maintenance under the protection of a LOTO. Non-listed/visitor locks are issued for temporary use at the discretion of plant management. Requires an attached LOTO information tag.</p> <ul style="list-style-type: none"> <li>• Issued by DOA (one lock and one key)</li> <li>• Requires LOTO Awareness Training annually</li> <li>• Can only lock behind a coordinator lock (Green Lock)</li> <li>• Requires an attached LOTO information tag</li> </ul>
<p><b>Contractor lock</b></p>		<p>Contractor locks are provided by contractors for adherence to the Southern Company LOTO procedure and protection of their employees. All contractor personal protective locks shall be individually keyed and individually assigned to that worker. When securing to Southern Company lockout devices, contractor locks shall adhere to the following:</p> <ul style="list-style-type: none"> <li>• Contain worker's name, contact number, and company.</li> <li>• Not be manufactured by American Lock.</li> <li>• Shall be silver, gray, or black in color.</li> </ul>

Attachment B, Example LOTO Tags

Example of tagout devices



Example of TPG tags



Example of LOTO Information Tag

<b>LOTO INFORMATION TAG</b>
NAME: _____
CONTACT #: _____
COMPANY: _____
<i><u>Check if Applicable</u></i>
<b><u>LOTO COORDINATOR</u></b>
<input type="checkbox"/> 3rd Party Grounds Installed (TPG's) Quantity: _____
<b><u>SATELLITE BOX</u></b>
<input type="checkbox"/> Maintenance Release
<b><u>NON LISTED/VISITOR</u></b>
<input type="checkbox"/> Alternate Accountability Responsible Person
<small>5-6795 Rev 12/2018</small>



Example of Operational Control Tag







**Southern Company Generation**  
**LOTO Coordinator Continuity Transfer Record**



LOTO #:	Equipment:	Equipment #:		
<b>LOTO Information</b>				
Plant:	Requested By:	Date/Time Needed		
Reason for LOTO:				
Special Instructions:				
Original LOTO Coordinator:				
<b>Transfer Records</b>				
LOTO Coordinator	Signature	Date	Time	
<b>Comments</b>				



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### Attachment E, Revision History

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Rev. 0  
06/09/2016

Approved by Ted McCullough  
Reviewed by

Remarks:  
Issued.

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Rev. 1  
01/01/2018

Approved by Kim Greene  
Reviewed by

Remarks:

No rev bars were applied in this revision. In header, replaced "lock out tag out" with "lockout/tagout"; deleted words "machine or" from phrase "...the machine or equipment is isolated..." (global changes). Replaced word "employee" with word "worker" (1.1, Purpose). Added first bullet "Electrical energy sources less than 50V"; added paragraph beginning "When external maintenance or servicing..."; added paragraph beginning "Details of the LOTO program..." (1.2, Scope). Added definition for "active LOTO file"; added NOTE after definition of "authorized employee"; deleted term "contractor lock" and definition; modified definition of "energy source" by adding qualifier "(50V or greater)" after word "electrical"; added term "isolation test" and definition; deleted term "isolation verification" and definition; added definition for "personal protective lock"; deleted term "simple LOTO" and definition; added term "system break" and definition; deleted NOTE following definition of term "temporary protective ground (TPG) tags" (2.1, Definitions). Deleted NOTE; deleted paragraph beginning "When external maintenance..."; deleted paragraph beginning "Details of the LOTO program..." (4.0, Procedure). Simplified explanation of process and eliminated steps (4.2, Simple LOTO). Edited step "1. Requestor identifies equipment..."; added NOTE after step 2; added NOTE after step 8; added NOTE after step 10; edited step 12 and yes/no statements; modified steps 13 through 20 (4.3, Develop LOTO Record). Edited NOTE after step 3; after step 7, added reference to SCG-SH-0230, Temporary Protective Grounds; rewrote and rearranged steps 11 through 24 (4.4, Isolate Equipment). Added NOTE after step 6; added NOTE after step 7 (4.5, Verify Isolation). Rewrote steps 10 through 18 (4.7, Maintenance Release). Merged and edited steps 2 and 3; added NOTE after step 11; added step 14 (4.8, Work Completed). Deleted step 13 (4.9, Release LOTO). Added step 1 (4.10, Suspend Work). Added NOTE after step 2; added step 18 (4.11, Testing). Added NOTE after step 10 (4.12, Modify Boundary). Added NOTE after step 4; added NOTE after step 5; added step 6 (4.13, Nonlisted/Visitor Lock). Section rewritten (4.14, Lock Emergency Removal). Section heading changed from "LOTO Record Review" to "LOTO Periodic Inspection"; section rewritten (6.1, LOTO Periodic Inspection). Edited attachment A, Example Lockout Devices.

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Updated 02/24/2022

Approved by Generation Acceptance Committee

Remarks:

In definition for term "lockbox," edited phrase to read "one or more satellite lock(s) (yellow)" (2.2, Definitions). In description of satellite lock, edited third bullet to read "Keyed individually (one key and one lock) or in sets (one key and multiple locks) (to corresponding yellow box)" (attachment A). Added link to FAQ (2.2).

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Updated 12/05/2022

Approved by Generation Acceptance Committee

Remarks:

Updated 5.0, Training, to reflect changes in training practice and recordkeeping. Updated example of LOTO Information Tag (attachment B).


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# SOUTHERN COMPANY GENERATION

SCG-SH-0410

HOT WORK

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
1	April 21, 2021		Executive Vice President--Operations

## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS AND REFERENCES .....	3
2.1	Definitions .....	3
2.2	References .....	4
3.0	RESPONSIBILITY .....	4
3.1	Persons Performing Hot Work .....	4
3.2	Management.....	4
3.3	Permit-Authorizing Individual (PAI) .....	5
3.4	Fire Watch .....	5
3.5	Fire Monitor.....	5
3.6	Authorized Employee.....	5
3.7	Facility Contract Coordinator.....	5
3.8	Qualified Contract Representative .....	5
3.9	Other Workers .....	5
4.0	REQUIREMENTS .....	6
4.1	Training.....	6
4.2	General.....	6
4.3	Site-Specific Instructions.....	7
4.4	Documentation – Hot Work Permit.....	7
4.5	Work Process .....	8
4.6	Completion of Hot Work Activities .....	10
4.7	Additional Fire Monitoring Activities .....	11
4.8	Additional Requirements for PRB Coal .....	11
4.9	Contractor Hot Work Activities .....	12
5.0	KEY CONTACT.....	12
6.0	RECORD RETENTION .....	12
7.0	ATTACHMENTS .....	12



## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

The purpose of this document is to minimize the potential for a damaging fire, explosion, or smoke migration by ensuring the control of potential ignition sources. This document outlines the minimum hot work requirements applicable to all Southern Company Generation facilities.

### 1.2 Scope

All Generation employees and contract representatives performing work within a Generation facility that involves any operation involving open flames, welding, burning, grinding, or similar activities capable of generating sparks, heat, or flames that may result in a fire must comply with the requirements in this document and the U.S. Occupational Safety and Health Administration (OSHA) regulations set forth in 29 CFR 1910.252 (a), Fire prevention and protection.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**approved hot work areas** – Locations at the Generation facility that have been evaluated and approved for hot work activities. Hot work permits are not required for hot work performed in approved hot work areas.

**authorized employee** – A Generation employee designated by plant management with the authority to take the necessary actions to eliminate potential fire hazards and grant approval to perform hot work activities.

**contract representative** – Personnel of contractor.

**facility contract coordinator** – A qualified employee or worker designated by management who is responsible for monitoring and coordinating a contractor's hot work activities.

**fire monitoring** – Provisions implemented to provide early warning of smoldering conditions in the hot work area following completion of the established fire watch time period. Only individuals who understand the duties of a fire monitor, have had training in the use of available firefighting equipment, and are familiar with the fire notification system may serve as a fire monitor.

**fire watch** – Trained individual(s) stationed in the area of the hot work for the purpose of observing the area of the hot work for potential, unwanted fires both during and after the completion of the hot work activities.

**Generation employee** – An employee of the Southern Company affiliate.

**Generation facility** – The facility of the Southern Company affiliate where the hot work is being performed.

**hot work** – Any operation involving open flames, welding, burning, grinding, or similar activities capable of generating sparks, heat, or flames that could result in a fire.

**hot work permit** – A form used to document work conditions and the availability of fire protection systems, designate a fire watch or additional area fire inspections, and grant approval to perform hot work. All hot work permits must be approved by the authorized employee.

**permit-authorizing individual (PAI)** – An individual designated with the responsibility to inspect the area of the hot work, prepare the permit to ensure the safe operation of the hot work activity, and coordinate hot work activities with the department responsible for the area of the hot work.

- For hot work performed by a contractor under a labor broker arrangement, the PAI must be either the authorized employee or a qualified contract representative.
- For hot work performed by an independent contractor, the PAI must be a qualified contract representative.

**SafeTK** – Software used to manage, document and track activities within the Hot Work program.

**qualified contract representative** – Contract personnel who have had an appropriate level of training and are knowledgeable about hot work tasks.

## 2.2 References

- SCG-SH-0500, Process Safety Management Program
- 29 CFR 1910.119, Process safety management of highly hazardous chemicals
- 29 CFR 1910.252, Welding, cutting and brazing, general requirements
- 29 CFR 1926.352, Fire prevention
- National Fire Protection Association (NFPA) 51B
- Hot Work Permit
- Hot Work Fire Monitoring Form

## 3.0 RESPONSIBILITY

Only trained persons shall perform hot work activities; see 4.1, Training.

### 3.1 Persons Performing Hot Work

These persons shall review the hot work permit prior to beginning work and shall strictly adhere to the requirements of the permit and this document. Persons performing hot work shall bring to the attention of the permit-authorizing individual and/or the authorized employee any changes or problems encountered during the hot work activities.

### 3.2 Management

Plant management is responsible for ensuring all provisions of this document are strictly adhered to and affected individuals are properly trained. Plant management shall designate authorized employees.

### **3.3 Permit-Authorizing Individual (PAI)**

The permit-authorizing individual (PAI) is responsible for:

- Performing a thorough inspection of the planned area of the hot work.
- Preparing the hot work permit.
- Coordinating all related activities with the department responsible for the area.

### **3.4 Fire Watch**

The fire watch is responsible for observing the area of the hot work while the hot work is underway and for a minimum of 60 minutes after the hot work is completed.

### **3.5 Fire Monitor**

The fire monitor is responsible for checking the area of hot work after the completion of the required fire watch duties.

### **3.6 Authorized Employee**

- The authorized employee shall be familiar with the inherent dangers of the specific area of the hot work and the planned task.
- The authorized employee is responsible for reviewing a hot work permit, ensuring all precautions have been addressed, and granting approval to perform hot work activities.

### **3.7 Facility Contract Coordinator**

- The designated facility contract coordinator is responsible for monitoring and coordinating a contractor's hot work activities when contract representatives perform hot work activities at the facility
- The facility contract coordinator shall also serve as the authorized employee for contractor hot work activities.

### **3.8 Qualified Contract Representative**

When a contractor performs hot work, the qualified contract representative, serving as the PAI, is responsible for:

- Inspecting the area of the hot work.
- Preparing the hot work permit.
- Coordinating with the facility contract coordinator on all activities related to the hot work.

### **3.9 Other Workers**

- All Other workers engaged in activities near a hot work operation must refrain from introducing any materials or condition that could adversely affect the hot work, and they must adhere to all instructions provided by an authorized employee and/or fire watch.

## 4.0 REQUIREMENTS

### 4.1 Training

Generation employees who serve as a PAI, authorized employee, fire watch, or fire monitor or who perform activities covered by a hot work permit shall be trained in accordance with the Southern Company Generation Compliance Training Trigger List. These Generation employees must be current in the training topics listed below:

Course Title	Required Frequency	Platform
Portable Fire Extinguishers	annually	Classroom and web-based
Combustible Dust - <i>where applicable</i>		Classroom and web-based
GPC only	annually	Web-based
MPC/APC	annually	Classroom and web-based
Facility Emergency Action Plan	annually	Classroom: site-specific training as needed
Hot Work	as needed	Classroom and web-based; site-specific training as needed

Training records will be used to verify training for Generation employees. In addition, Generation employees affected by these shall be familiar with the site-specific instructions at their respective facility.

Generation employees who perform hot work activities must be trained to use the appropriate personal protective equipment, welding screens/shields, and ventilation systems when required.

Generation employees trained as the fire watch and fire monitor shall be knowledgeable and trained in the use of the available fire protection equipment and shall know the location and means of summoning assistance in the event of a fire or other emergency situation.

Contract representatives engaged in hot work tasks must have an equivalent level of training to participate in hot work activities.

### 4.2 General

The following activities are typically considered hot work:

- Welding.
- Heat treating.
- Brazing.
- Grinding.
- Powder-driven fasteners.
- Hot riveting.
- Any similar operations producing or using a spark, flame, or heat.

Normally a hot work permit is not required for the following activities:

- A hot work task conducted in an approved hot work area (see [4.5.1, Approved Hot Work Areas](#)).
- Cooking activities.
- Analytical tests performed in a controlled setting, such as using a Bunsen burner in a facility laboratory.
- Use of tobacco products in designated smoking areas.
- Any area/activity granted exemption by management.

Hot work should not be performed if the work can be avoided or performed in a safer manner. When practical, objects to be welded, cut, or heated should be moved to a location free from combustibles (such as paper, cardboard, or wood) or to an approved hot work area listed in the facility's site-specific hot work instructions. If the work cannot be moved, personnel shall move any combustibles a safe distance from the work or properly shield the combustibles against ignition. When possible, personnel shall schedule the hot work activity at a time that would limit exposure to other personnel.

Hot work operations covered by the permit shall cease if a fire develops or if the status of a condition listed on the permit changes. The PAI, authorized employee, and/or facility management shall be notified immediately: the area shall be reassessed, and a new hot work permit issued before work can resume.

### **4.3 Site-Specific Instructions**

Generating facilities shall write site-specific instructions that supplement, but do not replace, the requirements in this document. At a minimum, site-specific instructions shall detail:

- Where completed hot work permits are kept.
- A list of the facility's approved hot work areas.

In addition to these items, site-specific instructions may include other information related to hot work. Each facility shall evaluate its operations, fire systems, and the availability of trained personnel before writing site-specific instructions. Site-specific instructions shall be appended to this document as [attachment 1, Facility Hot Work Site-Specific Instructions](#).

### **4.4 Documentation – Hot Work Permit**

A blank hot work permit is available on the [hot work webpage](#).

Hot work shall not begin until an approved hot work permit has been posted in the vicinity of the hot work. An approved hot work permit is valid for 24 hours.

If the hot work continues beyond the 24-hour time limit, a new permit must be obtained. A PAI shall reevaluate the work to verify all necessary precautions have been taken, obtain the signature of an authorized employee, and post the permit. The hot work shall not resume until the new approved permit has been posted.

Completed hot work permits shall be retained at a place designated by plant management and detailed in the facility's site-specific instructions. See [6.0, Record Retention](#), for the retention schedule.

## **4.5 Work Process**

### **4.5.1 Approved Hot Work Areas**

Plant management may classify areas where hot work can be safely performed as approved hot work areas. Plant management shall evaluate these areas to ensure hot work activities can be performed safely and sufficient fire protection systems are available. Examples of typical approved hot work areas include welding booths and maintenance shops. Areas designated as approved hot work areas shall be listed in the facility's site-specific instructions and shall be appropriately communicated to the affected work force.

### **4.5.2 Initiating a Hot Work Permit**

When hot work is to be performed, the PAI shall:

- Obtain the Hot Work Permit Form from the authorized employee, who will initiate the process through SafeTK (if implemented) and print a permit for the PAI to use.
- Inspect the area of the hot work.
- Complete a hot work permit. The PAI shall obtain a permit and provide the details of the planned work (that is, the location, scope, time, and date of the work) in the spaces at the top of the form. All items on the permit's *Hot Work Precaution Checklist* must be evaluated by the PAI. If an item on this checklist is answered NO, the potential problems must be controlled in some manner and/or a fire watch assigned to monitor the activities. These controls shall be explained in the space provided on the hot work permit.
- Examine the site of the planned hot work to determine if combustible materials and hazardous conditions are present or likely to be present. The PAI shall take the necessary measures to protect combustibles from ignition.
- Ensure fire protection equipment is available and operational.
- If necessary, solicit assistance from the authorized employee in the completion of the permit's requirements.
- Notify the affected department regarding the intended hot work.
- Obtain the approval for the hot work from an authorized employee.

The authorized employee shall:

- Initiate the permitting process through SafeTK (if implemented).
- Review the completed hot work permit.
- Arrange for air testing in the immediate area of the work to ensure the elimination of explosive atmospheres.

- When needed, provide support to the PAI with preparation of the area of the hot work, completion of the permit, and coordination/communication with other affected work groups.
- Inspect the area of the hot work to verify the completion of the site preparation.
- If satisfied with the hot work preparations, sign the permit.

The PAI shall then post the permit in the vicinity of the intended hot work activity so it is accessible for the workers to review.

Prior to starting the hot work, the workers performing the hot work shall review the hot work permit and ensure compliance with its requirements.

#### **4.5.3 Assigning a Fire Watch**

A fire watch shall be assigned to observe the site of the hot work when work is performed in a location where a fire may develop or where any of the conditions listed on the *Hot Work Precaution Checklist* cannot be fully implemented.

#### **NOTE**

The PAI, an authorized employee, or the affected department can elect to require a fire watch at any time deemed appropriate.

The PAI shall indicate on the Hot Work Permit Form if a fire watch is required for the job by checking the box in the section entitled *Requirements for Hot Work Fire Watch*. When specified, the PAI must:

- Ensure the fire watch has the necessary training and knowledge about the planned work to effectively perform the duties.
- Assign a fire watch to observe the worksite throughout the duration of the hot work activity and for a minimum of 60 minutes beyond the completion of the hot work.
- Require the fire watch to sign and list the time on the permit verifying the completion of their duties.

#### **NOTE**

If the fire monitor must remain at the worksite longer than the required 60-minute fire watch, the PAI shall check the appropriate box in the section entitled *Fire Watch/Fire Monitoring* on Hot Work Permit Form and indicate if for combustible materials or PRB coal related. If checked, then Hot Work Fire Monitoring Form will be needed.

#### 4.5.4 PAI Approval

Upon the completion of the sections *Hot Work Precaution Checklist* and *Fire Watch/Fire Monitoring* on the hot work permit, the PAI shall sign the permit in the Authorization section.

#### 4.5.5 Final Approval

Following the completion of all the above actions, an authorized employee shall review the hot work permit prepared by the PAI and inspect the site of the planned hot work activity, if necessary, to ensure all precautions have been appropriately addressed. If the authorized employee is satisfied with the arrangements for the hot work, he or she shall sign his or her name and provide the time and date in the Authorization section. This signature verifies the work area has been examined, appropriate precautions have been taken, and final approval is granted to perform the work. The permit shall then be posted at a conspicuous location near the hot work activity.

The hot work activity shall not commence without the final approval by an authorized employee.

The authorized employee may be called upon to assist the PAI in the preparation of the worksite, assignment of the fire watch, or to address additional requirements for combustible materials (see 4.7, Additional Fire Monitoring Activities ) or PRB coal areas (see 4.8, Additional Requirements for PRB Coal).

#### 4.5.6 Fire Watch Duties During Hot Work

While hot work is underway:

- The fire watch shall observe the area of the hot work throughout the duration of the work including all breaks and for a minimum of 60 minutes after the hot work is complete. The fire watch shall have no other duties that conflict with or distract him or her from the assignments of a fire watch. Should noncompliance with the permit's precautions occur, the fire watch shall have the authority to stop the hot work operation. Unless properly relieved, the fire watch shall not leave the work area while the hot work is in progress.
- If a fire begins and the fire watch determines the fire cannot be contained, the fire watch shall sound the alarm immediately.

#### 4.6 **Completion of Hot Work Activities**

When the hot work activities are finished and the duties of the fire watch/fire monitoring are complete, the permit shall be removed from the worksite.

- If a fire watch had not been required for the work, the **PAI** shall sign the section **COMPLETION OF WORK – FINAL CHECK**, including the time and date completed, on the Hot Work Permit Form.



- If applicable, the **fire watch** shall sign the section COMPLETION OF WORK – FINAL CHECK, including the time and date completed, on the Hot Work Permit Form.
- If a **fire monitor** is required, the monitor will print, initial, and include the date and time in the appropriate section on the Hot Work Fire Monitoring Form, either for the duration of 4 hours for combustible materials or 8 hours for PRB Coal. The fire monitor shall attach the Hot Work Fire Monitoring Form to the Hot Work Permit.

The signed, completed form(s) shall then be forwarded to the individual or office designated in the facility's site-specific instructions to maintain completed hot work permits.

#### 4.7 Additional Fire Monitoring Activities

Additional fire monitoring of the hot work area is required if the hot work was performed in an area that meets any of the following criteria:

- Constructed of combustible materials.
- Contains stored combustible materials, such as paper, trash or coal (non-PRB).
- Building construction could contain concealed spaces where a fire could smolder for longer periods of time.

If any of the above criteria is met and after the conclusion of the designated fire watch time, a fire monitor shall conduct inspections of the area of hot work every 30 minutes. Periodic inspections shall continue every 30 minutes for 3 hours after the completion of the required fire watch time (total of 4 hours).

Each inspection shall be individually recorded on the table provided on Hot Work Fire Monitoring Form. The person conducting the inspections shall verify the inspection is complete by printing their name and initialing the form and providing the time and date the inspection was performed.

#### 4.8 Additional Requirements for PRB Coal

When hot work must be performed in PRB coal handling, transporting, or processing areas, additional precautions are required beyond those detailed above. These additional precautions include:

- After the completion of the duties by the fire watch, periodic inspections of the area of the hot work shall be conducted by the PAI, an authorized employee, or a designated employee from the affected department every 30 minutes.
- Periodic inspections shall continue every 30 minutes for 7 hours after the completion of the required fire watch time (total of 8 hours).
- Each inspection shall be individually recorded on the table provided on Hot Work Fire Monitoring Form.

- The person(s) conducting the inspections shall verify inspection completion by printing his or her name and initialing the form, and providing the time and date the inspection was performed.

These inspections shall consist of a thorough examination of the affected PRB coal area(s) to detect possible smoldering fires. The fire monitor shall access and inspect all areas where coal may have accumulated and/or are exposed to potential ignition sources.

#### **4.9 Contractor Hot Work Activities**

Contractors shall adhere to the hot work requirements and follow all provisions in this document when performing hot work. All contractor hot work activities shall be authorized and monitored by the facility contract coordinator.

The designated facility contract coordinator shall:

- Discuss the planned hot work in detail with the qualified contract representative.
- Review with the contract representatives all known and potential hazards in the area of the hot work.
- Ensure all contract representatives engaged in the hot work activity have had training equivalent to that specified in 4.1, Training.
- Coordinate the hot work activities between the qualified contract representative, the contract representatives, any involved Generation employee(s), and the affected department.
- Ensure contractors comply with all requirements of this document.
- Serve as the authorized employee for the planned contract work.

#### **5.0 KEY CONTACT**

For questions regarding the content and implementation of this document, contact your safety and health representative.

#### **6.0 RECORD RETENTION**

Hot Work Permits and Hot Work Fire Monitoring forms are retained. The plant shall retain completed hot work permits for 30 days following the completion of the hot work.

#### **7.0 ATTACHMENTS**

- Attachment 1, Plant <Facility Name> Hot Work Site-Specific Instructions.

Attachment 1 – Plant \_\_\_\_\_  
Hot Work Site-Specific Instructions

At a minimum, a Generation facility's site-specific instructions shall detail:



- Where completed hot work permits are kept.
- A list of the Generation facility's approved hot work areas.
- Any other hot work requirements unique to the Generation facility.



# SOUTHERN COMPANY GENERATION

SCG-SH-0610

## Commercial Diving Operations Checklist

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
0	February 9, 2012		Executive Vice President and Chief Production Officer
1	August 9, 2013		Executive Vice President and Chief Production Officer

**PURPOSE** This checklist is to assist individuals coordinating contracted commercial diving operations and is to be completed by a team leader, system owner, contract coordinator, or management designee. This checklist must be completed prior to diving operations at each location for each dive team. One checklist is sufficient for diving operations that carry over multiple days provided the dive team members, dive location, and scope of work identified remains unchanged.

Site	Location	Date
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**NOTE** The Contractor is solely responsible for the safety of its employees. Southern Company is relying on the Contractor to perform the diving job safely and in compliance with all state and federal safety and health regulations. Southern Company does not have the diving expertise to evaluate the adequacy of the Contractor's safe practices manual or dive plan.

<p><b>WARNING</b></p> <p>If the scope of work changes:</p> <ul style="list-style-type: none"> <li>• STOP WORK immediately.</li> <li>• Notify all appropriate departments and personnel.</li> <li>• Conduct a new job briefing based on the change in scope of work.</li> </ul>	<p><b>WARNING</b></p> <p>If adverse weather conditions occur, diving operations shall cease immediately.</p>
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<b>Contract Coordinator</b>		<i>Initial when verified</i>
<b>Contractor Company</b>		<b>Contract Coordinator Initials</b>

- |   |  |
|---|--|
| 1. Contractor safety orientation is complete.   |  |
| 2. Contract coordinator has notified all appropriate departments and personnel of the dive schedule and scope of work.              |  |
| 3. Contract coordinator has verified LOTO has been obtained and is adequate for the scope of work.<br><b>List associated LOTOs:</b> |  |

	<b>Contractor initials</b>
--	----------------------------

- |  |  |
|--|--|
| 1. Contractor's dive plan is present and complete, containing at a minimum the following elements: <ul style="list-style-type: none"> <li>• Safety procedures and checklists for diving operations that include:             <ul style="list-style-type: none"> <li>– Any unusual hazards or environmental conditions likely to affect the safety of the diving operation.</li> <li>– Any modifications to operating procedures necessitated by the specific diving operation.</li> </ul> </li> <li>• Assignments and responsibilities of the dive team members.</li> <li>• Equipment procedures and checklists.</li> <li>• Emergency procedures for fire, equipment failure, adverse environmental conditions, and medical illness and injury.</li> <li>• List of the telephone or call numbers of the following facilities:             <ul style="list-style-type: none"> <li>– Emergency plant contact: _____</li> <li>– Operational decompression chamber: _____</li> <li>– Accessible hospitals: _____</li> <li>– Available physicians: _____</li> <li>– Available means of transportation: _____</li> <li>– Nearest U.S. Coast Guard Rescue Coordination Center: _____</li> </ul> </li> </ul> |  |
| 2. Contractor has identified all underwater hazards such as cables, chains, currents, suction, water velocity, tidal influx, entanglement, entrapment, or hypothermia.<br><b>List underwater hazards:</b>  |  |
| 3. Contractor has developed a means for divers to enter/exit the water.  |  |
| 4. Contractor has developed a means to assist an injured diver from the water.   |  |
| 5. Contractor has provided for each diver to be continuously tended while in the water.  |  |
| 6. Contractor has conducted a job safety briefing with all parties involved the dive.  |  |

**Comments:**

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Signature: Contract Coordinator

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Date

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Signature: Contractor Company Supervisor

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Date




04/16/2020 – References to hazardous energy control procedures updated.



# SOUTHERN COMPANY GENERATION

SCG-SH-0700

## SCAFFOLD SAFETY PROCEDURE

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
0	May 27, 2009		Executive Vice President and Chief Production Officer
1	September 27, 2012		Executive Vice President and Chief Production Officer
2	August 15, 2013		Executive Vice President and Chief Production Officer

## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS AND REFERENCES .....	3
2.1	Definitions.....	3
2.2	References .....	5
3.0	RESPONSIBILITY .....	5
3.1	Facility Management.....	5
3.2	Safety and Health/Compliance .....	5
3.3	Supervisors .....	6
3.4	Competent Persons.....	6
3.5	Generation Employees .....	6
4.0	REQUIREMENTS .....	6
4.1	General Requirements.....	6
4.2	Training .....	7
4.3	Contractor Requirements.....	7
4.4	Engineered Scaffold Systems.....	8
4.5	Scaffold Tagging.....	9
4.6	Inspection – All Hardware.....	10
4.7	Storage of Scaffolding .....	10
5.0	KEY CONTACT .....	10
6.0	ATTACHMENTS .....	11
	ATTACHMENT 1, SCAFFOLD TAGS EXAMPLES .....	12
	ATTACHMENT 2, ENGINEERED SCAFFOLD INSPECTION FORM .....	13
	ATTACHMENT 3, ENGINEERED SCAFFOLD SYSTEMS CHECKLIST .....	14
	ATTACHMENT 4, SCAFFOLD INTEGRITY CHECKLIST .....	15



## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure outlines the minimum requirements for the erection, inspection, dismantling, and using of scaffolds at all Southern Company Generation facilities.

### 1.2 Scope

This procedure applies to all persons working on Southern Company Generation facilities in the operation and maintenance of those facilities.

All scaffold work on Southern Company Generation facilities shall meet the requirements of 29 CFR 1910.28, 29 CFR 1926.450, 29 CFR 1926.451, 29 CFR 1926-452, and 29 CFR 1926-453.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

#### NOTE

Scaffold competent persons may be Southern Company employees or employees of companies contracted by Southern Company or its contractors. For the purpose of this procedure, a competent person must have training and experience in scaffold use, inspection, or erection and have authority to take corrective action.

**contractor** – Any legal entity that contracts with Southern Company to perform or to have performed, the work for the project and that has the overall responsibility for the construction of the project.

**engineered scaffold system(s)** – A scaffold designed by a registered professional engineer as provided in this procedure.

**founding system** – Scaffold base built up from the ash pit or cutout bottom to the vertical wall of the boiler. Named for the founding beams that span the gap above the ash pit, it provides support for the scaffold. This system includes all the hardware used to build the base of a boiler scaffold.

**PE** – A registered professional engineer – An individual licensed and registered under the laws of the state where the scaffolding erection is performed to engage in the practice of engineering.

For the purpose of this procedure, a PE is a registered professional engineer specialized in structural engineering and is not an employee of Southern

Company, or its affiliates, but is retained or employed by the contractor or scaffold erector.

**qualified person** – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work, or the project.

Scaffold contractors shall designate a qualified person to supervise erection of and to inspect scaffolds designed by a PE. For the purpose of this procedure the “subject matter, the work, or the project” mentioned in the above definition shall be system scaffolding.

**responsible person** – The Southern Company Generation employee with responsibility for projects requiring engineered scaffold. This person is responsible for all tasks outlined in the engineered scaffold systems checklist (attachment 3, [Engineered Scaffold Systems Checklist](#)).

At a minimum the responsible person shall have completed scaffold user training SHIPS # 010554.

**scaffold** – Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or materials or both.

**scaffold erector** – An individual designated to erect scaffolds. Scaffold erectors shall be trained in the nature of scaffold hazards; correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining scaffolds; design criteria; maximum intended load capacity; and intended use of scaffolds.

**scaffold inspector** – The PE, qualified person, or competent person responsible for inspecting scaffold.

**Scaffold Integrity Checklist** – See attachment 4. A checklist completed by the responsible person to identify the scope of work inside and outside of the boiler that may adversely affect the structural integrity of the supporting structure for the engineered scaffold system. This completed Scaffold Integrity Checklist shall be shared with contractor, competent person, qualified person, and PE.

**scaffold user** – Any person who uses scaffold on Southern Company Generation property. Scaffold users shall be trained in and have knowledge of the basic elements of a safe scaffold platform, fall protection requirements, common electrical hazards, and falling object protection.

**tagging system** – A process for tagging scaffolds to indicate completion and inspection.

- Red Tag – Indicates the scaffold is under construction and not ready for use.

- Yellow Tag – Indicates a scaffold that is safe to use but has been altered to suit a specific job. This designation usually indicates an incomplete deck, handrail, or ladder.
- Green Tag – Indicates a scaffold is erected per the standard. A green tagged scaffold has a complete deck, proper access, and handrails installed.

All Southern Company Generation facilities shall use this tagging system to verify the required before-use and per-shift inspections are performed on all scaffolds regardless of type. Scaffold tags shall be signed and dated for the day and work shift.

## 2.2 References

This procedure meets all requirements set forth in:

- 29 CFR 1910.28, Safety Requirements for Scaffolding.
- 29 CFR 1926.450, Scope, Application, and Definitions Applicable to Subpart L.
- 29 CFR 1926.451, General Requirements.
- 29 CFR 1926.452, Additional Requirements Applicable to Specific Types of Scaffolding.
- 29 CFR 1926.453, Aerial Lifts.
- 29 CFR 1926.454, Training Requirements.

### NOTE

All scaffolds built and used on Southern Company Generation facilities shall meet the requirements set forth in the applicable standards referenced in section 1.2, Scope, and in this procedure.

## 3.0 RESPONSIBILITY

### 3.1 Facility Management

Facility management is responsible for ensuring all management, supervisors, and employees work in compliance with this program.

### 3.2 Safety and Health/Compliance

Safety and health/compliance are responsible for the following:

- Facilitating employee training on scaffold use.
- Assisting with daily scaffold hazard recognition.
- Providing technical assistance.

### 3.3 Supervisors

Supervisors are responsible for the following:

- Ensuring employees are trained in scaffold use.
- Monitoring employee performance for compliance with scaffold requirements.

### 3.4 Competent Persons

- Performing per shift scaffold inspection.
- Ensuring scaffold hazards are identified and properly addressed before use.
- Being capable of identifying hazardous or dangerous conditions on scaffolds.
- Being knowledgeable in the application and use of scaffold systems.

### 3.5 Generation Employees

Generation employees are responsible for completing appropriate training and working in compliance with this program. Employees are responsible for the following:

- Knowing and understanding the approved scaffold tagging requirements.
- Ensuring scaffold hazards are identified and properly addressed on the job safety briefing.

## 4.0 REQUIREMENTS

### 4.1 General Requirements

Plant management shall designate Southern Company Generation employees as scaffold competent person(s) for the types of scaffolds used at the facility. This designation shall be made in writing and plant management shall review the individual's qualifications. At a minimum, a competent person shall have experience working from scaffolds and have completed a recognized Scaffold Competent Person class. Companies contracted by Southern Company Generation to inspect, erect, or modify scaffolding shall designate competent person(s) as required by OSHA and this procedure.

#### NOTE

Southern Company Generation employees with training recorded in SHIPS may be considered *designated in writing*. Details such as the level of training and type scaffold trained on may be filed at the location.

Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person in scaffold erection, moving, dismantling, or alteration. Such activities shall be performed only by experienced and trained employees selected

for such work by the competent person. This training shall be in accordance with the current version of OSHA's scaffolding standards, 29 CFR 1926.454.

All personnel working from scaffolds shall attend scaffold safety training for the type of scaffold being used. This training shall be in accordance with the current version of OSHA's scaffolding standards, 29 CFR 1926.454.

Scaffolding in excess of 125 ft in height shall be designed by a PE. In addition, regardless of height, any scaffold built on a founding system (base) installed to the vertical wall of the boiler must be designed by a PE.

Each scaffold shall be built as complete as physically possible: complete deck, handrail/midrails, toe boards, and access ladder. If the scaffold cannot be built per the standard, it shall be yellow tagged and all deficiencies clearly identified on the tag.

Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the scaffold user. Scaffold components manufactured by different manufacturers shall not be modified to intermix them unless a competent person determines the resulting scaffold is structurally sound.

Scaffold planks are to be used for their designated purpose only.

## 4.2 Training

Southern Company Generation employees designated as scaffold users or scaffold competent persons shall be trained in accordance with the Southern Company Generation training program as outlined in the training trigger list.

SHIPS training records will be used to verify training for Southern Company Generation employees.

### Reference SHIPS Numbers

Scaffold User (every 3 years)	010554
Scaffold User Web/Online (every 3 years)	017343
Scaffold Competent Person (every 3 years)	010552

Contractor scaffold training must meet OSHA Standards as designated in 29 CFR 1926.454.

## 4.3 Contractor Requirements

Contractors who use, inspect, erect, and modify scaffolding at Southern Company Generation facilities shall designate competent and qualified persons as required by OSHA and this procedure. Documentation supporting these designations shall be provided to plant management on request.

Contractors with responsibility for the erection, modification, or disassembly of scaffolds shall provide trained scaffold erectors and be able to present documentation supporting this designation on request.

Contractors shall inspect all scaffold material prior to installation at a Southern Company Generation facility. All material shall meet the structural requirements set forth by the competent person, qualified person, scaffold erector, or PE of record.

#### 4.4 Engineered Scaffold Systems

Approval from Supply Chain Management is required for any contractor bidding or erecting PE scaffolds.

Scaffolding systems in excess of 125 ft in height shall be designed by a PE. In addition, regardless of height, any scaffold built on a founding system (base) installed to the vertical wall of the boiler shall be designed by a PE.

The responsible person shall complete attachment 4, Scaffold Integrity Checklist, as part of the planning process, prior to the prebid or prework meeting. The responsible person shall discuss in detail the scaffold work scope and the boiler work scope, including any work that may impact the structural integrity of the scaffold support structure. This completed Scaffold Integrity Checklist shall be shared with contractor, competent person, qualified person, and PE.

The plant responsible person shall request PE-designed scaffolds in advance. Design drawings will be reviewed to determine the design meets the requirements of the planned work.

A minimum of 2 weeks prior to installation of PE-designed scaffolding, the contractor shall provide the responsible person a PE-stamped engineering design drawing released for construction and the qualifications for the erection contractor's qualified and competent persons.

The responsible person shall provide the contractor with a copy of the Engineered Scaffold Inspection Form ([attachment 2](#)). The inspection points will be determined at this time.

The contractor shall inspect and certify the installation of the scaffold meets the requirements of the engineering drawing.

#### NOTE

When necessary to determine that the design allows access to the planned work, the Southern Company responsible person may accompany the inspector.

Each phase of the scaffold will be inspected as outlined below by the PE of record for scaffold design or his or her designee. The inspector shall not be involved with or responsible for the erection of the scaffold:

- Phase I will be at completion of the foundation level of the scaffold.

- Phase II will be at a midlevel point of the installation as agreed between the purchaser and the contractor.
- Phase III will be at the completion of the installation.

The representative of the contractor shall sign the Engineered Scaffold Inspection Form and present the inspection form to the Southern Company responsible person. With the exception of the responsible person who may accompany the inspector to ensure the design allows access to the planned work, no Southern Company Generation employee may use the scaffold before the Engineered Scaffold Inspection Form is completed and signed (see attachment 2).

After the responsible person has received the signed inspection documents from the contractor, the scaffold will be evaluated by competent persons representing Southern Company Generation, the contractor, and the company contracted to erect the scaffold. Any deficiencies shall be identified and corrected by the contractor before work from the scaffold begins. The appropriate scaffold inspection tag shall then be signed, dated, and placed at all points of scaffold access.

It is the responsibility of the responsible person to maintain for 3 years all records of:

- Attachment 2, Engineered Scaffold Inspection Form.
- Attachment 3, Engineered Scaffold Systems Checklist.
- Attachment 4, Scaffold Integrity Checklist.

No changes may be made to any structural members of a PE-designed scaffold without prior approval in writing from the PE of record who designed, approved, and signed the scaffold design drawing. Changes must be inspected by the PE of record or his or her designee.

Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the scaffold user. Scaffold components manufactured by different manufacturers shall not be modified to intermix them unless approved by the PE of record who designed, approved, and signed the scaffold design drawing.

## **4.5 Scaffold Tagging**

### **4.5.1 General Scaffold Tagging Requirements**

- A green scaffold tag designates a scaffold erected as per the standard as defined by the manufacturer and/or 29 CFR 1926, Subpart L.
- A yellow scaffold tag designates a scaffold that is safe to use but has been altered to suit a specific job. A yellow scaffold tag shall detail any hazards and the necessary protective measures. Yellow tags shall not be used as a substitute for scaffolds that can be fully completed. Yellow tags will not be used to authorize use of scaffold with inadequate bracing, footing, or support.

- A red tag designates a scaffold is in the process of being erected, changed, dismantled, or has been damaged. A scaffold with a red scaffold tag shall be considered unsafe and shall not be used.

#### **4.5.2 Installation and Removal of Scaffold Tags**

- A competent person shall inspect all scaffolds to determine whether a usable scaffold receives a yellow or a green tag. The competent person shall be responsible for signing, dating, and completing all pertinent information on the tag and affixing the tags.
- The scaffold tags shall be affixed to scaffold access points in a manner that makes it obvious the tag applies to the scaffold and will not interfere with normal access.
- Any scaffold user may remove a green or yellow scaffold tag if the scaffold is found to be deficient in any safety aspect (for example, the scaffold has been damaged, improperly modified, or is missing components). The person who removed the tag shall notify plant management the scaffold has been deemed unsafe for use. As soon as possible, the issue must be corrected.
- After a scaffold has been repaired, a competent person shall reinspect it and retag it accordingly.
- Per-shift inspections by competent persons shall be performed to ensure all scaffolds remain in a safe condition and tags are appropriately signed, dated, and legible.

#### **4.6 Inspection – All Hardware**

Scaffold erection crews shall inspect all components for defects as the erection proceeds. Any components found to be defective shall be set aside and tagged for repair or disposal.

All planking shall be scaffold grade as defined in the OSHA scaffold standard.

#### **4.7 Storage of Scaffolding**

Scaffold materials shall be temporarily stored in a manner that will protect and prevent damage to them. Scaffold materials, in particular wood scaffold planks, shall be stored under a protective roof when possible.

Scaffold materials shall not be left in work areas where they obstruct traffic and/or cause fire hazards. Scaffold material shall not be stored in a manner that blocks access to electrical equipment, fire protection equipment, or any emergency exits or equipment.

#### **5.0 KEY CONTACT**

For questions regarding the content and implementation of this procedure, contact the Southern Company Generation Safety and Health.



## **6.0 ATTACHMENTS**

- Attachment 1, Scaffold Tags Examples.
- Attachment 2, Engineered Scaffold Inspection Form.
- Attachment 3, Engineered Scaffold Systems Checklist.
- Attachment 4, Scaffold Integrity Checklist.

### Attachment 1, Scaffold Tags Examples

Do-Not-Use Scaffold Tag (Red)



Incomplete but structurally safe scaffold tag (Yellow)



Completed Scaffold Tag (Green)



### Attachment 2, Engineered Scaffold Inspection Form

The inspections listed below are to be performed by the PE of record for scaffold design or his/her designee. (4.3.7)

Plant _____		Unit # _____	WO No. _____
Erection Phase	Inspection Requirements		Inspected By
1	Founding system (base) Installed to vertical wall of boiler	The scaffolding system, to this point, is installed as required by the PE stamped drawing with no deficiencies and is ready to continue erection	
2	Scaffold erected to mid-point or work platform (dance floor)	The scaffolding system, to this point, is installed as required by the PE stamped drawing with no deficiencies and is ready to continue erection	
3	Scaffold complete	The scaffolding system is completely installed as required by the PE-stamped drawing with no deficiencies and is ready for use (Green Tag)	
4	Scaffolding system modified	PE-approved modifications to the scaffolding system have been completed as required by revised PE-stamped drawing with no deficiencies and is ready for use (Green Tag)	

Inspector's Comments	
Item	Note deficiencies and corrective action required (see chart below)

**Level of Urgency**

1. Red Tag Scaffold (DO NOT USE) Until Repairs are Completed for Items
2. Yellow Tag (RESTRICTED USE) Fall Protection Required
3. Green Tag (READY FOR USE) No Deficiencies

**Reinspect a scaffolding system after any repairs or modification.**

By signing below, contractor hereby certifies (1) inspection or reinspection of the scaffolding has been performed, (2) all corrective action required to correct deficiencies in the scaffolding has been taken, and (3) the scaffolding meets the requirements of the engineering drawing and is ready for safe use.

\_\_\_\_\_  
 Contractor representative  
 Reference 4.3.8

\_\_\_\_\_  
 Date

### Attachment 3, Engineered Scaffold Systems Checklist

This checklist is to be completed by the Southern Company Generation responsible person.

In the chart below, each area identified by an item number requires the name and initials of the responsible person in the appropriate column.

Plant	Unit #	Work Order No.

Item	Responsible Person <sup>1</sup> (print name)	Task	Initials	Date
1		Develop contracting strategy (include in prime package or contract direct)		
2		Identify qualified contractors/subcontractors		
3		Complete the Scaffolding Integrity Checklist. At the prebid or prework meeting, discuss in detail the boiler work scope including any work that may impact the integrity of the scaffold support structure. The completed Scaffold Integrity Checklist shall be shared with contractor, qualified person, competent person, or PE. (See attachment 4)		
4		At the prebid or prework meeting, discuss in detail the scaffolding work scope and provide Southern Company Generation Scaffold Safety Procedure, including engineered scaffold inspection requirements, with contractor, qualified person, competent persons, and PE. (See attachment 2)		
5		2 weeks prior to mobilization, obtain PE-stamped engineered drawings and qualified and competent persons qualifications from the erection contractor		
6		Identify the project evaluation team <sup>2</sup> and review engineered drawings to familiarize team members with the work scope.		
7		Meet with contractor qualified and competent persons, distribute the scaffold inspection form, and determine 3 points for approval. (See attachment 2)		
8		Conduct preinspection job safety briefing to review drawing and any information relevant to the particular brand or type scaffold used. Require the erector's qualified and competent persons to attend.		
9		Determine who is responsible from contractor for initial tagging and per-shift scaffold inspections for each phase of the project		
10		Review the tagging system requirements with the appointed competent persons		

**This document shall be maintained on plant site for 3 years.**

<sup>1</sup> The responsible person is the Southern Company Generation employee with responsibility for projects requiring engineered scaffold. At a minimum, the responsible person shall have completed scaffold user training SHIPS # 010554.

<sup>2</sup> The evaluation team shall consist of competent persons representing Southern Company, the contractor, and the company contracted to erect the scaffold.

### Attachment 4, Scaffold Integrity Checklist

This checklist shall be completed by the responsible person to identify the scope of work inside and outside of the boiler that may impact the load bearing capability of the scaffold support structure. This checklist shall be shared with the contractor, competent person, qualified person, and PE.

Plant:	Unit:	MWO:
Responsible Person ( <i>Print</i> ):	Responsible Person: ( <i>Sign</i> )	Date:


Question			Responsible Person's Initials
1.	Are there any plans to stage equipment (panels, burners, etc.) on the scaffolding that will add weight to the scaffold?	<input type="checkbox"/> YES ( <i>provide explanation</i> ) <input type="checkbox"/> NO	
	<i>Explanation:</i>		
2.	Are there any structural members (buckstays, trusses, tension bars, etc.) or structural tubes (rear waterwall hanger tubes) being cut or removed?	<input type="checkbox"/> YES ( <i>provide explanation</i> ) <input type="checkbox"/> NO	
	<i>Explanation:</i>		
3.	Will any work be completed on the cutout slopes? Any waterwall panel replacements in this area or a large quantity of panels replaced in the vertical walls? Are any structural modifications required on the boiler proper to complete a major section (Superheat, Reheat, etc) that may add weight or affect the integrity of the boiler? Will burner corners be replaced?	<input type="checkbox"/> YES ( <i>provide explanation</i> ) <input type="checkbox"/> NO	
	<i>Explanation:</i>		
4.	Will any work be in the lower dead-air space on any structural members or hangers?	<input type="checkbox"/> YES ( <i>provide explanation</i> ) <input type="checkbox"/> NO	
	<i>Explanation:</i>		
5.	Will any headers be unpinned or disconnected from structural steel in the lower furnace area?	<input type="checkbox"/> YES ( <i>provide explanation</i> ) <input type="checkbox"/> NO	
	<i>Explanation:</i>		
6.	Will any large water wall section be removed while the unit has installed scaffolding?	<input type="checkbox"/> YES ( <i>provide explanation</i> ) <input type="checkbox"/> NO	
	<i>Explanation:</i>		



# SOUTHERN COMPANY GENERATION

SCG-SH-2105

## INORGANIC ARSENIC

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
0	August 9, 2013		Executive Vice President and Chief Production Officer

## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS.....	3
3.0	GENERAL INFORMATION .....	3
4.0	EXPOSURE CONTROL .....	4
4.1	Control Measures.....	4
4.2	Written Compliance Program .....	4
4.3	Program Coordinator .....	4
5.0	EXPOSURE MONITORING .....	5
5.1	Frequency.....	5
5.2	Employee Notification .....	5
6.0	REQUIREMENTS WHEN EXPOSURES ARE ABOVE THE ACTION LEVEL (AL).....	6
6.1	Exposure Monitoring .....	6
6.2	Training.....	6
6.3	Arsenic Log.....	6
7.0	REQUIREMENTS WHEN EXPOSURES ARE ABOVE THE PERMISSIBLE EXPOSURE LIMIT (PEL) .....	6
7.1	Set-up and Control of a Regulated Area .....	7
7.2	Respiratory Protection .....	7
7.3	Protective Clothing.....	8
7.4	Storage and Disposal.....	9
7.5	Showers.....	9
7.6	Prohibited Activities.....	9
7.7	Housekeeping.....	9
7.8	Program Coordinator .....	10
8.0	OUTSIDE CONTRACTORS .....	10
9.0	RECORDKEEPING .....	10
9.1	Exposure Monitoring .....	11
9.2	Medical surveillance.....	11
10.0	REFERENCES.....	12
11.0	DOCUMENT REVISION LOG .....	12
12.0	ATTACHMENTS .....	12

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

The purpose of this document is to reduce or eliminate any potential employee exposure to inorganic arsenic and to comply with the federal Occupational Safety and Health Administration (OSHA) Inorganic Arsenic Standard (29 CFR 1910.1018).

### 1.2 Scope

This document applies to Southern Company Generating facilities where there is a potential exposures to inorganic arsenic due to accumulations of flyash and during ash handling activities.

## 2.0 DEFINITIONS

**arsenic:** This term refers to “inorganic” arsenic. Inorganic arsenic is copper aceto-arsenite and all inorganic compounds containing arsenic, except arsine, measured as arsenic (As).

**OSHA Action Level (AL):** Five (5) micrograms per cubic meter of air ( $5 \mu\text{g}/\text{m}^3$ ), averaged over any 8-hour period.

**OSHA Permissible Exposure Limit (PEL):** Ten (10) micrograms per cubic meter of air ( $10 \mu\text{g}/\text{m}^3$ ), averaged over any eight (8)-hour period.

**regulated area:** An area where worker exposures to inorganic arsenic, without regard to the use of respirators, are in excess of the permissible exposure limit.

## 3.0 GENERAL INFORMATION

As pulverized coal is burned, some non-combustible elements in the fuel, such as arsenic, remain in the flyash and bottom ash.

Under normal operating conditions flyash adheres to the relatively cooler surfaces in the upper portions of the boiler and the electrostatic precipitators. During normal operation, these areas are not accessible. During maintenance outages, when the interior of the boiler and precipitators are entered for inspection and maintenance work, there is potential for exposure to arsenic. During these activities, crew size is highly variable depending on work being performed. There may be several crews working during outages. Below is a list of activities that may result in exposure to arsenic.

- Inspections of unwashed boilers, precipitators and duct work
- Wash down of boilers, precipitators and duct work
- Vacuuming of boilers, precipitators and duct work
- Boiler tube replacement
- Maintenance activities that require welding, cutting or grinding



- Abrasive blasting
- Wire replacement in precipitators
- Working in or near regulated areas

Studies performed at various coal-fired generating plants have indicated that potential exposures to trace amounts of inorganic arsenic in flyash can possibly exceed the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limit (PEL) of 10 µg/m<sup>3</sup>.

## **4.0 EXPOSURE CONTROL**

### **4.1 Control Measures**

Engineering controls and work practices must be used to reduce arsenic exposure to the lowest possible level. Since the inside of boilers and precipitators are not entered during plant operation, traditional fixed engineering controls are neither practical nor feasible. The primary methods used to keep exposures to a minimum will be:

- Washing and/or vacuuming the interior of the boiler and precipitators before maintenance activities begin;
- Use of Induced Draft (ID)/Forced Draft (FD) Fans for ventilation during maintenance activities, and;
- Proper work practices that avoid unnecessarily generating airborne dust.

Controlling access to regulated areas will also keep the number of employees exposed to a minimum. If these control measures do not reduce exposure to or below the PEL, a regulated area must be established and workers must wear respirators and other necessary personal protective equipment.

### **4.2 Written Compliance Program**

Prior to performing an operation or activity where personal exposures to inorganic arsenic exceed or are expected to exceed the PEL, the facility must develop a written arsenic compliance program describing their worksite-specific procedures. This document, along with Attachment 1 - Site-Specific Information completed, will serve as each site's written arsenic compliance program.

The arsenic compliance program must be available at the work site for any OSHA inspector, affected employee or authorized employee representative. The plan must be annually reviewed and revised as necessary to reflect the current status of the program.

### **4.3 Program Coordinator**

The Plant Manager is ultimately responsible, through his/her designees, for the implementation of the program at a specific site. He/she shall designate a Program

Coordinator who will be responsible for program development and documentation. This Program Coordinator will be designated in the Site-Specific Information (Attachment 1).

## **5.0 EXPOSURE MONITORING**

### **5.1 Frequency**

Initial and periodic monitoring shall be performed for each plant and work operation where workers may be exposed to airborne concentrations of arsenic. Sampling must be at least seven hours in duration. These determinations shall be conducted using personal samples. Area samples cannot be used to represent employee exposures. All sampling methods used must have an accuracy of  $\pm 25\%$  for concentrations greater than the PEL and  $\pm 35\%$  for concentrations above the AL but below the PEL.

If monitoring indicates that employee exposure is above the PEL, monitoring must be repeated at least every three months.

If monitoring indicates that employee exposure is above the Action Level (AL) and below the Permissible Exposure Limit (PEL), monitoring must be repeated at least every six months.

Additional monitoring is required if there are any changes in production, process, controls, etc., which may affect employees' exposure to arsenic."

An area/activity that is regulated may be deregulated if a combination of engineering control work practices or housekeeping measures succeeds in lowering inorganic arsenic levels to below permissible levels for two successive sampling periods at least seven days apart. The practices, or measures, that were responsible for enabling an area/activity to be deregulated will be documented by the Program Coordinator.

#### **NOTE**

If the task that created the exposure is not performed within either the three-month or the six-month time frame described above, then exposure monitoring must be performed whenever that task is performed again.

### **5.2 Employee Notification**

Each employee shall be given a written notice of his/her monitoring results within fifteen (15) working days from the date the monitoring results are received. If the results show that the employee's exposure exceeds the PEL, the written notice must state that the PEL was exceeded and describe the corrective action to be taken to reduce exposure to or below the PEL. A system will be established to document that the employee has received his/her monitoring results.

Any worker (or that worker's designated representative) must be given the opportunity to observe arsenic exposure monitoring and receive the results.

## **6.0 REQUIREMENTS WHEN EXPOSURES ARE ABOVE THE ACTION LEVEL (AL)**

### **6.1 Exposure Monitoring**

Exposure Monitoring shall be conducted as described in section 5.0.

### **6.2 Training**

Employees must receive initial training before they work in an area where they are exposed to arsenic above the AL or for whom there is the possibility of skin or eye irritation from arsenic. Training shall be conducted upon initial assignment and annually thereafter and documented in SHIPS.

Training includes:

- An overview of the arsenic regulations;
- Sources of exposure;
- Health reasons for reducing potential exposure to arsenic;
- Administrative controls and/or housekeeping methods used to limit exposure;
- Use and limitations of respirators and protective clothing; signs and labels;
- Description of medical surveillance; hygiene facilities and practices, and;
- Access to medical records; and observation rights of monitoring.
- Access to OSHA inorganic arsenic standards and appendices.

### **6.3 Arsenic Log**

Arsenic logs, or an equivalent tracking method, are used to document when individual employee exposures to arsenic are over the AL for 30 or more days per year (12 consecutive months). See Attachment 2 - Arsenic Log for an example of a site-specific Arsenic Log. If employees are exposed above the AL for 30 or more days per year, without regard to respirator use, additional medical requirements must be met. Notify the Company's health and safety representative if your facility's tracking procedures show an employee's exposure (or assumed exposure) has exceeded 30 or more days of exposure above the AL during any 12 consecutive month period.

## **7.0 REQUIREMENTS WHEN EXPOSURES ARE ABOVE THE PERMISSIBLE EXPOSURE LIMIT (PEL)**

When exposures are above the PEL, a regulated area must be established, and the following conditions must be met.

## 7.1 Set-up and Control of a Regulated Area

If access is not already limited (in an area such as the furnace), mark the regulated area with a combination of double yellow tape, paint stripes, signs, personnel barriers, rope or safety tape. The marking of the regulated area must not prevent the use of emergency exits or stairs.

Limit the number of access points to the regulated area. Limit access to the area to authorized personnel.

Post signs at access points to the regulated area. The signs must be clearly visible and contain the following language:

**DANGER**  
**INORGANIC ARSENIC**  
**MAY CAUSE CANCER**  
**DO NOT EAT, DRINK, OR SMOKE**  
**WEAR RESPIRATORY PROTECTION IN THIS AREA**  
**AUTHORIZED PERSONNEL ONLY**

## 7.2 Respiratory Protection

Respiratory Protection is required while working in regulated areas where exposure may exceed the PEL. Employees required to wear respiratory protection must meet the fit-testing, medical, training and usage requirements of SCG-SH-1000, Respiratory Protection Program.

The following chart, Required Respiratory Protection for Exposure Levels, shows the appropriate types of respiratory protection required for different exposure levels.

<b>EXPOSURE LEVEL</b>	<b>REQUIRED PROTECTION</b>
<10 µg/m <sup>3</sup>	NONE
10-100 µg/m <sup>3</sup>	Half-face respirator with P-100 Series (i.e. HEPA) filters
100-500 µg/m <sup>3</sup>	Full-face respirator with P-100 Series (i.e. HEPA) filters
10-250 µg/m <sup>3</sup>	Powered-air-purifying respirator (PAPR) with P-100 Series (i.e. HEPA) filters

### NOTE

A combination P-100 Series (i.e. HEPA) filter and chemical cartridge respirator will provide additional protection in areas where sulfur dioxide (SO<sub>2</sub>) may also be released when flyash is disturbed.

## 7.3 Protective Clothing

### 7.3.1 Regulated Area

Employees entering a regulated area shall wear protective clothing, to include coveralls, gloves, boots, safety glasses and head covers, disposable or reusable. An area for cleaning and disposing of contaminated clothing shall be established in close proximity to the Regulated Area. Containers/bags shall be made available for receiving contaminated protective clothing after use. An area in the plant shall be designated for storing the sealed containers/bags prior to laundering or disposal.

Upon exiting a Regulated Area, each employee shall remove and place contaminated clothing in container/bag for disposal or cleaning. If exposure levels in Regulated Areas are above 100  $\mu\text{g}/\text{m}^3$ , exposed employees must first use the vacuum system to remove loose dust from their protective clothing and clean or change their shoes. Employees shall continue to wear respirators during vacuuming activities.

#### NOTE

The use of compressed air for cleaning contaminated clothing is prohibited.

### 7.3.2 Eating Area

There must be a lunchroom or clean eating area readily accessible to the employees who are working in a regulated area, and rest rooms must be provided. If an employee needs to enter break areas or office areas, contaminated clothing shall be removed. Good hygiene practice requires thorough washing of the hands and face prior to eating, drinking, or smoking.

### 7.3.3 Clothing Cleaning

The Company is responsible for the cleaning, laundering or disposal of protective clothing. See Section 7.4 for storage and disposal requirements. The Company must provide written information about the potentially harmful effects of arsenic exposure to any person who cleans or launders this clothing. Label containers with clothes to be laundered as follows:

#### **DANGER:**

**CONTAMINATED WITH INORGANIC ARSENIC. MAY CAUSE CANCER.**

**DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF INORGANIC ARSENIC CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS**

## 7.4 Storage and Disposal

Containers for inorganic arsenic and arsenic containing products, including protective clothing, must be properly covered to prevent dispersion of arsenic outside the container. The containers must be placed in an area designated for storage.

Disposal containers, when full or when work ceases in the regulated area, shall be properly sealed, labeled and placed in designated storage areas. Containers used to collect disposable clothing may be disposed of in landfills used by the facility after being properly labeled.

Containers of inorganic arsenic and arsenic containing products must be labeled as follows:

**DANGER:**

**CONTAMINATED WITH INORGANIC ARSENIC.**

**MAY CAUSE CANCER. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF INORGANIC ARSENIC CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.**

(The labels shall measure at least four inches square.)

## 7.5 Showers

Employees working in regulated areas shall shower at the end of the work shift. Shower facilities and change rooms equipped with storage facilities for street clothes and separate storage facilities for protective clothing (if reusable clothing is used) and equipment shall be made available. Plant shower facilities are sufficient for this requirement. All contaminated non-reusable clothing will be placed in labeled containers.

## 7.6 Prohibited Activities

The following activities are specifically prohibited in regulated areas:

- Smoking
- Consuming food or beverage
- Chewing tobacco or gum
- Applying cosmetics
- Changing of exhausted respirator cartridges

## 7.7 Housekeeping

- Keep all surfaces as free from accumulations of flyash as possible.

- Do not use compressed air to clean floors or other accessible surfaces contaminated with arsenic. Use shoveling and brushing only if vacuuming or relevant methods have been found to be ineffective.
- When vacuuming, use and empty the vacuums in a way that minimizes re-entry of arsenic into the work place.

## **7.8 Program Coordinator**

The site program coordinator has the following responsibilities:

- Coordinate with your safety and health representatives to ensure that employee exposure levels are monitored as required in section 6.2.
- Notify your safety and health representatives if you are about to conduct an activity that is similar to a previously conducted activity where the arsenic exposures exceeded the PEL or AL.
- Notify affected employees in writing of the results of monitoring within 15 working days following receipt of the results.
- Ensure that all employees that work in a regulated area receive training as outlined in section 6.2.
- Ensure that when employees are exposed above the action level (AL) more than 30 days per year they are included in an appropriate medical surveillance program.
- Ensure that all other requirements in section 6.0 and 7.0 are being met. Program Coordinator

## **8.0 OUTSIDE CONTRACTORS**

Prior to the admittance of any outside contractor or personnel into any area of the plant, the contractor shall be notified that an inorganic arsenic exposure hazard may exist in certain areas. In the event that a contractor performs work in those areas where there is a potential risk of exposure to arsenic, they shall abide by OSHA regulations 29 CFR 1910.1018.

## **9.0 RECORDKEEPING**

Keep the following records and documentation on file at the facility:

- Medical surveillance records related to employee arsenic exposures and the results of exposure monitoring and sampling. Keep these records for 40 years, or the duration of employment plus 20 years, whichever is longer.
- A copy of your facility's Arsenic Compliance Written Program (This program and completed site specific information – Attachment 1).

- A copy of the current year's Arsenic Log (See Attachment 2) or access to the site's equivalent arsenic exposure tracking data.

### **9.1 Exposure Monitoring**

Exposure monitoring shall include:

- The date(s), number, duration, location, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure where applicable;
- A description of the sampling and analytical methods used and evidence of their accuracy;
- The type of respiratory protective devices worn, if any;
- Name, social security number, and job classification of the employees monitored and of all other employees whose exposure the measurement is intended to represent; and
- The environmental variables that could affect the measurement of the employee's exposure.

### **9.2 Medical surveillance**

Medical surveillance shall include the following:

- The name, social security number, and description of duties of the employee;
- A copy of the physician's written opinions;
- Results of any exposure monitoring done for that employee and the representative exposure levels supplied to the physician; and

Any employee medical complaints related to exposure to inorganic arsenic.

In addition keep, or assure that the examining physician keeps, the following medical records:

- A copy of the medical examination results including medical and work history required under paragraph (n) of this section;
- A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information;
- The initial X-ray;
- The X-rays for the most recent 5 years; and
- Any X-rays with a demonstrated abnormality and all subsequent X-rays.



- A copy of the regulation, 29 CFR 1910.1018 and its appendices (Appendix A, B, & C), readily available to employees.

## 10.0 REFERENCES

- 29 CFR 1910.1018 Inorganic Arsenic
- 29 CFR 1910.1018, Appendix A - Inorganic arsenic substance information sheet
- 29 CFR 1910.1018, Appendix B - Substance technical guidelines
- 29 CRF 1910.1018, Appendix C - Medical surveillance guidelines
- 29 CRF 1910.134, Respiratory Protection

## 11.0 DOCUMENT REVISION LOG

0. May 21, 2003. Section 2105.500.C. - Modified Arsenic Log (Appendix II) for tracking 12 consecutive months.
1. July 5, 2005. Section 2105.400.C. & 2105.600.H.3 - changed employee notification time from five days to 15 days as specified by the OSHA Inorganic Arsenic Standard. Section 2105.500.C. - Revised to clarify recording requirements for tracking employee exposures above the Action Limit (5µg/m<sup>3</sup>).
2. May 11, 2006. Section 2105.300.B.2. & 2105.APP.I., Section IV - changed plan review period from every six months to every year.
3. October 31, 2006. Section 2105.600.F. Revised list of prohibited activities for consistency with OSHA Inorganic Arsenic Standard requirements.
4. October 28, 2011. Section 2105.600.- Deleted: Note: The OSHA Area Office must receive written notification within 60 days when a Regulated Area has been established at your facility. Notification is no longer required by OSHA.
5. August 1, 2012. Section 2105.600.C4. Changed language of Caution label.

## 12.0 ATTACHMENTS

Attachment 1, Site Specific Information

Attachment 2, Arsenic Log



**Attachment 1**  
**Site Specific Information**



**III. Exposure Monitoring and Tracking**

Attach or identify relevant monitoring data associated with these areas or activities.

**IV. Plan Reviews, Revisions, and Updates**

This Arsenic Compliance Plan will be reviewed, revised and/or updated annually to reflect the current status of the program. The date of review and name of reviewer will be documented below:

_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date
_____ Name	_____ Date

### ATTACHMENT 2

**Attachment 2  
Arsenic Log**



(For use when entering areas where exposure is above the OSHA Action Level.)

Name: \_\_\_\_\_ Start Date: \_\_\_\_\_ End Date: \_\_\_\_\_


	Date	Job Location	A. Work Description
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
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## Southern Company Operations Procedure

SCO-SH-0211

SWITCHYARD ACCESS

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
0	October 1, 2019		Executive Vice President–Operations

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## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose.....	3
1.2	Scope.....	3
2.0	DEFINITIONS, REFERENCES, AND RELATED DOCUMENTS .....	3
2.1	Definitions .....	3
2.2	References.....	4
2.3	Related Documents .....	4
3.0	RESPONSIBILITY .....	4
3.1	Contractor Representative .....	4
3.2	Facility Representative .....	5
3.3	Plant Manager .....	5
3.4	Plant Responsible Person .....	5
4.0	REQUIREMENTS .....	5
4.1	Switchyard Permit .....	5
4.2	Authorization Level .....	6
4.3	Work Completion.....	7
5.0	TRAINING .....	7
6.0	KEY CONTACT .....	8
7.0	QUALITY RECORDS .....	8
8.0	ATTACHMENTS .....	8

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure defines the process for safe access into generating plant switchyards and substations located on a Generation site.

### 1.2 Scope

This procedure applies to all persons (employees and contractors) accessing switchyards and substations that are under the control and operation of Southern Company Generation facilities.

## 2.0 DEFINITIONS, REFERENCES, AND RELATED DOCUMENTS

### 2.1 Definitions

**contractor** – Any legal entity that contracts with Southern Company to perform work.

**energized** – Equipment connected to a voltage source.

**minimum approach distance (MAD) for qualified workers**– from NESC.

Table 1

AC Live Work Minimum Approach Distance		
Voltage (phase-to-phase)	Phase to Ground (ft-in.)	Phase to Phase (ft-in.)
0 to 0.300 kV	Avoid Contact	Avoid Contact
.301 to .750 kV	1 ft 1 in.	1 ft 1 in.
.751 to 15 kV	2 ft 2 in.	2 ft 3 in.
15.1 to 36 kV	2 ft 7 in.	3 ft 0 in.
36.1 to 46 kV	2 ft 11 in.	3 ft 3 in.
46.1 to 72 kV	3 ft 4 in.	4 ft 0 in.
72.1 to 121 kV	3 ft 8 in.	4 ft 8 in.
121.1 to 145 kV	4 ft 3 in.	5 ft 5 in.
145.1 to 169 kV	4 ft 10 in.	6 ft 5 in.
169.1 to 242 kV	6 ft 8 in.	10 ft 2 in.
242.1 to 362 kV	11 ft 2 in.	18 ft 2 in.
362.1 to 550 kV	16 ft 8 in.	27 ft 1 in.

**minimum approach distance (MAD) for unqualified workers**– from NESC.

**Table 2**

<b>AC Live Work Minimum Approach Distance</b>	
<b>Voltage (phase-to-phase)</b>	<b>Distance to employee (ft-in.)</b>
0 to 50 kV	10 ft
51 to 115 kV	13 ft
116 to 230 kV	16 ft
231 to 500 kV	25 ft

**qualified electrical worker** – One knowledgeable in the construction, maintenance, or operation of electric power generation, transmission, and distribution (including all associated equipment and hazards).

**secured perimeters** – Barriers on all sides of a switchyard adequate to prevent access without authorization (such as fencing, walls, painted borders with clearly identifiable markings, and doors with signage).

**unqualified electrical worker** – One who does not possess the knowledge, skills, or techniques of a qualified electrical worker.

## **2.2 References**

- NESC/ANSI C2
- OSHA (1910.269)

## **2.3 Related Documents**

- SCG-SH-0210, Southern Company Generation Arc Flash Protection
- Form 0211.1, Switchyard Permit
- Document 0211.2, Guidance Document - Pre-Approval Switchyard Work
- Document 0211.3, Guidance Document - Low Authorization Switchyard Work
- Document 0211.4, Switchyard Access Process Template

## **3.0 RESPONSIBILITY**

### **3.1 Contractor Representative**

The contractor representative is responsible for all subcontractors under his or her direction.



### **3.2 Facility Representative**

The facility representative is responsible for:

- Issuing and closing switchyard permits.
- Categorizing all persons requesting switchyard access into the appropriate authorization level.
- Determining if accompaniment by a trained employee is necessary for switchyard work.

### **3.3 Plant Manager**

The plant manager is responsible for adherence to this procedure.

### **3.4 Plant Responsible Person**

The plant responsible person is responsible for ensuring the work completion tasks are completed.

## **4.0 REQUIREMENTS**

### **4.1 Switchyard Permit**

Each plant shall have a process to control access and work activities in its switchyards and substations via a switchyard permit procedure. The goal is to create a process to control access to and monitor work in plant switchyards and substations.

Each facility shall use the template provided in the safety permitting software when available. A paper copy of the permit (see attachment A, Switchyard Permit Example) will be used until the safety permitting software is operational. The permit shall include at least the following:

- Facility representative responsible for issuing the permit.
- Contractor representative associated with the work.

#### **NOTE**

Contractor representative is responsible for all subcontractors under his or her direction.

- Date permit is issued.
- Date permit is closed.
- Box indicating if lockout tagout (LOTO) is required for work.
- Box indicating if Single Line Drawings were reviewed prior to beginning work (where applicable).
- Box indicating if work was preapproved for Transmission.

- Description of the work to be performed.
- Facility representative responsible for closing the permit.
- Permit location.

All Southern Company employees, contractors, and subcontractors who request a switchyard permit shall be assigned an authorization level prior to entering the facility switchyard.

## 4.2 Authorization Level

The facility representative shall categorize all persons needing switchyard access into the appropriate authorization level: low, medium, or high. Requests may be written or verbal but must be identified in the facility site-specific process.

### 4.2.1 Low Authorization Level

Permit Requirement	Training Requirement
No permit required	Switchyard awareness training (minimum)

A low authorization level is for emergency work, preapproved transmission and distribution work, and work activities considered low risk, such as:

- Switching by trained plant employees.
- Visual inspections associated with job scope determinations (escorted by a trained employee).
- Operations rounds and routine work assignments.
- Walking through for inspections including thermography and firehouse inspections.

Low-risk activities do not require climbing, and personnel remain outside the minimum approach distance (MAD) for qualified workers.

### 4.2.2 Medium Authorization Level

Permit Requirement	Training Requirements
Permit required (pre-approved work allowed with permit)	<ol style="list-style-type: none"> <li>1. Switchyard awareness training (minimum).</li> <li>2. Meet requirements for an unqualified electrical worker as defined by OSHA if working in unqualified MAD (minimum).</li> </ol>

A medium authorization level is for troubleshooting and maintenance work outside the MAD for qualified workers but within the MAD for unqualified workers. Work activities are at ground level and do not require climbing or handling conductive material that could be extended into the MAD. Examples of medium authorization level work include:

- Fire equipment flow test.
- Transformer oil testing (by contractor).

- Staging equipment or materials.

The facility representative shall determine if those doing medium authorization level work need to be accompanied by a trained employee.

#### 4.2.3 High Authorization Level

Permit Requirement	Training Requirements
Permit required (pre-approved work allowed with permit)	<ol style="list-style-type: none"><li>1. Switchyard awareness training (minimum)</li><li>2. Meet requirements for a qualified electrical worker as defined by OSHA if working in qualified MAD (minimum)</li></ol>

A high authorization level is for the following types of work:

- Dismantling energized equipment.
- Work inside MAD for qualified worker.
- Work inside MAD for unqualified worker but outside MAD for qualified worker that requires elevated work or materials that have the potential to encroach on the qualified MAD (such as running conduit, piping, and steel erection).
- Work that is independent of MAD distance and requires any kind of telescoping or elevating platforms (such as scaffolding, aerial lifts and cranes, and ladders and portable stairs).

#### NOTE

Facility may choose to preapprove routine work conducted by facility trained personnel. Approval must be documented.

The facility representative shall determine if those doing high authorization-level work need to be accompanied by a trained employee.

#### 4.3 **Work Completion**

Upon completion of the work, the plant responsible person shall ensure the following:

- All workers under the purview of the permit have vacated the switchyard.
- All work is complete, and the work area is returned to a safe state.
- Document is stored in its designated location.

Documentation shall be retained for a period of current year plus one previous year.

#### 5.0 **TRAINING**

All Southern Company Generation employees and other personnel working under the requirements of this procedure shall be trained in the use of this procedure.

All Southern Company employees entering a facility switchyard shall have Switchyard Awareness training at a minimum, except Southern Company employees who are escorted by a trained Southern Company employee.

All non-Southern Company persons entering a switchyard shall have the adequate level of training identified by their authorization level as determined by the facility representative.

## **6.0 KEY CONTACT**

For questions regarding the content and implementation of this document, contact your safety and health representative.

## **7.0 QUALITY RECORDS**


Switchyard permits are official records and shall be retained in accordance with the Southern Company Records Retention Schedule.

## **8.0 ATTACHMENTS**

Attachment A, Switchyard Permit Example

Attachment B, Version History

Attachment A – Switchyard Permit Example

<b>Form 0211.1</b> <b>Switchyard Permit</b> <b>Number</b> _____ SCO-SH-0211, Switchyard Access  Form updated mm-dd-2019		
DESCRIPTION OF WORK		
Plant:	Work Performed By:	Date Created
Detailed Work Description:		
The following items shall be completed prior to Approving Switchyard Permit		
<b>Yes</b>	<b>No</b>	
<input type="checkbox"/>	<input type="checkbox"/>	Is Lock-Out Tag-Out Required?
<input type="checkbox"/>	<input type="checkbox"/>	Have Single Lines been reviewed prior to work being performed?
<input type="checkbox"/>	<input type="checkbox"/>	Has a Job Safety Briefing been performed?
Approval of Switchyard Permit		
I have confirmed precautionary measures are in place and authorize the Switchyard Permit.		
Southern Company Facility Representative	Signature	Approval Date
Contractor Representative	Signature	Approval Date
Operations Representative (If Needed)	Signature	Approval Date
		Contact#
		Contact#
		Contact#
Authorization for closeout of permit		
The work area has been restored to a safe condition.		
Southern Company Facility Representative	Signature	Release Date:

### Attachment B – Version History

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Rev. 0  
10-01-2019

Approved by Stan Connally  
Revised by David Myers, Steve McVay

Remarks:  
Issued.


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# SOUTHERN COMPANY OPERATIONS PROCEDURE

SCO-SH-0812

## RIGGING AND LIFTING

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>
0	02/22/2021		Executive Vice President– Operations

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## Contents

1.0	PURPOSE AND SCOPE .....	3
1.1	Purpose .....	3
1.2	Scope .....	3
2.0	DEFINITIONS, REFERENCES, AND FORMS .....	3
2.1	Definitions .....	3
2.2	References .....	3
2.3	Forms .....	4
3.0	RESPONSIBILITY .....	4
3.1	Management .....	4
3.2	Responsible Person(s) .....	4
3.3	Qualified Rigger .....	5
4.0	PROCEDURE .....	6
4.1	Southern Company-Specific Requirements .....	6
4.2	Lift Categories and Criteria .....	7
4.3	Standard and Intermediate Lift Requirements .....	7
4.4	Critical Lifts .....	8
4.5	Contractor Requirements .....	10
5.0	KEY CONTACT .....	11
6.0	QUALITY RECORDS .....	11
7.0	ATTACHMENTS .....	11



## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure provides the requirements for rigging and lifting.

### 1.2 Scope

This procedure applies to Southern Company Operations employees. For contractors whose contract references this procedure, contractor-specific requirements are identified in section 4.5, Contractor Requirements.

## 2.0 DEFINITIONS, REFERENCES, AND FORMS

### 2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

**critical lift** – A lift of 75 percent or more of the crane's rated capacity at its current configuration, or a lift involving two or more lifting devices, at least one of which is a crane. Additional site-specific criteria may apply such as, but not limited to, the value of the load or lifting over process equipment where a loss of the load could cause a plant shutdown.

**engineered lift** – Any lift that requires or has been planned by a registered professional engineer (P.E.) and stamped accordingly.

**qualified rigger** – A rigger who:

- Possesses a recognized degree, certificate, or professional standing, or
- Has extensive knowledge, training, and experience, and
- Can successfully demonstrate the ability to solve problems related to rigging loads.

Employers must determine whether a person is qualified to perform specific rigging tasks. Each qualified rigger may have different credentials or experience.

**responsible person** – A qualified rigger who has overall responsibility for directing the lifting and rigging activity. A responsible person may be a supervisor, superintendent, team leader, journeyman, and so forth, as assigned by local management.

### 2.2 References

Frequently Asked Questions (FAQ), SCO-SH-0812, Rigging and

Lifting Code of Federal Regulations:

- [29 CFR 1910, Subpart N](#)
- [29 CFR 1926.251, Rigging equipment for material handling](#)
- [29 CFR 1926.554 \(a\)\(2\), Overhead hoists; General requirements](#)
- [29 CFR 1926, Subpart R, Steel erection](#)
- [29 CFR 1926, Subpart CC, Cranes and derricks in construction](#)
- [29 CFR 1926.1432, Multiple-crane/derrick lifts – supplemental requirements](#)

Generation:

- SCG-SH-4000, Overhead and Gantry Crane Operator Qualification and Inspection
- SCG-SH-4010, Qualified Mobile Crane Operator
- Southern Safety Tri-Lateral Stop Work Authority
- Southern Company Record Retention Schedule

Technical and Project Solutions:

- T&PS Contractor Environmental, Health, and Safety Specifications
  - Section 16, Deviation Requests
  - Section 30, Chains, Slings, and Miscellaneous Rigging Accessories
  - Section 52, Qualifying Equipment Operators
  - Section 53, Cranes, Derricks, and Powered Hoists

## 2.3 Forms

- Form 0812.1, Rigging and Lifting Plan – Critical Lift
- Form 0812.2, Intermediate Lift – Prelift Worksheet/Rigger’s Reference Sheet

## 3.0 RESPONSIBILITY

### 3.1 Management

Local management is responsible for:

- Implementing and ensuring compliance with this procedure.
- Ensuring affected employees are trained on the requirements of this procedure.
- Ensuring rigging and lifting activity is supervised by a responsible person.
- Contract administration of contractors whose contract includes this procedure.

### 3.2 Responsible Person(s)

The responsible person(s) is responsible for:

- Ensuring lifting equipment meets all requirements prior to initial site usage.

- Ensuring qualified rigger(s) are assigned.
- Planning or assisting in planning of lifts as specified in this procedure.
- Ensuring lifting operations are coordinated with other jobsite activities that will be affected by or will affect lift operations.
- When using a mobile crane, ensuring the area is adequately prepared. The preparation includes, but is not limited to, the following:
  - Access roads for the crane and associated equipment.
  - Sufficient room to assemble or disassemble the crane.
  - An operating area that is suitable for the crane with respect to levelness, surface conditions, ground-bearing ability, proximity to power lines, excavations, slopes, underground utilities, subsurface construction, and obstructions to crane operations.
  - Traffic control as necessary to restrict unauthorized access to the crane's working area.
- Ensuring crane operators meet the requirements outlined in SCG-SH-4000, Overhead and Gantry Crane Operator Qualification and Inspection, and SCG-SH-4010, Qualified Mobile Crane Operator.
- Ensuring conditions that could adversely affect crane operations are addressed. Such conditions include, but are not limited to:
  - Poor soil conditions.
  - Wind velocity or gusting winds.
  - Heavy rain.
  - Fog.
  - Extreme cold.
  - Artificial lighting.
- Ensuring precautions are implemented when hazards associated with special lifting operations are present. Such operations include, but are not limited to, the following:
  - Critical Lifts.
  - Pick-and-carry operations.
  - Multiple load line use.

#### NOTE

The responsible person fulfills the requirements of a lift director as defined by 29 CFR 1926, Subpart CC.

### 3.3 Qualified Rigger

The qualified rigger(s) responsibilities include but are not limited to:

- Know and verify weight(s) of all loads.
- Attach and detach loads properly.
- Select proper rigging equipment for the task.
- Maintain control of suspended loads at all times.

- Plan or assist in planning of lifts as required.
- Follow lift plans.
- Communicate with all team members effectively.
- Ensure compliance with all safety rules and regulations.
- Perform pre-use inspection and maintain all rigging equipment to ensure safety.
- Use Stop Work Authority when unsafe conditions exist.

#### 4.0 PROCEDURE

##### 4.1 Southern Company-Specific Requirements

- A qualified rigger shall be present at all times.
- If radios are used for communication during a lift, a dedicated frequency for each crane with no other radio traffic shall be used.
- An engineering design or P.E.-stamped reference drawing shall be used for all new installations of pad eyes and lifting lugs to include application requirements such as weld amount, base metal requirements, and so forth.
- All pin holes for lifting hardware shall be drilled or punched or otherwise created per design specifications. No other method of creating pin holes is acceptable.
- All structural components or objects used to attach or to support rigging or hoisting equipment must be verified by a responsible person as having sufficient strength to support the safe working load equal to that of the hoist(s).

##### NOTE

If necessary due to size, complexity, or location of the lift, this calculation may require engineering support.

- **Beam clamps as a below-the-hook rigging point shall be restricted by Southern Company Operations.**

##### NOTE

The use of beam clamps as a below-the-hook rigging point on a load is prohibited unless specifically designed by the manufacturer and approved by Southern Company management prior to the lifting operations.

- After the completion of a lift (critical or noncritical), the responsible person and/or qualified rigger supervising the lift shall conduct a postlift debriefing.

##### NOTE

This debriefing is intended to be an informal review of the lift and may be conducted verbally. However, any noteworthy items should be communicated to local management.

## 4.2 Lift Categories and Criteria

For lift categories and criteria, see table below.

Lift Category	Lift Criteria
Standard (noncritical)	Any one or more of the following characteristics: <ul style="list-style-type: none"><li>• Load weights up to 2,000 lb.</li><li>• Single or multiple hoisting (noncrane) equipment is used for a common load.</li></ul>
Intermediate (noncritical)	<ul style="list-style-type: none"><li>• Load weight of 2,001 lb or more up to 75 percent of the lifting device's capacity in the current configuration.</li></ul>
Critical	<ul style="list-style-type: none"><li>• A lift of 75 percent or more of the crane's rated capacity in its current configuration for mobile cranes.</li><li>• A lift that involves two or more lifting devices of which at least one is a mobile crane.</li><li>• Additional site-specific criteria may apply such as, but not limited to:<ul style="list-style-type: none"><li>– Value of the load.</li><li>– Lifting over process equipment where a loss of load could result in a plant shutdown.</li></ul></li></ul>

## 4.3 Standard and Intermediate Lift Requirements

### 4.3.1 Planning (Standard and Intermediate Lift Requirements)

- Lift plan documentation:
  - Standard lifts – Planning is to be performed by a responsible person and hazards to be documented through the job safety analysis (JSA) or job safety briefing (JSB) process.
  - Intermediate lifts – Planning is to be performed by a responsible person and documented on form 0812.2, Intermediate Lift – Prelift Worksheet.

#### NOTE

For repetitive lifts or lifts from a common position, a single intermediate lift checklist may be used based on the heaviest weight and the largest radius.

#### NOTE

Completing form 0812.2, Intermediate Lift – Prelift Worksheet, does not replace any local requirement to perform a pretask JSA or JSB.

- Verify load weight by vendor drawings, bill of lading documents, experience or training, or other reliable resource recognized as trustworthy by the site management team.
- Identify all required equipment to safely execute the plan.
- Fully inspect all rigging and hoisting equipment involved in the lift.

#### **4.3.2 Prelift Meeting (Standard and Intermediate Lifts)**

- Immediately prior to the lift, the responsible person and/or qualified rigger shall conduct a prelift meeting.
- All personnel involved with the lift shall attend and have a full understanding of all aspects of the lift. Collective discussions should be used to verify the personnel involved understand the plan and their responsibilities.

#### **4.3.3 Execution (Standard and Intermediate Lifts)**

- The qualified rigger shall verify all rigging and arrangements are as specified in the plan.
- If for any reason the lift plan must change, all work must stop. Notify the responsible person for his or her review of the revision to the plan and document the change(s) on form 0812.2, Intermediate Lift – Prelift Worksheet, or the appropriate prejob safety document (JSA, JSB, or equivalent) prior to continuing.
- Any person involved in the lift has the obligation to use Stop Work Authority to stop the lift at any point if he or she believes an unsafe condition exists or potentially may occur.

### **4.4 Critical Lifts**

#### **4.4.1 Exemptions to Critical Lift Requirements**

Permanently installed cranes in generating facilities designed for maintenance functions are exempted from critical lift requirements under the following circumstances:

- The crane is used for its designed function. For example, an overhead crane installed for boiler feed pump maintenance is used for removal and replacement of the boiler feed pump.
- The weight of the load does not exceed the working load limit (WLL) of the crane and its support devices.
- A P.E.-stamped or Southern Company Operations rigging and lifting subject matter expert (SME)-reviewed lift plan is on file and is used for the lift.
  - The lift plan shall be reviewed by the responsible person and, if requested, by the Southern Company Operations rigging and lifting SME to ensure it is current for the task.
  - A single lift plan may be used for repetitive lifts.

#### **4.4.2 Planning (Critical Lift)**

- Each critical lift plan shall include, at a minimum, the elements identified in form 0812.1, Rigging and Lifting Plan – Critical Lift, including the following:
  - Manufacture, model, and capacity of the crane(s).
  - Manufacturer-provided capacity charts of the crane(s).

- Working radius of the crane(s).
  - Boom length(s), counterweight amounts, and specific boom angle(s).
  - Weight of the load, including rigging, load block, headache ball, and cable.
  - The method used to determine the weight of the load.
  - Size and capacity of all rigging hardware. (All rigging and rigging accessories shall undergo a thorough, documented inspection prior to use in a critical lift. The manufacturer’s specification sheets and certificates of inspection and testing, shall be made available for review upon request.)
  - A rigging arrangement illustration indicating rigging arrangement and attachment points to hoisting equipment and loads.
  - A plot plan showing crane(s) location with pick, swing, and set points.
  - Documentation that ground-bearing pressure is sufficient to support the weight of the load and equipment. The documentation shall include calculations, if any, for matting design to achieve sufficient support.
  - Questions regarding the ground bearing pressure are to be directed to the Southern Company Operations rigging and lifting SME.
  - In multicrane and/or hoist lift planning, “load share” amounts must be calculated and documented in the plan, based on, but not limited to, load geometry and rigging attachment locations on the load.
  - Plan approval signatures.
- Critical lift plans shall be:
    - Approved and stamped by a professional engineer (P.E.).
    - Reviewed by the responsible person and if requested, by the Southern Company Operations rigging and lifting SME.

#### **4.4.3 Prelift Meeting (Critical Lift)**

Immediately prior to a critical lift, the responsible person shall conduct a prelift meeting with all personnel involved with the lift to ensure all personnel have a full understanding of all aspects of the lift. All personnel involved in the lift shall attend. The lift crew shall engage in collective discussions to verify that all personnel involved understand the lift process.

At the prelift meeting, the responsible person shall:

- Discuss in detail all hazards associated with the plan and address accordingly.
- Assign the roles and responsibilities to all lift personnel as detailed in the lift plan.
- Review and discuss the critical lift plan with all personnel involved in the lift.
- Ensure all rigging components are verified with the requirements found on the P.E. stamped lift plan.

#### **4.4.4 Execution (Critical Lift)**

The execution of a critical lift shall meet the following requirements:

- A copy of form 0812.1, Rigging and Lifting Plan – Critical Lift, and, if applicable the engineered lift plan, shall be kept in the operator’s possession until the lift is completed.
- Critical lifts shall be executed following the requirements of the plan(s).
- After the lift begins, the responsible person shall observe the lifting activities at all times. If for any reason the responsible person must leave, the lift shall be stopped and made safe by returning the load to the ground, securing the load, or landing the load in place, whichever is safer.
- During the lift, the responsible person shall have no other duties that distract his or her focus from the lift’s activities/progress or involved personnel.
- Ensure the qualified rigger has performed an inspection on all rigging hardware.
- After the lift begins, the crane operators shall communicate with the responsible person supervising the lift regarding the load cell weight readings on both the primary lifting crane(s) and the tailing crane (if present). If the load is greater than anticipated in the lift plan, the responsible person must stop the lift and consult the P.E.
- The crane operator shall not override load cell readings, alarms, or any other safety systems unless authorized by the responsible person and then only if it is within the manufacturers specifications.
- If for any reason the plan must change, all must stop, and notify the responsible person supervising the lift. If the lift cannot proceed per the requirements of the engineered lift plan, the lift must be returned to the ground until it can be performed per the requirements of the plan or a revised engineered lift plan can be obtained and approved.

#### **4.5 Contractor Requirements**

- Contractors shall comply with all federal, state, and local regulatory requirements.
- Contractors shall meet or exceed the requirement identified in section 4.1, Southern Company-Specific Requirements.
- Contractor shall meet or exceed the requirements identified in section 4.4, Critical Lifts, and the identified items below:
  - The contractor shall develop an engineered rigging and lifting plan and complete form 0812.1, Rigging and Lifting Plan – Critical Lift, or equivalent for all critical lifts. The following criteria shall be used to determine when a lift is deemed critical:
    - A lift of 75 percent or more of the crane’s rated capacity at its current configuration, or a lift involving two or more lifting devices, at least one of which is a crane. All multiple crane lifts shall meet the requirements of 29 CFR 1926.1432, Multiple-crane derrick lifts – Supplemental requirements.
    - Site-specific requirements may also apply, for example, specialty equipment with high value, nonroutine complex lifts, or at Purchaser’s request.



- The contractor’s critical lift plan shall be stamped by a professional engineer (P.E.). The contractor’s site manager shall approve the written critical lift plan and submit the plan for review by the Purchaser, 15 calendar days, or as otherwise approved by the Purchaser prior to the lift. This review should include the Purchaser’s responsible person, as appropriate. The Purchaser or its agent reserves the right to review all rigging and lifting plans and may reject for cause.
- A qualified responsible person shall complete the form 0812.2, Intermediate Lift – Prelift Worksheet, or equivalent for all noncritical lifts greater than 2,000 lb when using any crane, drum hoist, chain hoist, lever hoist, or grip hoist.
- For lifts less than 2,000 lb, prelift planning shall be documented on the pretask planning document (JSA, JSB, PJB, or similar).

#### NOTE

For the forms referenced above, contractors may use their own forms, provided they address the minimum requirements of the procedure and have been reviewed and approved by the Purchaser.

#### **4.5.1 Subcontractor Management**

Contractors are responsible for ensuring subcontractors under their management meet the minimum requirements established by this procedure as part of the contractor’s approved safety plans.

#### **5.0 KEY CONTACT**

For questions about the content and implementation of this procedure, contact the manager—Operations Safety and Health – Corporate.

#### **6.0 QUALITY RECORDS**

Completed forms 0812.1 and 0812.2 shall be retained as required by the Southern Company Record Retention Schedule.

#### **7.0 ATTACHMENTS**

Attachment A, Version History

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Attachment A – Version History

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Rev. 0, 02/22/2021

Approved by Stan Connally  
Reviewed by T&PS SLT, Paula Marino, Generation GAC  
Prepared by David Myers

Remarks:

Issued. This Operations procedure supersedes T&PS Environmental, Health, and Safety (EH&S) procedure SH-2A-10, Rigging and Lift Plans.

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05/17/2021

Approved by Alan Kilgore  
Updated references and links from T&PS procedures to T&PS Contractor Environmental, Health, and Safety Specifications (2.2).

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01/21/2022

Approved by Alan Kilgore  
Added reference and link to FAQ (2.2).

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# SOUTHERN COMPANY OPERATIONS PROCEDURE

SCO-SH-0900

BARRICADES

<i>Revision</i>	<i>Approval Date</i>	<i>Approved by</i>	<i>Title</i>	<i>Effective Date</i>
0	7/19/2017	<i>Ted McCullough</i>	Executive Vice President and Chief Production Officer, Southern Company Generation	1/1/2018
	7/19/2017	<i>Paula Marino</i>	Executive Vice President, Technical and Project Solutions	

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CONTENTS

1.0 PURPOSE AND SCOPE ..... 3  
    1.1 Purpose ..... 3  
    1.2 Scope ..... 3  
2.0 DEFINITIONS AND REFERENCES ..... 3  
    2.1 Definitions ..... 3  
    2.2 References ..... 3  
3.0 RESPONSIBILITY ..... 4  
    3.1 Management ..... 4  
    3.2 Contractors ..... 4  
    3.3 Safety and Health Compliance Personnel ..... 4  
4.0 PROCEDURE ..... 4  
    4.1 Non-Rigid Barricades ..... 4  
    4.2 Barricades – Protective (Rigid) ..... 6  
    4.3 Traffic Barricades and Signs ..... 7  
    4.4 Barricade Removal ..... 7  
    4.5 T&PS Site-Specific Procedures ..... 7  
5.0 TRAINING ..... 7  
6.0 ATTACHMENTS ..... 7  
Attachment 1 – Barricade Tag ..... 8

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure provides instructions for the use of rigid and non-rigid barricades to minimize exposure to hazards such as, but not limited to, slips, trips, falls, overhead work, leaks, chemicals, radiation, and high temperatures.

### 1.2 Scope

This procedure applies to all Southern Company Operations employees and contractors at generating facilities and Technical and Project Solutions (T&PS) project locations.

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**contractor responsible person** – The contractor employee responsible for the work; may include job titles such as foreman, general foreman, and craft supervisor.  
Note: The contractor responsible person may change over the course of a project.

**guardrail system** – A barrier erected to prevent workers from falling to lower levels that consists of top rail at 42 in.,  $\pm$  3 inches, a mid-rail centered between top rail and working surface, and a toe board. (Note: “Guardrail system” is equivalent to the OSHA definition of “standard railing” plus “standard toe board” for General Industry from 29 CFR 1910.21, Walking-Working Surfaces.)

**non-rigid barricade** – Barrier that serves only as a warning and is not designed to prevent workers from falling to a lower level. For the purposes of this procedure, barricade tape is used to erect non-rigid barricades.

**responsible person** – The Southern Company employee or designated third-party agent responsible for overseeing the work; may include job titles such as contract coordinator, T&PS coordinator, discipline lead, or team leader. The responsible person may change over the course of a project.

**rigid barricade** – Barrier typically constructed of wood, steel, scaffold components, or other structurally substantial materials capable of withstanding without failure, a force of at least 200 lb. applied in a downward or outward direction within 2 in. of the top edge, at any point along the top rail. Toe boards are required on a rigid barricade where there is a risk of debris falling on workers at a lower level.

**traffic barricade** – A barrier used to control traffic by closing, restricting, or delineating all or a portion of the right-of-way of a public roadway to protect employees from vehicular traffic.

### 2.2 References

- Barricade (0900) and Open Hole (0910) Procedures Frequently Asked Questions (FAQ)

- 29 CFR 1910.21, Walking-Working Surfaces, Definitions
- 29 CFR 1910.23, Guarding Floor and Wall Openings and Holes
- 29 CFR 1926.502(b), Fall Protection Systems Criteria and Practices, Guardrail Systems
- Part VI of the Manual on Uniform Traffic Control Devices (1988 Edition, Revision 3, or the Millennium Edition)
- SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal

### **3.0 RESPONSIBILITY**

#### **3.1 Management**

Plant management and project management are responsible for implementing and ensuring compliance with this procedure, which includes ensuring affected employees are trained on the requirements of this procedure.

#### **3.2 Contractors**

Contractors working on Southern Company Operations sites are responsible for complying with the requirements established within this procedure to include communicating the requirements to their employees and subcontractors.

#### **3.3 Safety and Health Compliance Personnel**

Facility/Project Safety and Health Compliance personnel are responsible for the following:

- Facilitate employee training.
- Assist with walking and working surface hazard recognition.
- Provide technical assistance for barricade selection and use.

### **4.0 PROCEDURE**

#### **4.1 Non-Rigid Barricades**

##### **4.1.1 General Requirements**

A barricade tag shall be affixed to all non-rigid barricades in a prominent location. Multiple barricade tags should be used when necessary (for example, large barricades or multiple approach paths). Barricade tags shall be predominately orange in color and, at a minimum, include the following:

- Name of the Company/Contractor
- Name of the person responsible for the barricade for each shift where work is being performed and means of contact (for example, radio or phone number).
- Date barricade was erected.
- Reason for barricade – include actual and/or potential hazard(s).

Attachment points for barricade tape should be approximately the same height as a standard upper handrail

Person(s) erecting non-rigid barricades shall ensure the required area is completely barricaded to prevent workers from accidentally entering the hazardous area. For example, in addition to barricading same-level access to the hazardous area, stairway and ladder access also must be barricaded.

When placing barricade tape, ensure exits and emergency vehicle routes are not blocked, unless necessary for employee safety. The barricaded area shall be of the appropriate size to delineate the hazard, but not so large as to create an unnecessary problem for normal pedestrian flow of traffic. The practice of securing barricade tape to buildings and other permanent structures often results in an excessively large barricaded area. Suitable anchor points for the barricade tape shall be selected. Barricade tape shall not be attached to equipment (pumps, fans, motors, etc.) without approval of the operating department or system owner. Stanchions, traffic cones, saw horses, and other portable anchor points are preferred because they can be better positioned.

Barricades shall be maintained in good condition while in use; when no longer required, barricades shall be completely removed, including loops of tape tied around supports. Tape shall be properly disposed of if not properly stored for reuse.

When non-rigid barricades are erected around excavations, they shall be placed at least 6 ft from the edge of the excavation.

#### NOTE

Each employee on walking/working surfaces shall be protected from falling through or stepping into holes or openings, regardless of the fall potential, by personal fall arrest systems, covers, or guardrail systems erected around such hazards.

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#### WARNING

**Non-rigid barricades shall not be used as a substitute for rigid barricades when protecting workers from fall hazards.**

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When necessary, auxiliary lighting or other means shall be used to ensure barricades remain visible even at nighttime.

#### 4.1.2 Danger Barricades (Red)

Predominantly red (black striping is permissible) barricade tape printed with the word "DANGER" shall be used to erect barricades for areas that contain or may present an immediately dangerous to life and health (IDLH) situation. Activities or conditions warranting a red danger barricade may include areas:

- Where overhead lifts are being performed.
- Within the counterweight swing radius of cranes.

- Near steam or chemical leaks.
- Beneath ice accumulations.

Only persons who have participated in the Job Safety Briefing for the work and are directly involved with the activities/conditions associated with a red danger barricade shall cross the red danger barricade, unless permission is granted by the owner of the barricade or a crew member involved with the work.

#### **4.1.3 Caution Barricades (Yellow)**

Predominantly yellow (black striping is permissible) barricade tape printed with the word "CAUTION" shall be used to erect barricades for areas that present a possible safety hazard. Activities or conditions warranting a yellow caution barricade may include:

- A minor oil leak that creates a slippery floor.
- A tripping hazard.
- Washing down.

Workers should avoid crossing yellow caution barricades when possible. Persons not directly involved with the activities/conditions associated with the erection of a yellow caution barricade may cross a yellow caution barricade as long they understand the nature of the hazard and they can avoid the hazard.

#### **4.1.4 Radiation Barricades (Magenta/Yellow)**

Yellow barricade tape printed with the words "RADIATION HAZARD" in magenta text shall be used to erect barricades for areas impacted by radiography activities. The person responsible for the radiography activities shall ensure radiation barricades are properly positioned. Radiation barricades shall not be crossed by persons not involved with the radiography work.

#### **4.1.5 Staging Barricades (Green)**

Green barricade tape can be used to delineate staged material areas where no safety hazard exists.

All efforts should be made to keep the material and/or equipment out of walkways. Care shall also be taken not to create a hazard when staging material.

#### **4.2 Barricades – Protective (Rigid)**

Rigid barricades are required for, but not limited to, the following situations:

- Floor openings and wall openings (See SCO-SH-0910, Floor Openings, Wall Openings, and Guardrail Removal Procedure.)
- Unprotected floor edges or platforms, to include leading edge work.
- Excavations adjacent to passageways and those where a fall hazard exists.



#### **4.3 Traffic Barricades and Signs**

When barricades and associated signs are erected on or adjacent to public roadways, they shall conform to Part VI of the Manual on Uniform Traffic Control Devices

Note: Part VI of the Manual on Uniform Traffic Control Devices provides guidance on signs and warning devices required when working on or adjacent to public roads.

#### **4.4 Barricade Removal**

In the absence of the responsible person the plant/project manager or his or her designee may remove a barricade after all attempts to contact the individual who placed the barricade have been exhausted and a thorough assessment of the hazards has been conducted.

#### **4.5 T&PS Site-Specific Procedures**

A site-specific barricade procedure addressing warning and protective barricades shall be developed and implemented on T&PS projects. The site-specific procedure shall meet the requirements contained herein, at a minimum. These site-specific procedures shall be made available to appropriate plant personnel.

### **5.0 TRAINING**

Training shall be provided to ensure the purpose and function of the Southern Company Operations Barricade procedure are understood and the knowledge and skills required for its safe application and usage have been acquired.

Employees whose work involves activities at generating facilities and/or project sites outside of office settings shall train to this procedure. Training is available through SHIPS code 022874, Barricade and Open Hole Training.

All affected employees shall be retrained every 3 years or if the following conditions occur:

Retraining shall be provided when there is a change in this procedure or when an employee's knowledge or use of this procedure is deficient.

### **6.0 ATTACHMENTS**

Attachment 1 – Barricade Tag, Form #S-5425

## Attachment 1 – Barricade Tag

Form 5-5425, available through the APCO print shop.

**BARRICADE TAG**

Date applied: \_\_\_\_\_ Estimated Completion Date: \_\_\_\_\_

Reason/Hazard: \_\_\_\_\_  
\_\_\_\_\_

Company/Name/Contractor: \_\_\_\_\_

Contact: \_\_\_\_\_ Contact Number: \_\_\_\_\_

Second Shift Contact: \_\_\_\_\_ Contact Number: \_\_\_\_\_

**REMOVE TAPE WHEN WORK IS COMPLETED**

Form 5-5425 Rev. 3/2017



## SOUTHERN COMPANY OPERATIONS PROCEDURE

SCO-SH-0910

### FLOOR OPENING, WALL OPENING, AND GUARDRAIL REMOVAL

<b><i>Revision</i></b>	<b><i>Approval Date</i></b>	<b><i>Approved by</i></b>	<b><i>Title</i></b>	<b><i>Effective Date</i></b>
0	07/19/2017	<i>Ted McCullough</i>	Executive Vice President and Chief Production Officer, Southern Company Generation	01/01/2018
		<i>Paula Marino</i>	Executive Vice President, Technical and Project Solutions	

## CONTENTS

1.0	PURPOSE AND SCOPE .....	2
1.1	Purpose .....	2
1.3	Scope .....	2
2.0	DEFINITIONS AND REFERENCES .....	2
2.1	Definitions .....	2
2.2	References .....	3
3.0	RESPONSIBILITY .....	3
3.1	Management .....	3
3.2	Contractors .....	3
3.3	Contractor Responsible Person .....	4
3.4	Safety and Health Compliance Personnel .....	5
4.0	PROCEDURE .....	5
4.1	Rigid Barricades .....	5
4.2	Open Hole Permit .....	5
4.3	Grating Removal .....	7
4.4	General Requirements .....	7
4.5	Barricade Removal .....	8
4.6	Site-Specific Safety Plan for Contractors .....	8
5.0	TRAINING .....	9
6.0	ATTACHMENTS .....	9
	Attachment 1, Open Hole Permit .....	10
	Attachment 2, "Hole Cover Do Not Remove" Sticker .....	11
	Attachment 3, Open Hole Permit Index .....	12
	Attachment 4, Best Practices Step-by-Step Guides .....	13
	Grating Removal .....	13
	Floor Openings .....	14
	Wall Openings .....	15
	Guardrail Removal .....	16
	Attachment 5, Fall Hazard Sign .....	17
	Attachment 6, Revision History .....	18

## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

This procedure describes the steps required to minimize the potential for an incident or injury when workers perform tasks that could create a fall hazard. Examples of such tasks include, but are not limited to, creating a floor opening, removing one or more sections of floor grating, creating a wall opening, or removing a guardrail.

### 1.2 Scope

This procedure applies to Southern Company Operations employees and contractors at generating facilities and T&PS project locations.

#### Exemption

The Southern Company Generation Emergency Response Teams will follow the requirements set forth in the Technical Rescue Training Manual, Module 9, Tripod and Winch Devices for Retrieval, when training and performing actual rescues around open holes.

**See Module 9, Tripod and Winch Devices for Retrieval Rescues/Training Operations Near Open Holes.**

## 2.0 DEFINITIONS AND REFERENCES

### 2.1 Definitions

**contractor responsible person** – The contractor employee responsible for the work; may include job titles such as foreman, general foreman, and craft supervisor.  
Note: The contractor responsible person may change over the course of a project.

**floor opening** – An opening measuring 12 in. or more in its least dimension, in any floor, platform, pavement, or yard through which persons may fall. Examples of a floor opening include a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this subpart. (From 29 CFR 1910.21, Walking-Working Surfaces.)

An opening in a roof is considered to be a floor opening when the roof is normally considered to be a walking-working surface.

**non-rigid barricade** – Barrier that serves only as a warning and is not designed to prevent workers from falling to a lower level. For the purposes of this procedure, barricade tape is used to erect non-rigid barricades.

**qualified person** – A person who, by possession of a recognized degree, certificate, or professional standing, or with extensive knowledge, training, and experience, has

demonstrated the ability to solve or resolve problems relating to the subject matter, work, or project.

**responsible person** – The Southern Company employee or designated third-party agent responsible for overseeing the work; may include job titles such as contract coordinator, T&PS coordinator, discipline lead, or team leader. The responsible person may change over the course of a project.

**rigid barricade** – Barrier typically constructed of wood, steel, scaffold components, or other structurally substantial materials capable of withstanding without failure, a force of at least 200 lb applied in a downward or outward direction within 2 in. of the top edge, at any point along the top rail. Toe boards are required on a rigid barricade where there is a risk of debris falling on workers at a lower level.

**wall opening** – An opening that measures 18 in. or more in its least dimension located in any wall or similar structure through which persons may fall and the bottom of the opening is less than 39 in. above the walking/working surface. (From 29 CFR 1910.21, Walking-Working Surfaces.)

**unsupported weld** – A weld on the walking surface that is not supported by structural steel.

## 2.2 References

- 29 CFR 1910.21, Walking-Working Surfaces, definitions
- 29 CFR 1910.23, Guarding Floor and Wall Openings and Holes
- 29 CFR 1926.502(b), Fall Protection Systems Criteria and Practices
- 29CFR 1926.501(b)(4)(ii), Duty to Have Fall Protection, Holes
- 29 CFR 1926.750, Subpart R, Steel Erection
- SCO-SH-0900, Barricades
- Southern Company Generation Technical Rescue Training Plan

## 3.0 RESPONSIBILITY

### 3.1 Management

Plant management and project management are responsible for implementing and ensuring compliance with this procedure, which includes ensuring affected employees are trained on the requirements of this procedure.

### 3.2 Contractors

Contractors working on Southern Company Operations sites are responsible for complying with the requirements established within this procedure to include communicating the requirements to their employees and subcontractors.

The Southern company or designated 3<sup>rd</sup> party management contractor responsible person is responsible for the following:

- Inspect the work area for rigid barricades to ensure safety precautions have been taken as indicated on the Open Hole Permit.
- Review and sign the completed Open Hole Permit prior to the removal of floor grating, guardrails, or creation of an unprotected floor or wall opening.
- Periodically monitor the area during the course of work to ensure compliance with this procedure.
- Ensure rigid barricades and signage is maintained in good condition.
- Inspect area at completion of work to ensure working surfaces, walls, and guardrails are returned to a safe condition.
- When Southern Company employees comprise the work crew, review the job safety briefing (JSB) and participate in the JSB meeting.

#### NOTE

The responsible person may change during the course of the work or project. It is permissible for the person responsible for the work at any time during the work or project to authorize modification and removal of a rigid or nonrigid barricade after the area is deemed to be safe.

The Southern Company responsible person's inspection of a contractors work is solely to ensure the contractor is meeting the requirements of this procedure and their contractual requirements.

### 3.3 Contractor Responsible Person

The contractor responsible person is responsible for the following:

- Immediately notify their Southern Company coordinator on determination that a floor opening or wall opening must be created or that a guardrail must be removed.
- Ensure the work area is safe. Take steps to eliminate or mitigate hazards.
- Ensure the work crew understands the applicable requirements of this procedure.
- Review the job safety analysis (JSA) or JSB and participate in the JSA or JSB meeting.
- Review and sign the completed Open Hole Permit prior to the removal of floor grating, guardrails, or creation of an unprotected floor or wall opening.
- Monitor the area during the course of work to ensure compliance with this procedure.
- Ensure rigid barricades and signage is maintained in good condition.
- Inspect area at completion of work to ensure working surfaces, walls, and guardrails are returned to a safe condition.
- On completion of the work, review and sign the Open Hole Permit to indicate close out of the permit and release the area to general access.
- If the responsible person changes during the course of the work, the new responsible person shall sign and date the *transferred to* field on the Open Hole Permit.

#### NOTE

The contractor responsible person may change during the course of the work or project. It is permissible for the person responsible for the work at any time during the work or project to authorize modification and removal of a rigid or non-rigid barricade after the area is deemed to be safe.

### 3.4 Safety and Health Compliance Personnel

Facility/project Safety and Health Compliance personnel are responsible for the following:

- Facilitate employee training on this procedure and risk mitigation requirements.
- Assist with walking and working surface hazard recognition.
- Provide technical assistance for barricade selection and use.

## 4.0 PROCEDURE

### 4.1 Rigid Barricades

Rigid barricades shall be constructed in accordance with OSHA requirements (see 29 CFR 1910.23 and 1926.502(b)). Barricade examples include those built from scaffolding components, lumber and wooden post, and railing/cables.

The work area shall be fully encompassed by the rigid barricade or a combination of the rigid barricade, existing guardrails, walls, or other structural components. Access points shall be equipped with swing gates, offset guardrails, or other approved devices. If the barricade has removable handrails for access, they shall be pinned or otherwise secured to prevent unintentional removal.

The barricaded area shall be of the appropriate size to contain the hazard, but not so large as to create an unnecessary problem for normal pedestrian traffic or emergency access and egress routes.

### 4.2 Open Hole Permit

The Open Hole Permit (attachment 1) is used for all applicable floor openings, holes, wall openings, grating removal, and guardrail removal.

#### NOTE

Each employee on walking/working surfaces shall be protected from falling through or stepping into holes or openings, regardless of the fall potential, by personal fall arrest systems, covers, or guardrail systems erected around such hazards.

The responsible person or contractor responsible person shall complete the Open Hole Permit through the section authorizing the creation of the opening or removal of guardrails before such work is performed. The signature(s) of the responsible person(s) authorizes the work to begin.



NOTE

If contractors are not involved with the work, the responsible person shall write "N/A" in the permit sections provided for approval by the contractor responsible person.

After being authorized by the responsible person(s), the Open Hole Permit shall be attached to the rigid barricade at the barricade entrance.

The responsible person shall ensure rigid barricades and signage are maintained in good condition.

If the fall hazard is mitigated by installation of a proper hole cover during the course of work, fall protection is not mandatory while the hole cover is in place.

Hole covers shall be constructed of substantial materials able to support two times the intended load. The construction of hole covers with a short dimension greater than 4 ft and hole covers subject to loads beyond personnel and hand-portable equipment shall be determined by qualified personnel. Hole covers shall be secured against movement and shall be prominently labeled "HOLE COVER – DO NOT REMOVE" (attachment 2).

When constructing hole covers from wood, the following minimum requirements shall be observed:

OPENING SIZE	REQUIREMENT
Less than 18 in. in largest dimension	Single layer of ¾ in. plywood secured to the working surface
Greater than 18 in. in least dimension	Two layers of ¾ in. plywood secured to each other and the working surface
Greater than 48 in. in any dimension	Consult qualified person
Oriented strand board (OSB) is not to be used for hole cover material. Use plywood with a rating sufficient for the environment it will be used, such as exterior or interior grade.	

For hole covers constructed of materials other than wood, consult the qualified person for the requirements' minimum dimensions based on the size of the opening, proposed materials, and bracing.

If the area below the intended opening could be affected by overhead hazards, the responsible person shall erect a red danger barricade. See SCO-SH-0900, Barricades.

The responsible person shall inspect the work area at the completion of work, but prior to the rigid barricade being removed. After the work area has been restored to a safe condition, rigid barricades should be promptly removed.

When the work area has been restored to a safe condition, the responsible person(s) shall sign the Open Hole Permit to close-out and dispose of the permit.

Plants or projects may use the Open Hole Permit Index (attachment 3) to track the location and responsible person of open hole permits.

### 4.3 Grating Removal

Contractors who remove/install grating and its supporting structure comprising a walking-working surface shall be trained in steel erection (29 CFR 1926.750, Subpart R).

#### Exception

The steel erection training requirement does not apply for removal of sections of grating that are designed to be periodically removed for maintenance activities.

When grating is removed, it shall be:

- Secured to prevent an accidental drop to a lower level.
- Where appropriate, handled with grating hooks to avoid pinch-point injuries.
- Stored and secured so it does not pose additional hazards from accidental movement or trip hazards.
- Reinstalled to meet the original specifications, after completion of work.

#### NOTE

Unsupported welds are not permitted on reinstalled grating. Any repairs to grating must meet the manufactures original grating specifications for load rating.

See attachment 4, Best Practices, for additional instructions.

### 4.4 General Requirements

When the work or project requires one of the following:

- Creating a floor opening (includes removing grating).
- Creating a wall opening where the bottom of the opening is 39 in. or less from the walking/working surface.
- Removing guardrails.
- Excavations where a fall hazard of 4 ft or greater exists.

Southern Company Operating personnel and contractors shall use the following requirements:

- Complete a job safety analysis or briefing (JSA or JSB) specific to the task; communicate safe work practices and requirements to all workers involved.
  - Communicate hazards to other workers in the area that may be affected and note the hazards on their JSA or JSB.

- Annotate a task-specific fall-protection plan on the JSA or JSB and the Open Hole Permit.
- Prior to performing any task covered by this procedure, the responsible person completes the Open Hole Permit.
- Wear appropriate fall protection, in the form of an approved personal fall-arrest system, when working within the barricaded area, or be sure an approved fall-prevention system is in place to prevent worker exposure when a fall potential exists.
- To prevent unimpeded access, erect a rigid barricade with appropriate signage at all approaches to the area where the grating will be removed or where an unprotected floor or wall opening presents a fall hazard. Ensure the area is fully encompassed by the rigid barricade or a combination of the rigid barricade, existing guardrails, walls, or other structural components.
- If fall arrest or fall prevention is required inside a rigid barricade when a floor or wall opening is not properly covered, post the “DANGER – FALL HAZARD – 100% TIE-OFF REQUIRED INSIDE THIS BARRICADE” sign (see attachment 5), at a minimum, on each side of the rigid barricade. Large barricades may require additional signs. Handwritten signs are NOT permitted.
- Barricade the area below the intended opening that may be affected by overhead hazards to prevent access, and post signage to identify the hazard. See SCO-SH-0900, Barricades.
- After work has been completed and prior to the barricade being removed, check grating or floor plates to confirm all clamps and clips have been attached and secured. Install guardrails to the original specifications.
- Close out the permit only after the area has been inspected and found to be safe in accordance with the restoration requirements listed on the Open Hole Permit.

#### **4.5 Barricade Removal**

In the absence of the responsible person, the plant/project manager or his or her designee may remove a barricade after all attempts to contact the individual who placed the barricade have been exhausted and a thorough assessment of the hazards has been conducted.

#### **4.6 Site-Specific Safety Plan for Contractors**

If a contractor has additional requirements not covered by this procedure, they may use their procedure on approval by Southern Company site or project management. Contractors requesting to use their procedure shall submit, as part of their site-specific safety plan, measures to be used when creating floor openings or wall openings, removing grating, or removing guardrails. The contractor’s procedure shall meet or exceed the requirements of SCO-SH-0910 to be approved.

All open holes shall have the Southern Company Open Hole Permit completed by the contractor's responsible person and posted appropriately (see 4.2, Open Hole Permit).

## **5.0 TRAINING**

Training shall be provided to ensure the purpose and function of this procedure are understood and the knowledge required for its safe application and usage have been acquired.

Employees whose work involves activities at generating facilities and/or project sites outside of office settings shall be trained in this procedure. Instructor-lead training is available through SHIPS code 022874, Barricade and Open Hole Training. Online training is available through SHIPS code 023428, SG/Web Barricade and Open Hole training.

All affected Generation employees shall be retrained every 3 years, or if the following conditions occur:

- Change in this procedure.
- Employee knowledge or use of this procedure is deficient.

All affected T&PS employees will receive annual update training as part of the annual T&PS Procedures – Environmental Health and Safety Training or if the following conditions occur:

- Change in this procedure.
- Employee knowledge or use of this procedure is deficient.

### **NOTE**

SHIPS Code for T&PS will be assigned annually, and training will be automatically scheduled in LearningSource.

## **6.0 ATTACHMENTS**

Attachment 1, Open Hole Permit; Maximo item number 1319324

Attachment 2, Best Practice – Step-by-Step Guides

Attachment 3, Open Hole Permit Index

Attachment 4, "Hole Cover - Do Not Remove" sticker; Maximo item number 9-2534

Attachment 5, Fall Hazard Sign; Maximo item number 1319323

Attachment 6, Revision History

**Attachment 1, Open Hole Permit**

<b>OPEN HOLE PERMIT</b>			
For Floor Openings, Wall Openings, Grating Removal and Guardrail removal.			
<b>THIS PERMIT SHALL BE POSTED AT THE BARRICADE ENTRANCE</b>			
Responsible Person (print):		Contact Number:	
Company Performing Work:			
Check all that apply: <input type="checkbox"/> Floor Opening <input type="checkbox"/> Wall Opening <input type="checkbox"/> Guardrail Removal			
<input type="checkbox"/> Grating Removal			
<input type="checkbox"/> Other Floor Opening specify: _____			
Location:			
Scope of Work:			
The following items shall be completed <u>prior</u> to creating the opening/guardrail removal:			
<input type="checkbox"/> JSA/JSB completed and hazards communicated to all members of the new crew			
<input type="checkbox"/> Area inspected and any unsafe conditions corrected/mitigated			
<input type="checkbox"/> Rigid barricades erected			
<input type="checkbox"/> Hazard warning signs posted on rigid barricade			
<input type="checkbox"/> Fall arrest/restraint measure in place			
Specific fall protection plan:			
<b>Authorization for creating the opening/guardrail removal</b>			
Precautionary measures are in place and authorize the creation of a floor/wall opening and/or guardrail removal.			
	<b>NAME</b>	<b>SIGNATURE</b>	<b>DATE</b>
Approval Contractor Responsible Person:			
Contractor Responsible Person Transferred to:			
Approval Responsible Person:			
Approval Responsible Person Transferred to:			
<b>Restoration of Safe Work Area</b>			
Floor grating is in place and secured			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Floor grating does not have unsupported welds			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Hole covers, if needed, are in place, marked and secured			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Floor openings restored to safe condition			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Wall openings restored to safe condition			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Guardrails, including toeboards, are in place and secured			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
The work area was inspected and no hazards related to the work scope remain			<input type="checkbox"/> Yes
<b>Authorization for close out of permit</b>			
When the work area has been restored to a safe condition and barricades may be removed.			
	<b>NAME</b>	<b>SIGNATURE</b>	<b>DATE</b>
Approval Contractor Responsible Person:			
Approval Responsible Person:			

Form S-4725

Maximo item number 1319324

**Attachment 2, "Hole Cover Do Not Remove" Sticker**



Maximo item number 9-2534

**Attachment 3, Open Hole Permit Index**

Open Hole Permit Index										
Work or Project Requiring an Open Hole Permit										
Plant	Permit Number	Unit	Floor or Area	Time	Date	Responsible Person	Contact Number	Company/Department		

Southern Company Generation  
 SCG-SH-0910, Floor Openings

## Attachment 4, Best Practices Step-by-Step Guides

### Grating Removal

The following is a best practice, step-by-step guide for grating removal.

1. Notify the responsible person as soon as it is determined a section of grating must be removed.
2. Install protective systems (rigid barricades) at all access points and approaches to the work area. The barricade shall fully encompass the hazard and allow no unimpeded access.
3. Post signage identifying the hazard.
4. Install gates or offset openings for personnel access to the work area. Use only the approved access points to enter the work area.
5. Install barricades and signage on lower levels when work creates an overhead hazard. Notify other work crews in the area of the activities.
6. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.
7. Initiate Open Hole Permit and obtain appropriate signatures.
8. Conduct a JSA or JSB with all workers involved, identifying task steps, hazards, and safe work practices.

Ensure only individuals trained in steel erection (29CFR 1926.750 subpart R) and this procedure are allowed to remove grating. Exception: The steel-erection training requirement does not apply for removal of small sections of grating that are designed to be periodically removed for maintenance activities. Check with responsible person if questions arise.
9. When removing grating, ensure the piece is secured to prevent accidental drop to a lower level and handle it with grating hooks.
10. Ensure removed grating is stored and secured in such a manner that it does not pose additional hazards from accidental displacement or trip hazards.
11. On completion of the work, ensure the grating is reinstalled to meet the original specifications
12. The work area will be inspected by the responsible person. If found to be safe, obtain the appropriate signatures on the permit, closing it out.
13. Remove signage and barricades.
14. Return the work area to normal operations.



## Floor Openings

Floor openings are generally created by removing existing equipment (for example, removal of piping from a penetration) or created when installing or modifying equipment. The following is a best practice, step-by-step guide for floor openings.

1. Immediately notify the responsible person when it is determined that a floor opening must be created by removal of existing equipment or created to install equipment.
2. Install protective systems (that is, a rigid barricade) at all access points and approaches. The rigid barricade shall fully encompass the hazard and allow no unimpeded access.
3. Post signage identifying the hazard (see attachment 1).
4. Install gates or offset openings in barricades for personnel access to the work area. Use only the approved access points to enter the work area.
5. Install barricades and signage on lower levels when work creates an overhead hazard. Notify other work crews in the area of the activities.
6. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.

### NOTE

Each employee on walking/working surfaces shall be protected from falling through or stepping into holes or openings, regardless of the fall potential, by personal fall-arrest systems, covers, or guardrail systems erected around such hazards.

7. Initiate Open Hole Permit and obtain appropriate signatures.
8. Conduct a JSA or JSB with all workers involved, identifying task steps, hazards, and safe work practices.
9. Perform the task, taking steps to prevent falling objects as equipment is removed or holes are cut in the floor.
10. Install or reinstall the equipment to eliminate the hazard or take steps to protect the floor opening. If an opening is still present, a proper hole cover is the preferred method.
11. On completion, the responsible person inspects the work area. If found to be safe, obtain the appropriate signatures on the permit, closing it out.
12. Remove signs and barricades. Return work area to normal operations.

## Wall Openings

Wall openings are typically created during construction or maintenance activities. A wall opening is where the bottom edge is less than 39 in. from the walking and working surface (lower than a guardrail) and the potential to fall to a lower level is present. Protective measures for wall openings usually include plywood to close the opening or rigid barricades to prevent exposure to a fall. The following is a best practice, step-by-step guide for wall openings.

1. When it is determined that work must take place in an exposed wall opening where the bottom edge is less than 39 in. from the walking and working surface and a fall hazard will be present, immediately notify the responsible person.
2. Erect a rigid barricade set back from the opening with a gate or an offset opening for access.
3. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.
4. Erect warning or protective barricade as appropriate on lower levels with signage indicating the overhead work hazard.
5. Notify other work crews of the work and the hazards. The hazards shall be noted on the JSA or JSB for other crews working in the immediate area.
6. Initiate the Open Hole Permit and obtain appropriate signatures.
7. Conduct JSA or JSB, identifying task steps, hazards, and safe work practices.
8. Perform the task, taking steps to prevent objects falling to lower levels.
9. On completion of the task, eliminate the fall hazard by installing equipment, windows, wall panels, and such or by leaving the rigid barricade in place as an engineering control until such time the wall opening can be permanently closed.
10. When the fall hazard has been eliminated, ensure the work area is inspected by supervision and the T&PS coordinator. If found to be safe, obtain the appropriate signatures on the permit, closing it out.
11. Remove barricades, except any needed to eliminate the fall hazard, remove signage, and return the work area to normal operations.

## Guardrail Removal

If a guardrail must be removed to facilitate work, it often creates a fall hazard. The following is a best practice, step-by-step guide for guardrail removal.

1. When it is determined a guardrail must be removed, immediately notify the responsible person.
2. Erect a rigid barricade with proper signage, set back from the section to be removed, or establish a rigid barricade at all approach points to prevent unimpeded access to the work area.
3. Erect barricades and signage on lower levels if work presents an overhead work hazard, and post signage to identify the hazard.
4. Notify other crews in the area of the work and hazards associated. Other crews will note the hazards on their JSA or JSB.
5. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.
6. Initiate an Open Hole Permit and obtain appropriate signatures.
7. Conduct a JSA or JSB, identifying task steps, hazards, and safe work practices.
8. Perform the task.
9. On completion of the task, reinstall the guardrails to meet original specifications. If guardrail must be left out, a rigid barricade must be in place as an engineering control.
10. The responsible person will inspect the area. If found to be safe, obtain the appropriate signatures on the permit, closing it out.
11. Remove barricades, except any needed to eliminate fall hazards, remove signage, and return the work area to normal operations. NOTE – any barricade left in place must be tagged properly.

Attachment 5, Fall Hazard Sign



Maximo item number 1319323

### **Attachment 6, Revision History**

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Rev. 0  
07/19/2017

Approved by Ted McCullough and Paula Marino  
Reviewed by

Issued. Effective 01/01/2018.

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**Aerial Lifts and Bucket Trucks Daily Inspection Form**

Company: \_\_\_\_\_

Equipment identification number: \_\_\_\_\_

Items	S	U	N/A	Remarks
Brakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Controls labeled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Emergency controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fuel system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Guards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Handrails	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hydraulic system (no leaks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Load charts or labels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Muffler and exhaust	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Operating controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Outriggers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tires and wheels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Travel alarms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments and corrective actions taken on above noted deficiencies:

\_\_\_\_\_

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Inspected by (print) \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

<b>Authorization for the Use of a Suspended Personnel Hoisting Platform</b>	<b>Company:</b> _____
---	-----------------------

The managers and supervisors indicated on the attached lift plan have determined that it is necessary to use a suspended personnel hoisting platform. A prelift meeting was held on \_\_\_\_\_ (date) to discuss the safe execution of a personnel lift at \_\_\_\_\_ (location) for \_\_\_\_\_ (task requiring the lift).

This meeting was attended by the undersigned.

Site manager: \_\_\_\_\_

Rigging superintendent: \_\_\_\_\_

Operator: \_\_\_\_\_

Signal person: \_\_\_\_\_

Person(s) to be lifted: \_\_\_\_\_  
 \_\_\_\_\_

Others: \_\_\_\_\_  
 \_\_\_\_\_

**Lift Weight Summary**

Test lift weight	Actual lift weight	Crane capacity at further most point of lift
------------------	--------------------	--

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Project #: \_\_\_\_\_

Based upon the evaluation of alternate methods, \_\_\_\_\_ (company name) has determined that it is necessary to use a personnel hoisting platform for the task described above. The evaluation, a formal lift plan, and the record of a prelift meeting have been provided.

Authorization for the use of the suspended personnel hoisting platform is hereby granted provided that the site manager ensures that the lift plan and all Federal, State, local, and client requirements are met.

EH&S review: \_\_\_\_\_

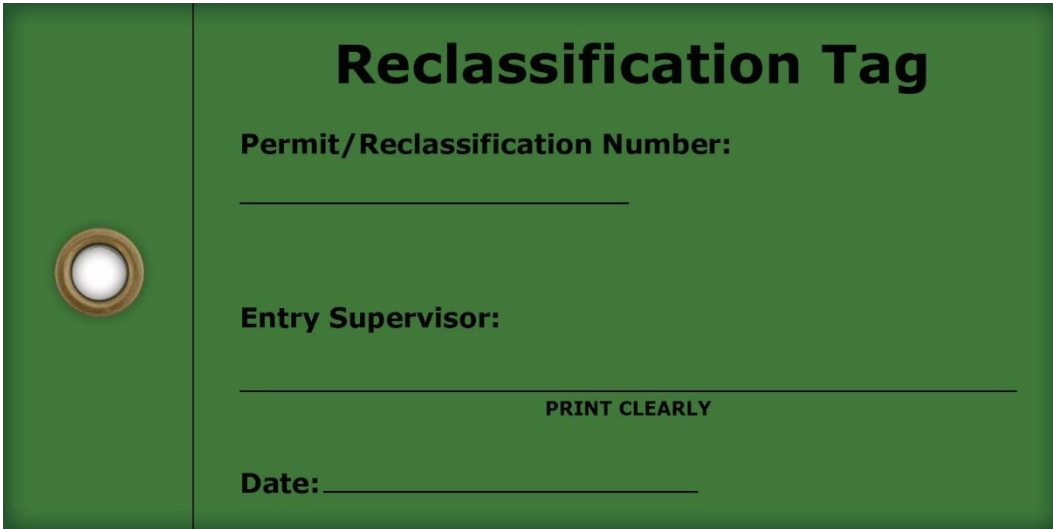
Site manager: \_\_\_\_\_

DATE: \_\_\_\_\_ Competent Person Inspection By: \_\_\_\_\_

Equipment number	Description	Forward Reverse	Safety Latches	Hooks	Front Wheel	Chain	Rated Capacity	Load Test	Condition	Remarks







**Reclassification Tag**

**Permit/Reclassification Number:**  
\_\_\_\_\_

**Entry Supervisor:**  
\_\_\_\_\_

PRINT CLEARLY

**Date:** \_\_\_\_\_

A green rectangular tag with a circular hole on the left side. The text is in white and black. The title 'Reclassification Tag' is in large bold black font. Below it are fields for 'Permit/Reclassification Number', 'Entry Supervisor', and 'Date', each with a horizontal line for input. The instruction 'PRINT CLEARLY' is centered between the supervisor and date fields.



**Reclassification Tag**  
**For Alternate Procedure**

Continuous forced ventilation and  
periodic atmospheric monitoring are required


**Permit/Reclassification Number:**  
\_\_\_\_\_

**Entry Supervisor:**  
\_\_\_\_\_

PRINT CLEARLY

**Date:** \_\_\_\_\_

A yellow rectangular tag with a circular hole on the left side. The text is in red and black. The title 'Reclassification Tag' is in large bold red font, followed by 'For Alternate Procedure' in smaller bold red font. A white-bordered box contains the text 'Continuous forced ventilation and periodic atmospheric monitoring are required' in red. Below this are fields for 'Permit/Reclassification Number', 'Entry Supervisor', and 'Date', each with a horizontal line for input. The instruction 'PRINT CLEARLY' is centered between the supervisor and date fields.

Technical Shared Services <b>Contractor EH&amp;S Specifications Deviation Request Form</b>	
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Date	Project Name	
Duration of Request		Requestor/Company
Procedure or Standard to be deviated from. For example, Contractor EH&S Specifications, section 42, Demolition.		
Reason for Request		
Justification		
Measures to be implemented to ensure safety (Attach additional pages if needed.)		

**Approvals**

Contractor-originated request

Requestor	Name (printed)	Signature
Site Manager	Name (printed)	Signature
Corporate Manager	Name (printed)	Signature

Southern Company approval

Project Manager	Name (printed)	Signature
Construction or Startup Manager	Name (printed)	Signature
Site EH&S Coordinator	Name (printed)	Signature
Regional Safety and Health Manager	Name (printed)	Signature

<b>Contractor Incident Notification and Investigation Report</b>	
--	--

Red highlighted fields require data entry. For interactive features, open this document with Adobe Acrobat Reader or Professional version.

Project					
Prime Contractor		Subcontractor			
Classify Incident		Project Type		-	
Incident Date		Time Occurred		a.m. <input type="checkbox"/>	p.m. <input type="checkbox"/>
Date Reported		Time Reported		a.m. <input type="checkbox"/>	p.m. <input type="checkbox"/>
Day of Week		Temperature		Conditions	

Employee Name - Last		First		Hardhat No.	
Gender	Age	Date of Hire	Days on Site		
Job Classification	Craft	If Other, Specify			
Years experience in skilled craft		Years experience in construction			
Home address					
Contractor foreman			General foreman		
Southern Company coordinator					

Type of Injury	Body Part(s)		Left <input type="checkbox"/>	Right <input type="checkbox"/>
Mechanism of Injury				
Treatment given (ice, heat, adhesive bandage, etc.) <small>Enter N/A if not applicable</small>				
Location/Where did the incident occur?				
Was the hazard identified prior to this incident?				
If Yes, who discovered and reported it (name and company)?				
Describe what happened				

List any equipment and/or property that was damaged, if any. <small>Enter N/A if this does not apply</small>	
Description of damage. <small>Enter N/A if this does not apply.</small>	

<b>Contractor Incident Notification and Investigation Report</b>	
--	--

Red highlighted fields require data entry.

Is the incident's primary cause due to a behavior or a condition?	
Causal factors (Choose up to four)	
Causal Factor #1 (Choose an item)	
Causal Factor #2 (Choose an item)	
Causal Factor #3 (Choose an item)	
Causal Factor #4 (Choose an item)	

Notifications made by:	
Incident investigation by	
Notified of incident	1.
Notified of incident	2.
Notified of incident	3.
Notified of incident	4.
Others, if needed	

Did the employee need additional medical attention offsite? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
If Yes, explain. <small>Attach additional pages if needed.</small>	
Immediate actions taken to prevent recurrence.	
Additional information <small>Attach additional pages if needed.</small>	

Signature required if this form is used as a final report for minor incidents (with prior TSS site management review and approval).

Contractor senior site representative	Date
---------------------------------------	------

**NOTE: This is an initial report of injury, illness, near miss or damage. Findings, root cause, and final corrective action taken are not required until the full investigation report is complete, unless this report deemed as final with consent of site management.**

1. **Initial Communication Reports are due within 24 hours of an incident. Include JSA(s) and photographs, if available.**
2. **Investigation reports, root cause, and final corrective action taken are due within 7 days of an incident.**
3. **Supporting documentation (statements, training records, certifications, and so forth) are due with the investigation report.**

List attachments	
------------------	--

Use the following naming convention for electronic versions: Contractor-notification\_MMDDYYYY\_Contractor abbreviation\_employee lastname

<b>Crane-Suspended Personnel Hoisting Platform, Evaluation of Alternate Lifting Methods</b>	<b>Company:</b> _____
---	-----------------------

Prior to using a suspended personnel hoisting platform, TSS and OSHA regulations require that all other methods be evaluated. If an alternate method is available and feasible, without regard to time and/or costs, that method shall be used. If no other method is available and feasible, a lifting plan must be developed and submitted (along with this evaluation) to the contractor's site manager and EH&S resource for authorization of the use of the suspended personnel hoisting platform.

Evaluate each of the methods listed below. If the method cannot be used, explain why:

**Ladders:**

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**Scaffolds:**

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**Boom Lift(s):**

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---

**Vertical (Scissor) Lift(s):**

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**Other (s):**

---

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# Rigging and Lifting Plan

## For Critical Lifts and Crane-Suspended Personnel Platform Lifts (Critical Lift)

Location: \_\_\_\_\_ Date of lift: \_\_\_\_\_

Load description: \_\_\_\_\_

Does this lift involve lifting personnel?  yes  no

Lift description:

**A. WEIGHT**

- 1. Weight empty (load or basket) \_\_\_\_\_ lb
  - 2. Weight of headache ball or block \_\_\_\_\_ lb
  - 3. Weight of spreader bar \_\_\_\_\_ lb
  - 4. Weight of slings & shackles \_\_\_\_\_ lb
  - 5. Weight of jib \_\_\_\_\_ lb
  - 6. Weight of headache ball on jib \_\_\_\_\_ lb
  - 7. Weight of cable (load fall) \_\_\_\_\_ lb
  - 8. Allowance for unaccounted material in equipment (10% of weight) \_\_\_\_\_ lb
  - 9. No. of people lifted x 250 (for personnel platform lift only) \_\_\_\_\_ lb
  - 10. Other \_\_\_\_\_ lb
- Total weight \_\_\_\_\_ lb

Source of load weight:

\_\_\_\_\_  
(Name Plate, Drawings, Calculated)

Weights verified By:

\_\_\_\_\_

**B. JIB**

Erected  Stored  N/A or Not installed

- 1. Is jib to be used?  Yes  No
- 2. Length of jib \_\_\_\_\_
- 3. Angle of jib \_\_\_\_\_
- 4. Rated capacity of jib (from chart)

**C. CRANE PLACEMENT**

- 1. Any deviation from smooth solid foundation in the area?  
\_\_\_\_\_
- 2. Electrical hazards in area?  
\_\_\_\_\_
- 3. Obstacles or obstructions to lift or swing?  
\_\_\_\_\_
- 4. Swing direction and degree (boom swing)?  
\_\_\_\_\_

**D. CABLE**

- 1. Number of parts of cable \_\_\_\_\_
- 2. Size of cable: \_\_\_\_\_

**DI. SIZING OF SLINGS**

- 1. Sling Selection
  - a. Type of arrangement \_\_\_\_\_
  - b. Number of slings in hook-up \_\_\_\_\_
  - c. Sling length \_\_\_\_\_
  - d. Rated capacity of sling \_\_\_\_\_
- 2. Shackle selection
  - a. Capacity (tons) \_\_\_\_\_
  - b. Shackle attached to load by: \_\_\_\_\_
  - c. Number of shackles \_\_\_\_\_

**F. CRANE**

1. Type of crane \_\_\_\_\_
2. Crane capacity \_\_\_\_\_ Tons
3. Lift arrangement
  - a. Max distance-center of load to center pin of crane \_\_\_\_\_ ft
  - b. Length of boom \_\_\_\_\_ ft
  - c. Angle of boom at pick-up \_\_\_\_\_ degrees
  - d. Angle of boom at set \_\_\_\_\_ degrees
  - e. Rated capacity of crane under most severe lifting conditions (from chart)
    1. Over rear \_\_\_\_\_ lb
    2. Over front \_\_\_\_\_ lb
    3. Over side \_\_\_\_\_ lb
4. From chart – rated capacity of the crane for the lift
5. Max. load on crane \_\_\_\_\_ lbs.
6. Lift is of crane’s rated capacity % \_\_\_\_\_

**G. PRE-LIFT CHECKLIST**

- |  | YES                      | NO                       |
|--|--------------------------|--------------------------|
| 1. Matting acceptable                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Outriggers fully extended                         | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Crane in good condition                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Swing room  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Head room checked                                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Max. counterweights used                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Tag line used                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Qualified and experienced operator                | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Qualified Signal Person (Designated)              | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Qualified and experienced rigger                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Load chart in crane                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Wind conditions within limits of PE stamped plan | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Crane visually inspected by: _____               |                          |                          |
| 14. Functional test of crane by: _____               |                          |                          |

\_\_\_\_\_  
Responsible Person (signature)

\_\_\_\_\_  
DATE

\_\_\_\_\_  
Crane Operator (Signature)

\_\_\_\_\_  
DATE

\_\_\_\_\_  
Responsible Person (Printed)

\_\_\_\_\_  
Crane Operator (Printed)

**Attach copy of P.E. Stamped Lift Plan - (not required for personnel platform lifts)**



<b>Demolition Daily Checklist</b> To be completed by the competent person for demolition	<b>Company:</b> _____
---	-----------------------

<b>Project:</b>		<b>Date:</b>	
<b>Location (be specific):</b>			
<b>Type of demolition:</b> <input type="checkbox"/> Manual <input type="checkbox"/> Mechanical <input type="checkbox"/> Controlled Detonation <input type="checkbox"/> Other: _____			
<b>Competent person:</b>			

	YES	NO	N/A	Comments
1. Engineering survey complete and on file that determines the condition of the framing, floors, walls, and possibility of unplanned collapse of any portion of the structure or adjacent structure where employees may be exposed. 29 CFR 1926.850 (b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Work plan in place that identifies sequence of job steps, assesses known hazards and control measures to address these hazards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Building or structure cleared of ACM or other hazardous materials as required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. All utilities (electrical, gas, water, etc.) identified and deenergized, relocated, or otherwise made safe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Are fire services provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Are suspended floors safe for the loads?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Are workers protected from falls by use of PFAs or engineering controls such as hole covers and rigid barricades for floor openings and wall openings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Any lifts associated with the work have been planned? Critical lifts have PE stamped drawing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Rigging equipment inspected before each use, serviceable, and proper rigging practices followed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Demolition tools and equipment being used safely?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Is continuous inspection made by a competent person as work progresses to detect hazards from weakened or deteriorated floors, wall, or loosened material?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Are planned drop areas barricaded and access controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Are emergency plans in place and workers trained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Drilling Equipment Inspection</b>	<b>Company:</b> _____
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Equipment Identification:

ITEMS	CONDITION			REMARKS or REPAIRS
	Sat	Unsat	N/A	
Access and egress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Backup alarms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clutch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Control and levers labeled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cotter pins/hardened pins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Data nameplate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Frame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fuel and gas systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Guards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Horn*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hydraulic system (no leaks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Muffler and exhaust pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Muffler guards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Outriggers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Parking brakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Platform decking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rearview mirror	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Seatbelts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Side mirrors (both)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Steering mechanism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tracks, tires, and wheels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Turn signals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Windshield wipers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments: \_\_\_\_\_

Inspected By: \_\_\_\_\_ Date: \_\_\_\_\_

Check equipment to be inspected:

- Dump truck**      **Front-end loader**      **Bulldozer**  
 **Backhoe**      **Motor grader**      **Other:** \_\_\_\_\_

Equipment Identification: \_\_\_\_\_

ITEMS	CONDITION			REMARKS
	S	U	N/A	
Access and egress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Backup alarms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Body	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clutch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Control and levers labeled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cotter pins/hardened pins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Data nameplate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Frame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fuel and gas systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Guards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Horn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hydraulic system (no leaks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Muffler and exhaust pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Muffler guards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Outriggers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Parking brakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Platform decking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rearview mirror	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Seatbelts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Side mirrors (both)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Steering mechanism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tracks, tires, and wheels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Turn signals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Windshield wipers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

\_\_\_\_\_ Inspected By \_\_\_\_\_ Date \_\_\_\_\_

Deficiencies noted above were corrected. Signed \_\_\_\_\_ Date \_\_\_\_\_

**Electrical Hazard Form for Work Performed Under a Lockout/Tagout (LOTO)**

(Supplemental to Job Safety Analysis)

Company: \_\_\_\_\_

1. Identify the equipment and frame/bus feeder ID/voltage rating/circuit ID/job location:  
\_\_\_\_\_  
\_\_\_\_\_
2. Provide a description of work to be performed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Indicate the voltage level of the equipment to be worked on (CIRCLE THE APPROPRIATE VOLTAGE LEVEL).  
120 VAC   208 VAC   480 VAC   600 VAC   2300 VAC   4160 VAC   6900 VAC   13,800 VAC   Other  
(specify) \_\_\_\_\_
4. Have proper lockout/tagout (LOTO) actions been performed so this work can proceed safely? (CIRCLE ONE)  
YES   or   NO
5. Have the work boundaries of the LOTO and possible electrical hazards such as adjacent energized cubicles, bus-work, incoming feeds, back feeds, control, and heater circuits been clearly identified and discussed? (CIRCLE ONE)  
YES   or   NO
6. What shock protection/arc flash boundaries (such as sheet metal, covers, guards, or insulating blankets) are in place to isolate these energized parts from the area the work will be performed? \_\_\_\_\_  
\_\_\_\_\_
7. Identify the appropriate personal protective equipment/tools that will be used along with their associated safety ratings (for example, handtools, gloves, voltage meters, high voltage detectors, insulating blankets, or arc flash suits).  
\_\_\_\_\_  
\_\_\_\_\_
8. Has this Electrical Hazard form been completed, signed by all employees who will perform the work, attached to the JSB, and posted at the jobsite? (CIRCLE ONE)   YES   or   NO

Sign below to indicate that you possess the adequate training and understanding to perform this work safely.  
(To be answered and signed by ALL electrically qualified persons performing the work.)

_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Contractor Electrical Supervisor (Foreman)	_____ Date	_____ Contractor Safety Representative	_____ Date

<b>Energized Electrical Work Permit</b>	<b>Company:</b> _____
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**Part 1: To be completed by the requestor**

- 1. Description of circuit/equipment/job location: \_\_\_\_\_
- 2. Description of work to be done: \_\_\_\_\_
- 3. Justification of why circuit/equipment cannot be deenergized or the work deferred until the next scheduled outage:  
\_\_\_\_\_  
\_\_\_\_\_

Requestor/Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Part 2: To be completed by the requestor**

**Check when complete**

- 1. Detailed job description procedure to be used in performing the above detailed work: \_\_\_\_\_
- 2. Description of the safe work practices to be employed: \_\_\_\_\_
- 3. Results of the shock hazard analysis: \_\_\_\_\_
- 4. Determination of shock protection boundaries: \_\_\_\_\_
- 5. Results of the flash hazard analysis: \_\_\_\_\_
- 6. Determination of the flash protection boundary: \_\_\_\_\_
- 7. Necessary personal protective equipment to safely perform the assigned task: \_\_\_\_\_
- 8. Means employed to restrict the access of unqualified persons from the work area: \_\_\_\_\_
- 9. Evidence of completion of a job planning safety analysis: \_\_\_\_\_
- 10. Do you agree the above work can be done safely? To be answered by electrically qualified persons performing work  
\_\_\_\_\_  Yes  No \_\_\_\_\_  Yes  No  
\_\_\_\_\_  Yes  No \_\_\_\_\_  Yes  No

_____ Contractor Electrical Representative	_____ Date	_____ TSS Electrical Representative	_____ Date
_____ Contractor Safety Representative	_____ Date	_____ TSS Safety Representative	_____ Date
_____ Contractor Corporate Safety	_____ Date	_____ Plant Electrical Representative	_____ Date

<b>Engineered Scaffold Inspection Form</b>	<b>Company:</b> _____
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The inspections listed below are to be performed by the P.E. of record for scaffold design or his or her designee.

Plant	Unit #	Work Order No.

Erection Phase		Inspection Requirements	Inspected By
1	Founding system (base) installed to vertical wall of boiler	To this point, the scaffolding system is installed as required by the P.E.-stamped drawing with no deficiencies and is ready to continue erection.	
2	Scaffold erected to midpoint or work platform (dance floor)	To this point, the scaffolding system is installed as required by the P.E.-stamped drawing with no deficiencies and is ready to continue erection.	
3	Scaffold complete	The scaffolding system is completely installed as required by the P.E.-stamped drawing with no deficiencies and is ready for use (Green Tag).	
4	Scaffolding system modified	P.E.-approved modifications to the scaffolding system have been completed as required by revised P.E.-stamped drawing with no deficiencies and is ready for use (Green Tag).	

Inspector's Comments	
<b>Item</b>	Note deficiencies and corrective action required (see chart below).

**Level of Urgency**

1. Red Tag Scaffold (DO NOT USE) until repairs are completed for items.
2. Yellow Tag (RESTRICTED USE) - Fall protection required.
3. Green Tag (READY FOR USE) - No deficiencies.

**Reinspect a scaffolding system after any repairs or modification.**

By signing below, contractor hereby certifies (1) inspection or reinspection of the scaffold has been performed, (2) all corrective action required to correct deficiencies in the scaffold has been taken, and (3) the scaffold meets the requirements of the engineering drawing and is ready for safe use.

\_\_\_\_\_  
Contractor representative

\_\_\_\_\_  
Date

<b>Equipment Operator Authorization</b>	<b>Company:</b> _____
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<b>EQUIPMENT OPERATOR AUTHORIZATION</b>	
Name	
Employee ID No.	Company
Project No.	Location
Issue Date	

<b>The bearer is authorized to operate the following equipment:</b>				
Manufacturer	Model	Type	Capacity	Examiner's Signature
Restrictions: Must wear corrective lenses. <input type="checkbox"/> No <input type="checkbox"/> Yes. List other restrictions below.				

## Recommended First Aid Facility Supply List

### Equipment and Instruments

1 each	Blood pressure monitor with X-large cuff
1 each	Stethoscope
1 each	Digital thermometer with extra covers
1 each	Magnifying lamp
1 each	Optivisor
1 each	Nail drill
1 each	8-in. medic scissors
1 each	Forceps tweezers
1 each	Splinter removal kit
1 each	Pen lights
1 each	Wool blanket
1 each	Ring cutter
1 each	Wash basin
1 each	Waste receptacle
1 each	Emesis basin (disposable)
1 each	Automated external defibrillator

### Consumable Supplies

1 box	Exam gloves (L/XL)
1 box	Sterile cotton tip applicators
1 box	Sterile Telfa nonstick pad bandages, 2x3 in.
1 box	Sterile Telfa nonstick pad bandages, 4x4 in.
1 box	Sterile gauze wrap, 4 in.
1 package	Sterile bulk trauma dressing
1 box each	Coban dressing, 2-, 3-, and 4-in.
3 each	Elastic bandages (Ace-type), 2- and 4-in.
1 box	Coverlet knuckle bandages
1 box	Coverlet 1-in. bandage strips
1 box	Alcohol prep pads
1 box	Cotton balls
6 each	Chemical ice packs
1 each	Adhesive tape, 1- and 3-in.
1 each	Betadine scrub solution
1 each	Hydrogen peroxide



## Recommended First Aid Facility Supply List

1 each	Antibiotic ointment
1 box	Ibuprofen tablets
1 box	Aspirin tablets
1 box	Acetaminophen tablets
1 tube	Hydrocortisone ointment
12 each	Sterile eyewash solution (4-oz squirt tip bottle)
1 each	Sterile buffered solution (16-oz bottle)
3 each	Red biohazard waste bags
3 each	CPR masks (disposable)
1 each	Bloodborne pathogen spill response kit
1 each	Analgesic muscle rub (1 tube)
1 each	Burn gel (4-oz bottle)

### Miscellaneous Items

	Spine board
	Folding cot and mattress with disposable pillow and sheets
	* Long and short spine immobilization board
	* Glucometer (blood sugar monitor)
	* Medical oxygen delivery system
	* Ambu resuscitation bag
	* Assorted sizes of cervical collars

\* Depends upon the qualifications of the onsite medical personnel with Corporate Safety review.

<b>Forklift Inspection Record</b>	<b>Company:</b> _____
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**Make:** \_\_\_\_\_ **Model:** \_\_\_\_\_

**Serial No:** \_\_\_\_\_ **Week Ending:** \_\_\_\_\_

*Check satisfactory or unsatisfactory for each item.*

	Sun.		Mon.		Tues.		Wed.		Thurs.		Fri.		Sat.	
	S	U	S	U	S	U	S	U	S	U	S	U	S	U
Forks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hoist chains and cylinder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes - drum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes - carrier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes - emergency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hydraulic system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mirrors (rearview)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exhaust system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operator's controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire extinguisher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headlights (if used inside or at night)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backup alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seat belt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other(specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Initials of Inspector</b>														

These items shall be checked prior to each shift's use. Report ALL items in need of repair to the equipment superintendent at the time of inspection. Return the completed sheet to the equipment superintendent at the end of the week.

**To be completed by the mechanic:**

Date reported	Repairs Made:	Date Repaired

Signature of the equipment superintendent: \_\_\_\_\_



DESCRIPTION OF WORK			
Plant	Work Performed By: <input type="checkbox"/> Generation Employee <input type="checkbox"/> Non-Generation Employee <input type="checkbox"/> Contractor	Date Issued	Time Issued
Type of Work <input type="checkbox"/> Welding <input type="checkbox"/> Cutting <input type="checkbox"/> Grinding <input type="checkbox"/> Electrical Tools, Lighting, and Heating <input type="checkbox"/> Other _____			
Location ID	Location Description	Specific Location	
Work Order #	Company Performing Work	Details of Work	
HOT WORK PRECAUTIONS CHECKLIST			
Yes	No*	N/A	MINIMUM REQUIREMENTS WITHIN 35 FT OF HOT WORK AREA
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hot work equipment is in good working condition and appropriate fire extinguishing equipment is available and operable.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The affected department (and unit operator, if applicable) has been notified about planned work and has given their approval.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Any potential for an explosive atmosphere in the work area has been tested and eliminated (<10% LEL).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Necessary precautions have been taken to conduct hot work in vessels, piping, etc., that are lined with rubber, plastic, or other combustibles.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Combustible or flammable hazards removed or protected with welding pads, blankets, curtains, or fire-resistant tarpaulins.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floors swept clean and trash removed. Combustible floors wet down or covered. All wall and floor openings covered.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Measures have been taken to contain falling hot slag, embers, and sparks from adjacent areas. Ducts and conveyors that might carry sparks to distant combustible materials have been covered, shut down, or protected appropriately.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Walls, ceilings, and roofs - construction is noncombustible and without combustibles coverings or insulation.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Combustible materials on the opposite side of the hot work walls, ceilings, or roof have been moved away.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Enclosed equipment has been cleaned of all combustible materials, and containers purged of flammable liquid or vapors.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure vessels, piping, and other equipment have been removed from service, isolated, and vented.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flammables/combustibles are prevented from entering the area and a fire extinguisher is easily accessible.
FIRE WATCH / FIRE MONITORING			
Yes	No	N/A	*Fire watch - If any of the above items are marked "No," a fire watch must be provided during work, plus an additional 60 minutes after completion or suspension of work, to detect and extinguish possible smoldering fires.
<input type="checkbox"/>	<input type="checkbox"/>		Is a fire watch required? (If yes, at completion of work, fire watch signs below to indicate final check has been performed.)
<input type="checkbox"/>	<input type="checkbox"/>		Is a fire watch required above or below the adjoining areas?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the designated fire watch been provided with suitable firefighting equipment and trained to sound alarm?
Does the work location meet either of the following criteria? (Fire monitor must document work on Form 2 after fire watch signs final check below).			
<input type="checkbox"/>	<input type="checkbox"/>		Constructed of combustible material, contains stored combustible material such as (paper, trash, or coal) or building construction could contain concealed spaces where a fire could smolder for longer periods of time? If yes, additional fire monitoring of 3 hr is required after fire watch duties are complete.
<input type="checkbox"/>	<input type="checkbox"/>		PRB related? If yes, additional fire monitoring of 7 hr is required after fire watch duties are complete.
AUTHORIZATIONS			
Signature below indicates agreement with the following statement:			
<b>The location where this work is to be done has been examined, the necessary fire protection precautions have been taken, and safe conditions exist.</b>			
Permit Authorizing Individual		Date	Time
Authorized Employee		Date	Time
COMPLETION OF WORK – FINAL CHECK			
Fire Watch/ PAI	Fire watch remained in the area for at least 60 minutes - <b>OR</b> - PAI made final check after the completion and/or suspension of the hot work operations to detect and extinguish possible smoldering fires.		
Signature	Date	Time	

Route completed permit to Coordinator. Coordinator shall keep for a period of 30 days.

This form is intended as a pre-lift job planning aid. This form is to be completed and present at the lift location for all intermediate lifts greater than 2000 lb.

**Section A: General Information** (Complete this section for all lifts)

Facility: \_\_\_\_\_ Date \_\_\_\_\_ Load Description \_\_\_\_\_

Location of lift: \_\_\_\_\_

Form Completed by (printed name) \_\_\_\_\_ Responsible Person (printed name) \_\_\_\_\_

Qualified Rigger (printed name) \_\_\_\_\_

- All personnel involved in rigging are qualified and trained in the use and limitations of rigging to be used?  Yes  No
- All personnel involved in lift are aware of hazards and their specific duties related to this lift?  Yes  No
- Method of load weight verification \_\_\_\_\_ Verified by (Name): \_\_\_\_\_
- Load center of gravity (COG) identified?  Yes  No
- All rigging and lifting equipment, including mounting points, have been visually inspected?  Yes  No
- Signal person meets qualification requirements?  Yes  No
- Lifting device:  Crane (mobile)  Crane (overhead)  Crane (Tower)  Crane (truck mounted)  Hoist (chain, lever, grip, drum)  
 Other (e.g. telehandler & excavators used to suspend loads with a hook attachment): \_\_\_\_\_

**B. Use This Section for Crane Lifts** (Numbered lines are used to determine percentage of crane capacity and are required. Non-numbered lines can be used to aid in determining values for the numbered lines)

1. Crane capacity: \_\_\_\_\_  
 Boom length: \_\_\_\_\_  
 Radius: \_\_\_\_\_
2. Weight of Jib ( Erected  Stored  N/A): \_\_\_\_\_
3. Weight of load to be lifted: \_\_\_\_\_
4. Weight of Lifting Equipment (may be weighed together or calculated separately) \_\_\_\_\_  
 Weight of main block: \_\_\_\_\_  
 Weight of aux block: \_\_\_\_\_  
 Weight of lifting beam / spreader bar: \_\_\_\_\_  
 Weight of slings and shackles: \_\_\_\_\_  
 Weight of hoist rope: \_\_\_\_\_  
 Misc. weights: \_\_\_\_\_
5. Total Weight (add lines 2 thru 4) \_\_\_\_\_
6. Percentage of crane capacity (divide line 5 by line 1) \_\_\_\_\_

Note – a total of 75% or greater in line 6 will constitute a critical lift.

**C. Use This Section for Base Mounted Drum Hoist, Chain Hoist, Lever Hoist, Grip Hoist**

1. Weight of all rigging on and below attachment point. \_\_\_\_\_ lb
2. Weight of load \_\_\_\_\_ lb
3. Lowest single capacity of all rigging used. (shackle, sling, swivel hoist, etc.) \_\_\_\_\_ lb (include imparted loads from angles on sheaves)
4. Drum hoist rope size. \_\_\_\_\_ Capacity for single part. \_\_\_\_\_ lb
5. Number of parts of line used on drum hoist. \_\_\_\_\_
6. Capacity with parts used. \_\_\_\_\_ lb
7. Drum hoist rope clear of all interferences?  Yes  No  N/A      Rope lubricated?  Yes  No  
 Note: Rope must not contact obstruction during use. Adjust snatch block rigging for required clearances.
8. Calculated distance from center line of drum hoist to fairlead sheave. \_\_\_\_\_ ft \_\_\_\_\_ in.  N/A

Note: Distance across drum hoist from inside of flange, to inside of flange multiplied by 19 in. will give the proper distance needed for line 8.  
 Example – (20 in. drum) 20 in. x 19 in. = 380 in. / 12 in. = 31 ft

**D. Rigging Component WLL: (List rigging appliances used for all lifts)**

1. Sling sizes / capacities: \_\_\_\_\_  
 1a. Tension in slings at applied angles: \_\_\_\_\_
2. Shackle sizes / WLL: \_\_\_\_\_
3. Spreader Bar WLL: \_\_\_\_\_
4. Miscellaneous Rigging WLL (list each): \_\_\_\_\_
5. D/d ratio for slings are acceptable  Yes  No

Softeners shall be used at all areas applicable. Tag lines are required to control and maneuver loads.

Compliance with 1926 Subpart N and Subpart CC criteria is required for all lifting and hoisting activities during construction / demolition functions.

Any person involved in the lift has the right and obligation to stop the lift at any time if an unsafe condition is present or should an unsafe condition become

# Rigger's Reference Sheet

## Journeyman Rigger's Reference Card

Sling Capacities										MECHANICAL SPLICE IN POUNDS						DESIGN FACTOR 5:1	
Size in inches	100 Vertical		.75 Choker		2 Logs or Basket 90° 2.00		60° 1.73		45° 1.41		30° 1.41		Size in mm	Design Factor			
	Vertical	Choker	2 Logs or Basket 90° 2.00	60° 1.73	45° 1.41	30° 1.41	60° 2.60										
1/4	1,300	960	2,600	2,200	1,820	1,300	3,300	6.4									
5/16	2,000	1,480	4,000	3,400	2,800	2,000	5,100	8.0									
3/8	2,800	2,200	5,600	5,000	4,000	2,800	7,400	9.6									
7/16	3,800	2,800	7,600	6,800	5,400	3,800	10,000	11.0									
1/2	5,000	3,800	10,000	8,800	7,200	5,000	13,200	13.0									
9/16	6,400	4,800	12,800	11,000	9,000	6,400	16,500	14.0									
5/8	7,800	5,800	15,600	13,600	11,000	7,800	20,000	16.0									
3/4	11,200	8,200	22,400	19,400	15,800	11,200	29,100	19.0									
7/8	15,200	11,200	30,400	26,000	22,000	15,200	39,000	22.0									
1	19,600	14,400	39,200	34,000	28,000	19,600	51,000	25.4									
1-1/8	24,000	18,000	48,000	42,000	34,000	24,000	62,000	28.5									
1-1/4	30,000	22,500	60,000	52,000	42,000	30,000	76,000	32.0									
MULTIPLIER ->			1.00	.75	.60	<- MULTIPLIER											

Formula to find sling length Total distance between pick points x Multiplier = Sling Length

## Load Weights - Calculating

Materials and Liquids - Pounds / cu. ft.				Pounds / sq. ft.		Pounds / gal.	
Aluminum	165	Iron Casting	450	Steel plate		Gas	6.0
Asbestos	153	Lead	708	· 1/8"	5	Diesel	7.0
Asphalt	81	Lumber - Fir	32	· 1/4"	10	Water	8.3
Brass	524	Lumber - Oak	62	· 1/2"	20		
Brick	120	Lumber - RR Ties	50	· 1"	40		
Bronze	534	Oil, Motor	58	Aluminum plate		· 7.5 gallons of liquid to a cubic foot	
Coal	56	Paper	58	· 1/8"	1.75	· 27 cubic feet to a cubic yard	
Concrete, Reinf.	150	Portland Cement	94	· 1/4"	3.50	· 2,000 lb = 1 U.S. ton	
Crushed Rock	95	River Sand	120	Lumber			
Diesel	52	Rubber	94	· 3/4" Fir	2		
Dry Earth, Loose	75	Steel	480	· 3/4" Oak	4		
Gasoline	45	Water	63				
Glass	162	Zinc	437				

### Formulas and Information

- H = Height · W = Width · L = Length · d = diameter · 1/2 diameter · π = 3.2 (approx)
- Area of square or rectangle = LW · Vol of cube = HWL · Area of circle = π r<sup>2</sup> · Circumference = π d
- The area of a circle is approx. 80% of its diameter squared (diameter x diameter)
- Load Weight (to estimate) Volume in cu. ft. x 500 lb x density factor .02 .05 .10 .20 .30. etc.

## Load Factors and Weight Distribution

5,000 # 5,000 #

Tension in s =  $\frac{\text{Length s}}{\text{Length h}} \times \text{share of load wt.}$   $\frac{s}{h} = \text{Load Factor}$

Tension in A =  $\frac{6}{3} \times 4,000$

Tension in A = 8,000 #

10,000 #

8,000 #

Share of Load Wt. A	Share of Load Wt. B	Legend
$R_1 + R_2 = TS$	$R_1 + R_2 = TS$	$R_1 = \text{Run, Side 1}$
$\frac{R_1}{TS} = P$	$\frac{R_2}{TS} = P$	$R_2 = \text{Run Side 2}$
$P \times W = \text{Share of Load Wt A}$	$P \times W = \text{Share of Load Wt B}$	$TS = \text{Total Span}$
		$P = \text{Percentage}$
		$W = \text{Weight of Load}$

CG in Feet From A	CG in Feet From B	Legend
$W_1 + W_2 = TS$	$W_1 + W_2 = TW$	$W_1 = \text{Weight at A}$
$\frac{W_2}{TW} = P$	$\frac{W_1}{TW} = P$	$W_2 = \text{Weight at B}$
$P \times S = \text{CG in ft. from A}$	$P \times S = \text{CG in ft. from B}$	$TW = \text{Total Weight}$
		$P = \text{Percentage}$
		$S = \text{Span}$

## Block and Fairlead Loading

Angle full included	Block Factor	Line Pull in lb	Block Load in lb
180	0.00	6,000	0
150	0.52	6,000	3,120
120	1.00	6,000	6,000
90	1.41	6,000	8,460
60	1.73	6,000	10,380
0	2.00	6,000	12,000

### Formula | Block factor x Line Pull = Block Load

Assume frictionless system:

A = 8,460 B = 12,000  
C = 6,000 D = 3,120

## D/d Ratios

30:1 = .94	8:1 = .83
20:1 = .92	5:1 = .77
15:1 = .89	2:1 = .65
10:1 = .86	1:1 = .50

## Example

BL = 0#

BL = 3,120#

BL = 6,000#

BL = 8,460#

BL = 10,380#

BL = 12,000#

## Rigger's Checklist

- Wind, temperature and visibility
- Crane and load foundations
- Load weight, height, width and length
- Load's CG, pick points above or below
- Attach. point: positive or freely rigged
- Crane capacity at maximum radius
- Head height, hoist ht., horizontal travel
- Power lines, obstructions, load flexing
- Hitch: Single vertical, choker, basket
- Bridle: 2, 3 or 4-leg, rated spreader bar
- Slings: wire rope, web, chain, mtl. mesh
- All equipment inspected, slings protected
- Tailboard meeting, communications
- Signaller, tag lines, spotters
- Sketch and outline procedure



**WARNING:** Refer to hoist and rigging equipment manufacturers' specifications for proper applications and limitations

**General Information:**

1. Circle the hazards associated with this task.

**Strains/Sprains - Pinch Points - Slips/Trips - Personnel Rescue - Drowning - Inorganic Arsenic - Liquefaction- Organic Matter - Ground Conditions - Communication - Working around Heavy Equipment - Noise- Atmosphere - Electric Shock - Rigging - Stored Energy**

List any additional Hazards \_\_\_\_\_  
 \_\_\_\_\_

2. Have all crew-members been informed of the hazards associated with today's work?  Yes  No  N/A
3. Is there proper access and egress provided to the work area?  Yes  No  N/A
4. Are the safe zones properly identified and protected from equipment?  Yes  No  N/A
5. Is everyone knowledgeable in the "Man on the Ground" process?  Yes  No  N/A

**Tools and Equipment:**

6. User inspection is required on all tools, ladders, electrical cords, rigging, scaffolds, mobile equipment and safety equipment. Have all employees been informed that this is required?  Yes  No  N/A

**Heavy Equipment:**

7. Daily Inspections performed?  Yes  No  N/A
8. Haul routes properly identified?  Yes  No  N/A
9. All Safety aids operational?  Yes  No  N/A
10. Extricating Stuck Equipment process known and in place?  Yes  No  N/A

**Ground Conditions**

11. The competent person for ground conditions is inspecting frequently?  Yes  No  N/A
12. Equipment Operators are continuously monitoring ground conditons?  Yes  No  N/A
13. Haul roads are being maintained and are safe to operate on for the day?  Yes  No  N/A
14. Crewmembers have been trained on the nature and hazards associated with ash (wet/dry) ?  Yes  No  N/A
15. Has a vane shear test been completed?  Yes  No  N/A
16. Has monitoring instrumentation status been acknowledged?  Yes  No  N/A
17. Describe the current ground conditions: \_\_\_\_\_  
 \_\_\_\_\_

**Inorganic Arsenic / Silica / Dust**

18. Are there any inorganic arsenic or silica concerns associated with today's work?  Yes  No  N/A
19. Are dust control measures in place?  Yes  No  N/A

**Fire Protection:**

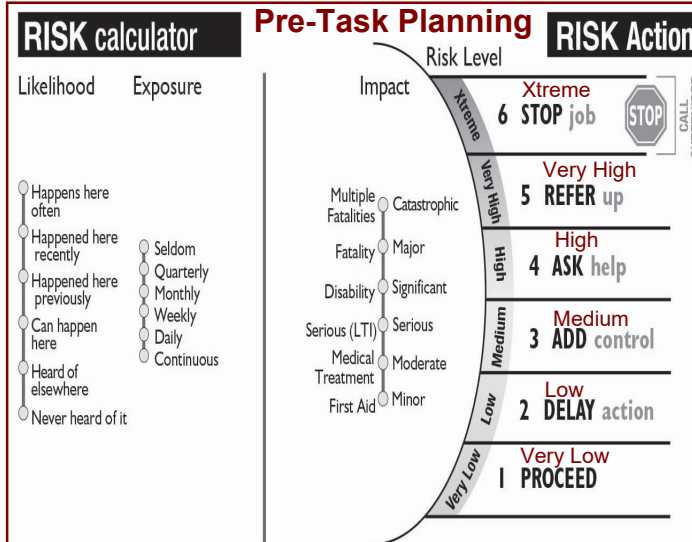
20. Are fire extinguishers present on all equipment and suitable extinguishers available at all fueling locations?  Yes  No  N/A

**Housekeeping Requirements:**

21. Is the work area clean and ready to start work?  Yes  No  N/A
22. Are material storage areas or laydown yards properly  Yes  No  N/A

**Personnel Rescue:**

23. Personnel rescue plans in place and communicated to all crew-members?  Yes  No  N/A
24. Personnel rescue equipment (life rings, throw ropes, mats, etc.) are pre-placed appropriately?  Yes  No  N/A



- Is a LOTO required for this task?  Yes  No  N/A  
 - LOTO number \_\_\_\_\_
- What is the desired slope for this work area?  
 \_\_\_\_\_
- What is the maximum cut depth for this work area?  
 \_\_\_\_\_
- What is the most recent incident / near hit here?  
 \_\_\_\_\_
- What's the most likely incident today?  
 \_\_\_\_\_
- What positive controls do we have?  
 \_\_\_\_\_
- What's the worst thing that can happen today?  
 \_\_\_\_\_
- What safety ideas do you have that will make this task safer?  
 \_\_\_\_\_



**Job Safety Analysis**  
 Pre-work & Pre-Task Planning Tool  
 For Ash Basin Work

Project Name: \_\_\_\_\_

Company / Contractor Name: \_\_\_\_\_

Client Name: **Southern Company T&PS**

Location: \_\_\_\_\_

Emergency Rescue Contact # \_\_\_\_\_

Foreman: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Task Location: \_\_\_\_\_

Task Description: \_\_\_\_\_

Specialty or High Risk work?  Yes  No

If yes, attach JSA Supplement

**Emergency evacuation area / Assembly area:**

\_\_\_\_\_  
 \_\_\_\_\_

**Return to the Safety Department upon completion of this task.**

**Management Participation**

Name: \_\_\_\_\_







### General Information:

1. Circle the hazards associated with this task.

**Strains/Sprains - Pinch Points - Slips/Trips - Fall - Burns  
Drowning - Asbestos - Lead - Organic Matter  
Impaired Vision - Communication - Sharp Edges - Noise  
Atmosphere - Electric Shock - Rigging - Stored Energy**

List any additional hazards.

\_\_\_\_\_ Has the work area been walked down and have all crewmembers been informed of the hazards

associated with the task?  Yes  No

2. Is there proper access and egress provided to the work area?  Yes  No

3. What are the body positioning and ergonomic concerns?

\_\_\_\_\_ Has it been verified that the correct equipment will be worked on?  Yes  No  N/A

### Tools and Equipment:

5. User inspection is required on all tools, ladders, electrical cords, rigging, scaffolds and safety equipment. Have all employees been informed that this is required?  Yes  No  N/A

### Crane / Hoists:

6. Is crane/hoist inspection current?  Yes  No  N/A

7. Is the area below properly barricaded?  Yes  No  N/A

### Housekeeping Requirements:

8. Has a material storage/fab area been identified?  Yes  No  N/A

9. Is the work area clean and ready to start work?  Yes  No  N/A

10. Are adequate trash receptacles available?  Yes  No  N/A

### Scaffolds/Ladders:

11. Ensure scaffolds have been inspected prior to access. Are there any concerns with the scaffold?  Yes  No  N/A

What is the proper type ladder for this task? \_\_\_\_\_

### Asbestos / Lead / Silica Concerns:

12. Are there asbestos, lead, or silica concerns associated with the task?  Yes  No  
If Yes, what are the concerns? \_\_\_\_\_

### Fall Protection:

13. Are fall protection systems needed for this task?  Yes  No  N/A

Explain (for example, static lines, barricades, hole covers, 100% tie off)

### Fire Protection:

14. Has work area been inspected for flammable or combustible hazards such as PRB Coal?  Yes  No  N/A

15. Have flammable or combustibles been removed from the hot work area and stored properly?  Yes  No  N/A

16. Has a hot work permit been issued for this task?  Yes  No  N/A

17. What are surrounding hazards/unsafe conditions?

18. Are fire extinguishers required?  Yes  No  N/A

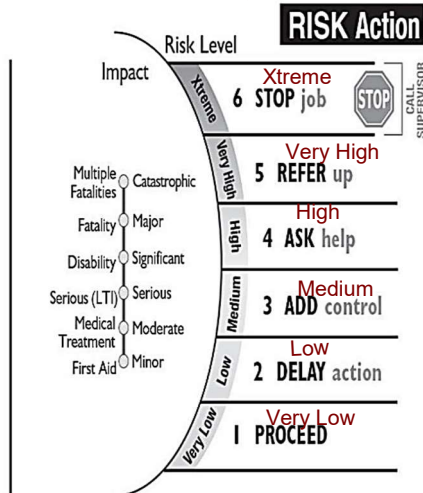
If Yes, are they properly placed?  Yes  No  N/A

### Pre-Task Planning

#### RISK calculator

Likelihood Exposure

- Happens here often
  - Happened here recently
  - Happened here previously
  - Can happen here
  - Heard of elsewhere
  - Never heard of it
- Seldom
  - Quarterly
  - Monthly
  - Weekly
  - Daily
  - Continuous



- Is a LOTO required for this task?  Yes  No  
If Yes, what is the LOTO Number: \_\_\_\_\_
- What is the most recent incident / near hit here? \_\_\_\_\_
- What's the most likely incident today? \_\_\_\_\_
- What positive controls do we have? \_\_\_\_\_
- What's the worst thing that can happen today? \_\_\_\_\_
- What safety ideas do you have that will make this task safer? \_\_\_\_\_
- Do all crewmembers understand their right and responsibilities under the SST Stop Work Authority?  Yes  No



## Job Safety Analysis

Pre-Work and Pre-Task Planning Tool

Contractor Co. Name \_\_\_\_\_

Project Name: \_\_\_\_\_

Client Name: **Southern Company  
Technical and Project Solutions**

Location: \_\_\_\_\_

Emergency Rescue Contact # \_\_\_\_\_

Foreman: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Task Location: \_\_\_\_\_

Task Description: \_\_\_\_\_

Specialty or High-Risk work?  Yes  No

If Yes, attach JSA Supplement

**Emergency evacuation area / Assembly area:**

**Return to the Safety Department upon completion of this task.**

### Management Participation

Name: \_\_\_\_\_

Participation to occur as personnel are available.



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Form 1N.1EN - Job Safety Analysis

Updated 06/30/2022



**Información General**

- Haga un círculo alrededor de la palabra que representa un riesgo relacionado con el trabajo.  
**Estiramiento muscular / Esguince - Resbalón / Tropezón Puntos de Pellizco (trauma producido por máquinas) - Quemaduras - Ahogamiento - Asbestos - Plomo - Sustancias orgánicas - Transtorno de la Visión - Comunicación - Bordes Afilados - Ruidos - Intemperie - Choque eléctrico - Utensilios y aparejos - energía peligrosa**

- Agregue otros riesgos adicionales \_\_\_\_\_
- ¿Se le ha informado a todo el personal acerca de los riesgos asociados con el trabajo?  Sí  No  N/A
- ¿Hay áreas de acceso y salida en la zona de trabajo?  Sí  No  N/A
- ¿Cuál es la atención que se le da durante horas de trabajo a la postura del cuerpo y ergonomía? \_\_\_\_\_
- ¿Se ha verificado que el trabajo es en el correcto equipo?  Sí  No  N/A

**Herramientas y Conjunto Instrumental**

- ¿Se requiere la inspección por el usuario de todas las herramientas, escaleras, extensiones eléctricas, utensilios, andamios y equipos de seguridad. Se le ha informado a todos los empleados de este requerimiento?  Sí  No  N/A

**Malacate**

- ¿Está la inspección de malacate actual?  Sí  No  N/A
- ¿Está la area baja resguardada correctamente?  Sí  No  N/A

**Requerimientos Domiciliarios**

- ¿Se han identificado espacios para almacenamiento de material y para trabajos de fabricación con metales (corte y ensamble de metales)?  Sí  No  N/A
- ¿Está el área laboral limpia y lista para el trabajo?  Sí  No  N/A
- ¿Hay canecas de basuras disponibles para su uso?  Sí  No  N/A

**Andamiajes / Escaleras**

- Asegúrese que el andamiaje se haya inspeccionado antes de su uso.  Sí  No  N/A
- ¿Hay alguna preocupación con los andamios?  Sí  No  N/A
- ¿Cuál es la escalera apropiada para la labor? \_\_\_\_\_

**Asbestos / Plomo**

- ¿Hay algún preocupación de exposición a plomo o asbestos en el trabajo?  Sí  No  N/A  
 ¿Sí en caso, cuál es la preocupación? \_\_\_\_\_

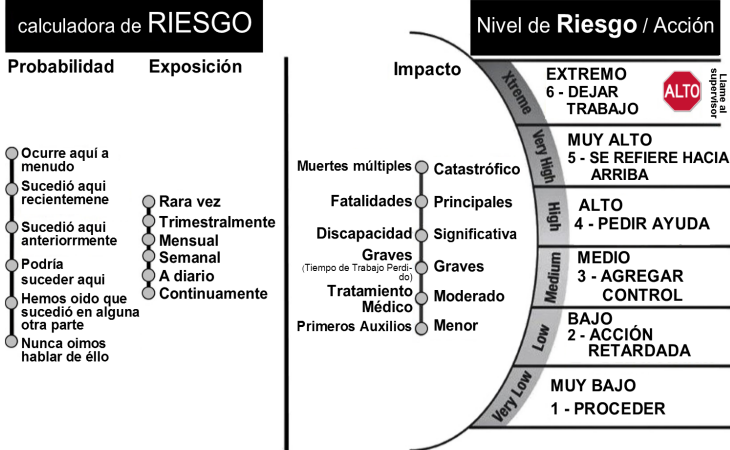
**Protección para Evitar Caidas**

- ¿Se necesitan medidas preventivas para las caidas en este trabajo?  Sí  No  N/A
- Explique (por ejemplo, líneas eléctricas, barricadas, cubrehoyos, sistemas de prevención de caidas (100% conectase) \_\_\_\_\_

**Protección contra Incendio**

- ¿Ha sido inspeccionada el área de trabajo por con sustancias inflamables (como ejemplo, el carbon PRB)?  Sí  No  N/A
- ¿Se ha conseguido un permiso para este tipo de trabajo candente?  Sí  No  N/A
- ¿Son necesarios los extinguidores de fuego?  Sí  No  N/A  
 ¿Sí en caso, estan apropiadamente localizados y accesibles?  Sí  No  N/A

**Análisis de Riesgos**



- ¿Es necesaria una autorización para llevar a cabo un Analysis de Seguridad de Trabajo?  Sí  No  N/A  
 \* ¿Cuál es el Número de la Autorización \_\_\_\_\_
- ¿Cuál ha sido el mas reciente incidente/ o estar en un tris? \_\_\_\_\_
- ¿Que incidente podria pasar hoy? \_\_\_\_\_
- ¿Que controles de deteccion de riesgos tenemos? \_\_\_\_\_
- ¿Qué es lo peor que le puede pasar hoy? \_\_\_\_\_
- ¿Que ideas de seguridad tiene usted que puedan hacer el trabajo mas seguro? \_\_\_\_\_

**JSA / AST**

**Análisis de Seguridad del Trabajo**  
 Preparaciones y planeamientos. Seleccionar el trabajo a estudiar

Nombre de empresa \_\_\_\_\_

Nombre del Proyecto \_\_\_\_\_

Nombre del Cliente Southern Company Technical and Project Solutions

Ubicación \_\_\_\_\_

Número a marcar en caso de necesidad de un rescate de emergencia: \_\_\_\_\_

Agente Delegado \_\_\_\_\_

Fecha \_\_\_\_\_ Hora \_\_\_\_\_

Lugar del Trabajo \_\_\_\_\_

Descripción del Trabajo \_\_\_\_\_

¿Riesgos que entrañan sus labores o trabajo de alto riesgo?  Sí  No  
 En caso afirmativo, adhiera un Suplemento de AST

**Zona de evacuación de Emergencia / Lugar de Reunión**  
 \_\_\_\_\_

**Después de la ejecución de este trabajo, regrese al**

**Administración Participante**

Nombre \_\_\_\_\_

Participar como personal disponible





Date	Ladder Info										Step Ladders				Extension Ladders				Inspection Results		Comments	
	Loose steps or rungs	Loose nails, bolts	Damage / worn side rails	Broken, split rungs	No slip-resistant rungs	Wobbly	Damaged braces	Nonskid feet missing	Extension hooks damaged	In good condition	Removed from service											
Please mark the check box for <b>S</b> for satisfactory or <b>U</b> for unsatisfactory	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>S</b>	<b>U</b>	<b>P</b>	<b>F</b>	<b>Note corrective actions and initial.</b>	
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**Line Breaking Permit** **Company:** \_\_\_\_\_

**LINE BREAKING PERMIT**

**EMPLOYEES INVOLVED WITH LINE BREAK**

Foreman: \_\_\_\_\_ Craft: \_\_\_\_\_

Date Required: \_\_\_\_\_ Time: \_\_\_\_\_

Location: \_\_\_\_\_

Specify Line: \_\_\_\_\_

Contents: \_\_\_\_\_

\*Chemical SDS reviewed Yes ( ) No ( )

I understand the job requirements and potential hazard of work described on this permit.

1. \_\_\_\_\_ Badge No. \_\_\_\_\_

2. \_\_\_\_\_ Badge No. \_\_\_\_\_

3. \_\_\_\_\_ Badge No. \_\_\_\_\_

**Instructions to employees:**

\_\_\_\_\_  
\_\_\_\_\_

**NOTE: ALL OPEN ENDED PIPES LEFT ON LOCATION MUST IMMEDIATELY BE BLANKED OR CAPPED.**

**Line Preparation:**

Line flushed Yes ( ) No ( )

Flushing agent: Water ( )

Air ( )

Nitrogen ( )

Other (Specify) \_\_\_\_\_ ( )

**Special Protective Equipment Required**

SCBA ( ) Valves locked out ( )

Respirator ( ) Pneumatics locked out ( )

Rubber boots ( ) Electrical locked out ( )

Faceshield ( ) Materials decontamination ( )

Monogoggles ( ) Special waste handling ( )

Rubber gloves ( )

Chem. suit ( ) Hot work permit ( )

Other \_\_\_\_\_ ( ) Red barricade area ( )

**ATMOSPHERIC TEST**

	Maximum Allowed	Test Results	Instrument Used	Cal. Date
1. Flammability	0%			
2. Hydrogen sulfide	10 ppm			
3. Chlorine	0.5 ppm			
4. Oxygen	<19.5% >23.0%			
5. Chlorine dioxide	0.1 ppm			
6. Sulfur dioxide	2 ppm			
7. Mercaptan	0.5 ppm			
8. Carbon monoxide	35 ppm			
9. Other				
10. Ultrasonic test results <i>Required for Hot Tap</i>				

**PERMIT TO BE POSTED AT WORK LOCATION.  
RETURN TO SAFETY OFFICE UPON COMPLETION OF JOB.**

**APPROVED BY**

\*SDS attached Yes ( ) No ( )

Contractor Foreman \_\_\_\_\_ Date \_\_\_\_\_

Contractor Safety Rep. \_\_\_\_\_ Date \_\_\_\_\_

Contractor Craft Supt. \_\_\_\_\_ Date \_\_\_\_\_

TSS Mechanical Rep. \_\_\_\_\_ Date \_\_\_\_\_

TSS Safety Rep. \_\_\_\_\_ Date \_\_\_\_\_

TSS QA/QC Rep. \_\_\_\_\_ Date \_\_\_\_\_

Contractor Site Manager \_\_\_\_\_ Date \_\_\_\_\_

**Required for Hot Tap**

**Required for Hot Tap**

**Final Approval**

**Instructions to Contractor**

- You must write a man-on-the-ground (MOG) process document that is specific to the site and conditions present. This document is provided as a sample only and can be used as guidance.
- If you chose to use this document rather than write a MOG process document from scratch:
  - Save this document to your local drive with a doc name of your choosing.
  - In the document text, substitute your company name for [contractor].
  - Add specific information about the site and conditions present.
  - SAVE the document, then delete this instructions box (With the cursor inside this box, go to Table tools > Layout > Select > Select Table, then go to Delete > Delete Table).
  - SAVE again and submit as instructed.

**Overview**

In an active earth-work construction zone, if at all possible, no one should be on the ground around moving equipment. However, sometimes it becomes necessary to have a man on the ground.

The man-on-the-ground (MOG) process is in place to help equipment operators and the workers around them identify the hazards of working on foot near heavy equipment and give them the knowledge to help avoid serious accidents.

**CAUTION**

Active earth-work construction zones are **RESTRICTED AREAS**.

Potential hazards associated with these areas include traffic and construction heavy equipment.

The MOG process is established to protect personnel from traffic and earth-moving and earth-hauling equipment.

**Definitions**

**[contractor] site management** – The site superintendent, general foreman, or safety professional.

**active earth-work construction zone** – A restricted area marked with signage where heavy equipment is actively performing earth work. These areas will be determined by [contractor] site management. See attachment A, Sample Warning Signs, for sample restricted work area signage.

**safe zone** – An area designated with signage that is inside the earth-work construction zone. Anyone can observe work while on foot inside the safe zone. Workers will be able to drive to each safe zone. See attachment A for sample safe zone signage.

## **Description of site and conditions**

[Contractor – Add a description of the specific site and conditions of the earth-work construction zone.]

## **[Contractor] EMPLOYEES**

### **Procedure for [Contractor] Personnel to Enter Active Earth-Work Construction Work Zones**

#### **[Contractor] Site Management**

- [Contractor] site management, general foreman, and safety professional have the authority to approach working equipment.
- [Contractor] site management must make visual contact with operators when leaving a vehicle on foot in work zones. The operator will acknowledge by lowering equipment attachment to the ground and ask the man on the ground of his or her intention.

#### **Surveyors/Soil Testing**

- When surveying and soil testing needs to be performed, [contractor] site management will establish the work zone. A guard vehicle (piece of equipment or truck with strobe) with a driver/operator will be assigned to guard the MOG.
- The surveying and/or soil technician will stay within 10 ft of the guard vehicle the entire time he or she is in the work zone.
- All earth-moving equipment will stay a safe, reasonable distance (50 ft when possible) from the guard vehicle protecting the surveyor and/or soil technician.

#### **Mechanic, Maintenance, or Fueling of Equipment**

- If possible, earth-moving equipment needing repair and/or maintenance will be removed from the active earth-work construction zone.
- If removing the equipment is not possible, the mechanic, maintenance, or fuel person will use a guard vehicle equipped with a strobe light. The strobe light must be activated by the mechanic, maintenance, or fuel person before exiting the vehicle.
- The mechanic, maintenance, or fuel person shall make visual contact with the operator once exiting the vehicle. The operator will acknowledge by lowering equipment attachment to the ground and ask the man on the ground of his or her intention.
- The mechanic, maintenance, or fuel person will use cones and/or signs in the earth-work construction zone to establish a work area.
- All other earth-moving equipment will stay a safe, reasonable distance (50 ft when possible) from the mechanic, maintenance, or fuel person.



### **Other [Contractor] Employees**

The following steps must be followed by all other [contractor] employees **not performing** mechanic, maintenance, fueling, surveying, or soil testing:

- All [contractor] personnel will first receive permission from site management to enter the earth-work construction zone.
- [Contractor] will use a guard vehicle equipped with a strobe light. The strobe light must be activated by personnel before exiting the guard vehicle.
- [Contractor] personnel will stay within 10 ft of the guard vehicle using discretion in terms of where they are located on the jobsite.
- [Contractor] employees must make visual contact with operators when leaving the guard vehicle on foot in work zones. The operator will acknowledge by lowering the equipment attachment to the ground and ask the man on the ground of his or her intention.
- All earth-moving equipment will stay a safe (50 ft when possible) reasonable distance away from the guard vehicle protecting the personnel.
- When the work inside the work zone is completed, [contractor] site management will inform the operators that the work is completed.

### **SAFE ZONES (All Site Personnel)**

[Contractor] site management will establish safe zones (when possible) inside of an active earth-work construction zone(s). The safe zones are the only allowable spaces inside the earth-work construction zone to safely get out of a vehicle to monitor progress of work. The safe zones will also be designated by appropriate signage; see attachment A, Sample Warning Signs, for suggested signage.

### **Non-[Contractor] Employees Performing Surveying or Soil Testing**

- [Contractor] site management, [contractor] equipment operators, and surveyors or soil testers shall perform a JSA prior to begin work.
- When surveying and soil testing needs to be performed, [contractor] site management will provide a guard vehicle (piece of equipment or truck with strobe) that will be assigned to guard the man-on-the-ground.
- The surveying or soil technician will stay within 10 ft of the guard vehicle the entire time he or she is in the work zone.
- All earth-moving equipment will stay a safe, reasonable distance (50 ft when possible) from the vehicle protecting the surveyor or soil tester.




### **Non-[Contractor] Employees**

- Visitors and/or non-[contractor] employees wishing to enter the active earth-work construction zone on foot (other than in a safe zone) must contact [Enter contact name(s) and number(s)] prior to entering.
- [Contractor] site management will escort the visitor and/or non-[contractor] employee to the area.

### **Attachments**

Attachment A, Sample Warning Signs

Attachment A, Sample Warning Signs

<p>Restricted Work Area</p>	 A rectangular sign with a red top section containing the text "RESTRICTED WORK AREA" in white. The bottom section is white with black text that reads "NO PEDESTRIAN TRAFFIC PERMITTED OUTSIDE DESIGNATED SAFE ZONE".
<p>Safe Zone</p>	 A rectangular sign with a solid green background and the words "SAFE ZONE" in large, white, bold, sans-serif capital letters.
<p>Active Truck Route</p>	 A rectangular sign with a red top section containing the text "CAUTION" in white. Below this is a black silhouette of a dump truck. The bottom section is white with black text that reads "ACTIVE TRUCK ROUTE".

# OPEN HOLE PERMIT

For Floor Openings, Wall Openings, Grating Removal and Guardrail removal.

## THIS PERMIT SHALL BE POSTED AT THE BARRICADE ENTRANCE

Responsible Person (print):

Contact Number:

Company Performing Work:

Check all that apply:  Floor Opening  Wall Opening  Guardrail Removal  
 Grating Removal  
 Other Floor Opening specify: \_\_\_\_\_

Location:

Scope of Work:

The following items shall be completed prior to creating the opening/guardrail removal:

- JSA/JSB completed and hazards communicated to all members of the new crew
- Area inspected and any unsafe conditions corrected/mitigated
- Rigid barricades erected
- Hazard warning signs posted on rigid barricade
- Fall arrest/restraint measure in place

Specific fall protection plan:

### Authorization for creating the opening/guardrail removal

Precautionary measures are in place and authorize the creation of a floor/wall opening and/or guardrail removal.

	NAME	SIGNATURE	DATE
Approval Contractor Responsible Person:			
Contractor Responsible Person Transferred to:			
Approval Responsible Person:			
Approval Responsible Person Transferred to:			

### Restoration of Safe Work Area

Floor grating is in place and secured	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Floor grating does not have unsupported welds	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Hole covers, if needed, are in place, marked and secured	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Floor openings restored to safe condition	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Wall openings restored to safe condition	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Guardrails, including toeboards, are in place and secured	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
The work area was inspected and no hazards related to the work scope remain	<input type="checkbox"/> Yes

### Authorization for close out of permit

When the work area has been restored to a safe condition and barricades may be removed.

	NAME	SIGNATURE	DATE
Approval Contractor Responsible Person:			
Approval Responsible Person:			

<b>Overhead Line Permit</b>	<b>Company:</b> _____
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**Today's Date** \_\_\_\_\_ **Job Number** \_\_\_\_\_

<b>Contractor Name</b>	_____		
<b>Job Address</b>	_____		
<b>Telephone Number</b>	_____	<b>Fax Number</b>	_____

<b>Emergency Contact Number</b>	_____
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**Survey**

Before beginning any task, you must first survey your work area to find power lines in the area of work or travel.

Number of Lines \_\_\_\_\_ Voltage \_\_\_\_\_  
 Distance (ft) from work area \_\_\_\_\_

**Identify**

After finding all of the power lines involved in the task, identify the activities you will be doing that may put you or your workers at risk. Mark one or more of the following:

- |  |  |
|--|--|
| <input type="checkbox"/> Cranes (mobile or truck-mounted)    | <input type="checkbox"/> Aerial lifts                  |
| <input type="checkbox"/> Drilling rigs                       | <input type="checkbox"/> Dump trucks                   |
| <input type="checkbox"/> Backhoes/excavators                 | <input type="checkbox"/> Ladders                       |
| <input type="checkbox"/> Long-handled tools                  | <input type="checkbox"/> Material handling and storage |
| <input type="checkbox"/> Other tools/high reaching equipment | <input type="checkbox"/> Scaffolding                   |
| <input type="checkbox"/> Concrete pumper                     | <input type="checkbox"/> Other _____                   |
| <input type="checkbox"/> Line voltage                        | <input type="checkbox"/> Other _____                   |

**Eliminate or Control**

After identifying the power lines involved and high-risk activities for the task, determine how to eliminate or control the risk of electrocution. A successful determination is often reached only after consultation with the utility. Mark one or more of the following:

- |  |   |
|--|---|
| <input type="checkbox"/> Move the activity                         | <input type="checkbox"/> Use barrier protection       |
| <input type="checkbox"/> Change the activity                       | <input type="checkbox"/> Use an observer              |
| <input type="checkbox"/> Have the utility deenergize line          | <input type="checkbox"/> Use warning lines with flags |
| <input type="checkbox"/> Have the utility move the line            | <input type="checkbox"/> Use nonconductive tools      |
| <input type="checkbox"/> Use a protective technology (list): _____ |   |

**Completed by** \_\_\_\_\_ **Date** \_\_\_\_\_

**Approved by** \_\_\_\_\_ **Date** \_\_\_\_\_

**Overhead Line Checklist**

**Location of work to be performed:** \_\_\_\_\_

**Line designation:** \_\_\_\_\_

**Voltage of line?** \_\_\_\_\_

	<b>YES</b>	<b>NO</b>
<b>Number of lines in service.</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Is line(s) deenergized?</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Is line LO/TO-T?</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Are safety grounds attached?</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Is barricade erected?</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Will there be an electrical standby?</b>	<input type="checkbox"/>	<input type="checkbox"/>

**Name of electrical standby.** \_\_\_\_\_

**PPE required:**

\_\_\_\_\_  
Authorizing engineer

\_\_\_\_\_  
Site/facility EH&S

\_\_\_\_\_  
Electrical superintendent

\_\_\_\_\_  
Site/facility manager

<b>Planning Outline for Deenergizing Electrical Equipment</b>	<b>Company:</b> _____
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Scope of work: \_\_\_\_\_

Date to be performed: \_\_\_\_\_

Duration of the work: \_\_\_\_\_

Contingency plan if the job runs past normal hours: \_\_\_\_\_

What will not be deenergized? \_\_\_\_\_

Method of isolation: \_\_\_\_\_

(List isolation points on the reverse side of this checklist.)

What lockout/tagout (LOTO) is required at the completion of the defined scope of work?  
 \_\_\_\_\_

Reverification requirements (LOTO, grounds, test for voltage): \_\_\_\_\_

Will deenergizing the equipment change the LOTO requirements for other personnel? Yes No N/A

Who will perform the following activities?

- Throwing switches: \_\_\_\_\_
- Voltage testing: \_\_\_\_\_

(List points for voltage testing on the reverse side of this checklist.)

- Installing grounds: \_\_\_\_\_

(List points for ground installation on the reverse side of this checklist.)

What personal protective equipment will be required? \_\_\_\_\_

What conditions would stop this work? \_\_\_\_\_

	Yes	No	N/A
Have the single-line drawings been reviewed, and are they accessible at the point of work?			
Has the need for standby personnel or barricading of equipment to be deenergized been discussed?			
Are there any back feeds, alternate feeds, or temporary feeds present?			

Please note any special considerations on the reverse side of this checklist.





**Planning Outline for Energized Electrical Equipment**

Company: \_\_\_\_\_

Scope of work: \_\_\_\_\_

Date to be performed: \_\_\_\_\_

Contingency plan if the job runs past normal hours: \_\_\_\_\_

Specify the equipment that is currently energized. \_\_\_\_\_

What equipment will be energized after the work takes place? \_\_\_\_\_

What lockout-tagout (LOTO) is required at the completion of the defined scope of work? \_\_\_\_\_

Will energizing the equipment change the LOTO requirements for other personnel?

YES     NO     N/A

Who will perform the following activities?

- Throwing switches: \_\_\_\_\_
- High potential/Megger<sup>®</sup> testing: \_\_\_\_\_
- Voltage testing: \_\_\_\_\_

What personal protective equipment will be required?

Shock protection: \_\_\_\_\_

Flash protection: \_\_\_\_\_

What conditions would stop this work? \_\_\_\_\_

Planning Outline for Energized Electrical Equipment

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	Yes	No	N/A
Has all testing been completed and have test sheets been reviewed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have the single-line drawings been reviewed, and are they accessible at the point of work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the need for standby personnel or barricading of equipment to be energized been discussed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the downstream LOTO been verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all personnel in the area been notified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a visual inspection been made?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the proper labeling in place?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all ground clusters been removed and accounted for?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all doors closed and properly latched?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all covers installed and all holes properly covered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the removal or isolation of temporary feeds/connections been verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SPECIAL CONSIDERATIONS

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Contractor Electrical Representative \_\_\_\_\_ Date \_\_\_\_\_

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TSS or Third-Party Electrical Representative \_\_\_\_\_ Date \_\_\_\_\_

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Plant Electrical Representative \_\_\_\_\_ Date \_\_\_\_\_

<b>PPE Assessment Form</b>	<b>Company:</b> _____
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**Instructions:** Use this form as a guide to help you identify the hazards in work areas. When you have completed the form, you are ready to select the appropriate PPE.

Area: \_\_\_\_\_ Job classification: \_\_\_\_\_  
 Assessor: \_\_\_\_\_ Date: \_\_\_\_\_

**HEAD HAZARDS:** Tasks that can create potential head hazards include working below other workers who are using tools and materials that could fall, working on energized electrical equipment, working with chemicals, and working under machinery or processes that might cause materials or objects to fall.

*Check the appropriate box for each hazard:*

	Yes	No	Description of hazards:
Burn	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical splash	<input type="checkbox"/>	<input type="checkbox"/>	_____
Electrical shock	<input type="checkbox"/>	<input type="checkbox"/>	_____
Impact	<input type="checkbox"/>	<input type="checkbox"/>	_____

**EYE HAZARDS:** Tasks that can create potential eye hazards include working with acids and chemicals, chipping, grinding, furnace operations sanding, welding, and woodworking.

*Check the appropriate box for each hazard:*

	Yes	No	Description of hazards:
Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	_____
Dust	<input type="checkbox"/>	<input type="checkbox"/>	_____
Heat	<input type="checkbox"/>	<input type="checkbox"/>	_____
Impact	<input type="checkbox"/>	<input type="checkbox"/>	_____
Light/radiation	<input type="checkbox"/>	<input type="checkbox"/>	_____

**HAND HAZARDS:** Tasks that can create potential hand hazards include cutting material, working with chemicals, working with hot objects, and manual material handling.

*Check the appropriate box for each hazard:*

	Yes	No	Description of hazards:
Burns	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chemical exposure	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cuts/abrasion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Puncture	<input type="checkbox"/>	<input type="checkbox"/>	_____

**FOOT HAZARDS:** Tasks that can create potential foot hazards include carrying or handling materials that could be dropped, performing manual material handling, and working with chemicals.

*Check the appropriate box for each hazard:*

	Yes	No	Description of hazards:
Chemical exposure	<input type="checkbox"/>	<input type="checkbox"/>	_____
Compression	<input type="checkbox"/>	<input type="checkbox"/>	_____
Impact	<input type="checkbox"/>	<input type="checkbox"/>	_____
Puncture	<input type="checkbox"/>	<input type="checkbox"/>	_____

### Guidelines for Selecting Personal Protective Equipment (PPE)

**Note:** Workers should not rely on PPE alone to provide protection against hazards; rather, they should use PPE in conjunction with guards, engineering controls, and sound manufacturing practices.

1. Familiarize yourself with the potential hazards in the area and the types of PPE that are available.
2. Consider the hazards associated with the environment (impact velocities, masses, projectable shape, radiation intensities).
3. Select PPE that ensures a greater level of protection than the minimum required to protect workers from the hazards.
4. Fit the worker with the PPE and give instructions on its use and care. It is very important that workers be made aware of all warning labels for and limitation of their PPE.

Based on the hazard assessment for \_\_\_\_\_ the following PPE is required:  
(Job Classification)

EYE HAZARD	JOB	PPE
_____	_____	_____
_____	_____	_____
_____	_____	_____

HEAD HAZARD	JOB	PPE
_____	_____	_____
_____	_____	_____
_____	_____	_____

FOOT HAZARD	JOB	PPE
_____	_____	_____
_____	_____	_____
_____	_____	_____

OTHER	JOB	PPE
_____	_____	_____
_____	_____	_____
_____	_____	_____

Approved: \_\_\_\_\_  
Site Manager

<b>Predemolition Engineering Survey</b>	<b>Company:</b> _____
---	-----------------------

<b><u>This form must be completed prior to any demolition activity.</u></b>			
Before employees start demolition operations, a competent person shall make an engineering survey of the structure to determine the condition of the framing, floors, walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The employer shall have in writing evidence that such a survey has been performed. <b>All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, air gapped, or otherwise controlled, outside the building line before demolition work is started.</b> In each case, any utility company that is involved shall be notified in advance.			
Project name:		Date:	
Competent person signature:		Location:	
Job Contact:		Tel #:	
Name of structure:			Year built:
Description of structure:			
Dimensions	Length:	Width:	Height:
Materials	Foundation:		Walls:
	Floors:		Roof:
Method of demolition:			
Equipment to be used:			
Disposal plan:			
Has the structure been damaged by fire, flood, explosion, or other causes?			YES    NO
Potential hazards (for example, collapse, structural failure, explosive material)?			
Any unique site/structural conditions?			

**HAZARDOUS ENERGY**

*All electric, gas, water, sewer, or other utility should be shut off, capped, air-gapped, or controlled at or outside of structure before demolition work is started.* If it is necessary to maintain power, water, or other utilities during demolition, such lines shall be temporarily relocated or protected. All workers shall be notified of any existing or relocated utility service.

Did the structure use any of these utilities?			If YES, what is the operational state of the utility?				
Utility	YES	NO	Active	Disconnected	Verified Y/N	If active, who will disconnect, cap, air-gap, or relocate, and when?	
Electrical power/lines?							
Natural gas lines?							
Water lines?							
Sewer lines?							
Fiber-optic cables?							
Phone lines?							
Telemetry lines?							
Oxygen lines?							
Other utility lines?							
<b>Underground Utilities</b>						<b>YES</b>	<b>NO</b>
Is there going to be any excavation work?							
Have Utility Locator Services been notified (811)?							
Are underground services marked?							

**CHEMICALS**

Determine if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

Are any of these hazards present?			If YES, what is the status the hazardous chemical/material?				
Hazard:	YES	NO	Present	Drained	Purged	Verified Y/N	If hazards are present, who will mitigate the hazards prior to demolition?
Underground storage tanks (USTs)?							
Vessels/storage tanks?							
Process piping (chemical)?							
Hydraulic piping/reservoirs?							

Are these chemical / environmental hazards present?	YES	NO	If YES, what is the plan for removal of these materials? Give details on location and description of action taken or to be taken.
Are asbestos-containing materials present?			
Any Freon or other refrigerants?			
Lead-containing materials?			
PCBs?			
Mercury devices?			
Radiation sources?			
Any additional hazardous materials?			

**PREEXISTING DAMAGE**

When employees are required to work within a structure to be demolished that has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.

Are any of these hazards present?			Location/Description
Hazard:	YES	NO	
Is there any preexisting structural damage?			
Is shoring required?			

**Are personnel exposed to the following hazards?**

Hazard/Exposures	YES	NO	Location/Description
Pit/trenches?			
Fall hazards?			
Holes?			

Safety Exposures	YES	NO	Location/Description
Fire hazards?			
Combustibles?			
Process hazards?			
Basements?			
Elevators?			
Party walls?			
Bulkheads?			
Confined spaces?			
Additional safety exposures?			

<b>During demolition operations, are safety or protective measures needed for the following?</b>			
<b>Safety/Protection Measures</b>	<b>YES</b>	<b>NO</b>	<b>Location/Description</b>
Adjacent walkways / sidewalks?			
Adjacent roadways?			
Adjacent buildings?			
Public exposure?			
Utilities?			
Manholes?			
Storm-water runoff?			
Temporary support, shoring, or bracing?			
Adjacent retaining walls or slopes?			
Additional items?			



<b>Emergency Information</b>		
<b>Service</b>	<b>Name of Location Agency</b>	<b>Phone Number</b>
EMS		
Fire		
Police		
Site superintendent		
Owner's representative		
Nearest urgent medical facility		
Address:		
Directions:		
Nearest hospital:		
Hospital address:		
Directions:		

**Acknowledgement:**

The undersigned have performed and reviewed this Predemolition Engineering Survey as outlined by OSHA 29 CFR 1926.850a.

\_\_\_\_\_  
 Contractor Representative                      Date                      Owner's Representative                      Date

**SAFETY NONCONFORMANCE REPORT (SNCR)**

PLANT	REPORTED BY	DATE	SNCR NUMBER	PRIORITY MEDIUM
CONTRACTOR		CONTRACT NUMBER	PROJECT	
Description of nonconformance (include exact location, detailed description of physical circumstances, hardhat sticker color(s) and number(s), and actions of contractor personnel, and all relevant information)				
Contractor description of corrective action taken (include changes made to physical facilities and procedures, disciplinary actions, and other relevant information)				
CONTRACTOR DESIGNEE				DATE
SOUTHERN COMPANY ACCEPTANCE BY				DATE
COMMENTS				

<b>Scaffold Integrity Checklist</b>	<b>Company:</b> _____
-------------------------------------	-----------------------

This checklist shall be completed by the responsible person to identify the scope of work inside and outside of the boiler that may impact the load-bearing capability of the scaffold support structure. This checklist shall be shared with the contractor, competent person, qualified person, and the P.E.

<b>Plant:</b>	<b>Unit:</b>	<b>POET:</b>
<b>Responsible Person (Print):</b>	<b>Responsible Person: (Sign)</b>	<b>Date:</b>

Question		Responsible Person's Initials
1. Are there any plans to stage equipment (panels, burners, etc.) on the scaffolding that will add weight to the scaffold? <i>Explanation:</i>	<input type="checkbox"/> YES <i>(provide explanation)</i>  <input type="checkbox"/> NO	
2. Are there any structural members (buckstays, trusses, tension bars, etc.) or structural tubes (rear waterwall hanger tubes) being cut or removed? <i>Explanation:</i>	<input type="checkbox"/> YES <i>(provide explanation)</i>  <input type="checkbox"/> NO	
3. Will any work be completed on the cutout slopes? Any waterwall panel replacements in this area or a large quantity of panels replaced in the vertical walls? Are any structural modifications required on the boiler proper to complete a major section (Superheat, Reheat, etc) that may add weight or affect the integrity of the boiler? Will burner corners be replaced? <i>Explanation:</i>	<input type="checkbox"/> YES <i>(provide explanation)</i>  <input type="checkbox"/> NO	
4. Will any work be in the lower dead-air space on any structural members or hangers? <i>Explanation:</i>	<input type="checkbox"/> YES <i>(provide explanation)</i>  <input type="checkbox"/> NO	
5. Will any headers be unpinned or disconnected from structural steel in the lower furnace area? <i>Explanation:</i>	<input type="checkbox"/> YES <i>(provide explanation)</i>  <input type="checkbox"/> NO	
6. Will any large water wall section be removed while the unit has installed scaffolding? <i>Explanation:</i>	<input type="checkbox"/> YES <i>(provide explanation)</i>  <input type="checkbox"/> NO	

## Scaffold Tags (Examples)

Do Not Use Scaffold Tag  
(Red)  
Item #9-2561

A red vertical rectangular tag with a white border. At the top is a black oval with the word "DANGER" in red. Below this, the text "DO NOT USE" and "KEEP OFF" is printed in large, bold, black letters. At the bottom, there is a smaller line of text: "This scaffold has been deemed unsafe or incomplete. Only a competent person may remove this tag."

Incomplete but Structurally Safe Scaffold Tag  
(Yellow)  
Item #9-2562

A yellow vertical rectangular tag with a black border. It contains the following sections:
 

- Scaffold Inspection and Identification Tag** (Title)
- CAUTION** (Warning icon)
- Form fields for: SCAFFOLD NUMBER, JOB/SITE, DATE ERECTED, ERECTED BY (SIGNATURE, PRINTED NAME), COMPANY, INSPECTED BY COMPETENT PERSON (SIGNATURE, PRINTED NAME).
- LOAD RATING** (Section header)
- Text: "USERS ARE RESPONSIBLE TO KNOW THE LOAD RATING AND NOT TO EXCEED THE INDICATED RATING"
- Load rating options: LIGHT DUTY (25 LBS SQ. FT.), MEDIUM DUTY (50 LBS SQ. FT.), HEAVY DUTY (75 PSF SQ. FT.), ENGINEERED (PSF SQ. FT.), OTHER (PSF SQ. FT.).
- INCOMPLETE ITEMS OR HAZARDS** (Section header)
- Checklist items: HANDRAILS, MID RAILS, TOE BOARDS, DECK OPENING, SLIP / TRIP, OTHER, PLATFORM, LADDER, GATES, OVERHEAD RESTRICTION, PROTRUDING OBJECT.
- FALL PROTECTION REQUIRED** (YES/NO)
- USER NOTE** (Small text at the bottom): "DAILY PRE-SHIFT INSPECTIONS ARE REQUIRED PRIOR TO ACCESSING SCAFFOLD. SEE REVERSE SIDE AND ENSURE INSPECTION HAS BEEN PERFORMED FOR DATE AND SHIFT."

A yellow vertical rectangular tag with a black border, showing the inspection record section of the previous tag. It includes the title "Scaffold Inspection and Identification Tag", the "DAILY PRE-SHIFT INSPECTIONS" warning, and an "INSPECTION RECORD" table with columns for DATE, TIME, PRINTED NAME (PRINTED LEGIBLY), and INITIALS.

Completed Scaffold Tag  
(Green)  
Item #9-2563

A green vertical rectangular tag with a white border. It contains the following sections:
 

- Scaffold Inspection and Identification Tag** (Title)
- SCAFFOLD RELEASED FOR ACCESS** (Section header)
- Form fields for: SCAFFOLD NUMBER, JOB/SITE, DATE ERECTED, ERECTED BY (SIGNATURE, PRINTED NAME), COMPANY, INSPECTED BY COMPETENT PERSON (SIGNATURE, PRINTED NAME).
- LOAD RATING** (Section header)
- Text: "USERS ARE RESPONSIBLE TO KNOW THE LOAD RATING AND NOT TO EXCEED THE INDICATED RATING"
- Load rating options: LIGHT DUTY (25 LBS SQ. FT.), MEDIUM DUTY (50 LBS SQ. FT.), HEAVY DUTY (75 PSF SQ. FT.), SEE ENGINEERING DRAWING, OTHER.
- CHECK COMPLETED ITEMS** (Section header)
- Checklist items: HANDRAILS, MID RAILS, TOE BOARDS, OTHER, PLATFORM, LADDER, GATES.
- USER NOTE** (Small text at the bottom): "DAILY PRE-SHIFT INSPECTIONS ARE REQUIRED PRIOR TO ACCESSING SCAFFOLD. SEE REVERSE SIDE AND ENSURE INSPECTION HAS BEEN PERFORMED FOR DATE AND SHIFT."

A green vertical rectangular tag with a white border, showing the inspection record section of the previous tag. It includes the title "Scaffold Inspection and Identification Tag", the "DAILY PRE-SHIFT INSPECTIONS" warning, and an "INSPECTION RECORD" table with columns for DATE, PRINTED NAME (PRINTED LEGIBLY), and INITIALS.

<b>Safety Data Sheets (SDS)/ Product Evaluation Form</b>	<b>Company:</b> _____
--	-----------------------

Project Name: \_\_\_\_\_  
Project Number: \_\_\_\_\_

Trade name for product under review: \_\_\_\_\_

Manufacturer's name, address, and phone number:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date SDS was received from the purchasing agent/contractor \_\_\_\_\_

*Check the appropriate response:*

**YES** - The information contained in the SDS for this product has been reviewed by the ES&H professional and the product has been approved for order.

**NO** - Based upon the hazard information contained in the SDS, it is not recommended that this material be used on this project if an alternative material is available.

**CONDITIONAL APPROVAL** - The SDS review of this product indicates that special precautions will be required in order to use this product on this site. The purchase and use of this material will be approved, provided arrangements are made to meet the following requirements:

Storage: \_\_\_\_\_  
\_\_\_\_\_

Ventilation: \_\_\_\_\_  
\_\_\_\_\_

Training: \_\_\_\_\_  
\_\_\_\_\_

Personal protective equipment: \_\_\_\_\_

Other: \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date Reviewed: \_\_\_\_\_

## Safety and Health Orientation Checklist

Company Representative(s) shall review with the Contractor's site management all site-specific and Contract-specific safety and health requirements that are applicable to the Contractor's scope of work as defined in the written contract. In addition, Company Representative(s) will provide the Contractor with applicable electrical system characteristics, conditions and design information outlined in section 9 below. It is the Contractor's responsibility to convey this information to all of the Contractor's employees and subcontractors.

This Checklist is a tool that can be used by responsible Company personnel to ensure that basic safety and health issues are discussed with Contractor personnel. This checklist contains many topics that may or may not be applicable to the service being provided. For the items that do not apply to the work being performed, the form can be edited to remove these items or the item can be left unchecked which will signify that the item is not applicable.

The Checklist provides signature lines to document both the Company and Contractor representative that reviewed the information. An orientation should be conducted, and signature collected, for all high and moderate risk projects. Documentation of this review will not be required for low risk projects. To determine if the work is high or moderate risk, utilize the Safety and Health Orientation Decision Tree in *Chapter IV, Section D* or contact your LSO or Safety and Health representative.

### 1. Personal Protection Equipment

- |  |   |
|--|---|
| <input type="checkbox"/> Head Protection         | <input type="checkbox"/> Traffic Vests          |
| <input type="checkbox"/> Eye and Face Protection | <input type="checkbox"/> Respiratory Protection |
| <input type="checkbox"/> Foot Protection         | <input type="checkbox"/> Basic Work Clothing    |
| <input type="checkbox"/> Hand Protection         | <input type="checkbox"/> FR Clothing            |

### 2. General Safety

- |   |  |
|---|--|
| <input type="checkbox"/> Housekeeping                   | <input type="checkbox"/> Power Tools                               |
| <input type="checkbox"/> Sanitation                     | <input type="checkbox"/> Grinders – Pedestal, Bench and Portable   |
| <input type="checkbox"/> Illumination                   | <input type="checkbox"/> Hazardous Energy Control (Lockout/Tagout) |
| <input type="checkbox"/> Materials Storage and Handling | <input type="checkbox"/> Excavation and Trenching                  |
| <input type="checkbox"/> Signs and Barricades           | <input type="checkbox"/> Blasting Operations                       |
| <input type="checkbox"/> Ladders                        | <input type="checkbox"/> Confined Space Entry                      |
| <input type="checkbox"/> Scaffolds                      | <input type="checkbox"/> Welding, Cutting, Heating                 |
| <input type="checkbox"/> Manlifts – Use and Training    | <input type="checkbox"/> Compressed Gas Cylinders                  |
| <input type="checkbox"/> Fall Protection                | <input type="checkbox"/> Transporting Personnel                    |
| <input type="checkbox"/> Steel Erection                 | <input type="checkbox"/> Working Over or Near Water                |
| <input type="checkbox"/> Rigging and Lift Plans         | <input type="checkbox"/> Demolition Operations                     |
| <input type="checkbox"/> Crane Suspended Work Platforms | <input type="checkbox"/> Atmospheric Monitoring                    |
| <input type="checkbox"/> Chain & Lever Hoists & Jacks   |  |

### 3. Major Equipment

- |   |   |
|---|---|
| <input type="checkbox"/> Mobile Cranes                  | <input type="checkbox"/> Overhead Cranes                                  |
| <input type="checkbox"/> Forklift Operations            | <input type="checkbox"/> Mobile Equipment Near Electric and Process Lines |
| <input type="checkbox"/> Earth Moving Equipment         | <input type="checkbox"/> Vehicles, Carts and Gators                       |
| <input type="checkbox"/> Aerial lifts and Bucket Trucks |   |
| <input type="checkbox"/> Elevators                      |   |

### 4. Electrical Safety

- |  |  |
|--|--|
| <input type="checkbox"/> Temporary Wiring                        | <input type="checkbox"/> Available Fault Current                       |
| <input type="checkbox"/> Ground Fault Circuit Interrupter (GFCI) | <input type="checkbox"/> Switching Procedures                          |
| <input type="checkbox"/> System Voltage                          | <input type="checkbox"/> Work On or Near Energized Electrical Circuits |
| <input type="checkbox"/> Arc Flash Incident Energy               | <input type="checkbox"/> Welding and Portable Generators               |

# Safety and Health Orientation Checklist

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## 5. Occupational Health

- |   |   |
|---|---|
| <input type="checkbox"/> Hearing Conservation         | <input type="checkbox"/> Silica                   |
| <input type="checkbox"/> Hazard Communication Program | <input type="checkbox"/> Asbestos                 |
| <input type="checkbox"/> Bloodborne Pathogens         | <input type="checkbox"/> Abrasive Blasting        |
| <input type="checkbox"/> Lead Paint Abatement         | <input type="checkbox"/> Industrial Radiography   |
| <input type="checkbox"/> Inorganic Arsenic            | <input type="checkbox"/> Safety Data Sheets (SDS) |
| <input type="checkbox"/> Hexavalent Chromium          | <input type="checkbox"/> Combustible Dust Safety  |

## 6. Fire Protection and Prevention

- |   |   |
|---|---|
| <input type="checkbox"/> General Requirements | <input type="checkbox"/> Flammable/Combustible Material Storage |
| <input type="checkbox"/> Fire Extinguishers   | <input type="checkbox"/> Hot Work Permits                       |
| <input type="checkbox"/> Fire Watch           |   |

## 7. Emergency Procedures and Alarms

- |   |   |
|---|---|
| <input type="checkbox"/> Fire             | <input type="checkbox"/> Injuries/illnesses |
| <input type="checkbox"/> Chemical Release | <input type="checkbox"/> Weather Related    |
| <input type="checkbox"/> Spill            | <input type="checkbox"/> Security           |

## 8. Miscellaneous Issues

- |   |   |
|---|---|
| <input type="checkbox"/> Eating in the Plant                                      | <input type="checkbox"/> Site Hazards                   |
| <input type="checkbox"/> First Aid/Medical Facilities                             | <input type="checkbox"/> Non-English-Speaking Employees |
| <input type="checkbox"/> Reporting Occupational Injuries, Illnesses and Incidents | <input type="checkbox"/> Safety Violations              |
| <input type="checkbox"/> Smoking  | <input type="checkbox"/> Corrective Actions             |
| <input type="checkbox"/> Job Safety Analysis                                      | <input type="checkbox"/> Regulatory Agency Visits       |
|   | <input type="checkbox"/> Use of Company Tools/Equipment |

## 9. Information Transfer – Required when contractor’s scope of work involves working on electric power generation, transmission and/or distribution installations and equipment or when constructing new electric transmission and distribution lines and equipment. Company Representatives will provide the following information relative to the safety of the work to be performed:

- |   |  |
|---|--|
| <input type="checkbox"/> Nominal voltages of lines and equipment  | <input type="checkbox"/> Condition of protective grounds and equipment grounding conductors  |
| <input type="checkbox"/> Maximum switching-transient voltages   | <input type="checkbox"/> Condition of poles  |
| <input type="checkbox"/> Presence of induced voltages   | <input type="checkbox"/> Environmental conditions relating to safety   |
| <input type="checkbox"/> Presence of protective grounds and equipment conductors  | <input type="checkbox"/> Appropriate information needed for Contractor to perform safety assessments, such as enclosed spaces, minimum approach distances, incident energy, pole and tower design strength, etc. |
| <input type="checkbox"/> Locations of circuits, equipment, electric supply lines, communication lines, and fire protective services |  |

## 10. Other Safety and Health

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

I have received a review of the Site-Specific and Contract-Specific Compliance and Safety, Health requirements checked above, and the applicable information listed in Section 9. I understand these Southern Company expectations and I will ensure these requirements are communicated prior to work activity to all of my contract workers/representatives and all of the representatives of my subcontractors.

---

Contractor Site Manager \_\_\_\_\_ Date \_\_\_\_\_

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Company Representative \_\_\_\_\_ Date \_\_\_\_\_

<b>Suspended Personnel Platform Preuse Checklist</b>	<b>Company:</b> _____
--	-----------------------

Date:	Competent Person:
-------	-------------------

Crane Make:	Model:	Serial Number:
-------------	--------	----------------

Equipment Number:	Hours:	Crane Capacity:
-------------------	--------	-----------------

Crane Type:	Hydraulic:	Conventional:
-------------	------------	---------------

**1. CRANE REQUIREMENTS**

Subcontractors and/or users must ensure all items in this checklist are satisfied, including compliance with all safety requirements prior to making a lift. All precautions and instructions on the decals attached to the crane and the platform must be strictly adhered to.

**Circle Items "Yes" to verify compliance:**

No	Yes	Use of a suspended personnel platform is the safest and most practical way to accomplish the task.
No	Yes	All crane inspections are current per ANSI B30.5 requirements.
No	Yes	All hooks have a current inspection per ANSI B30.10 and have positive locking-type hook latches.
No	Yes	The correct load chart is with the crane and the operator is thoroughly familiar with all special notes and manufacturer recommendations given on the chart.
No	Yes	All operational aids and safety devices in the crane are functioning, and the operator is fully versed in their operation.
No	Yes	The load lines have a 7:1 safety factor (10:1 when using non-spin rope). NOTE: This safety factor is achieved by a 50-percent derating of the crane load chart.
No	Yes	The crane is on firm footing and the crane outriggers are all the way out, down, and locked as applicable.
No	Yes	The crane is level within 1 percent (1 ft in 100 ft) and is on firm surface. NOTE: Stability of the footing will be verified during the full cycle of the operation test.
No	Yes	Means have been provided to enable the operator to ensure the crane is level.
No	Yes	A firm, level surface has been prepared and designated as a "runway" or path of travel for the weight and configuration of the crane begin used.
No	Yes	The crane counterweights are per manufacturer specification.
No	Yes	All load lines are properly revved and laying properly on the drums.
No	Yes	All drum hoists have full control load lowering. NOTE: Free fall is not to be used.
No	Yes	The boom is fully powered up and down, live boom is not to be used.
No	Yes	The boom angle and radius indicator works. NOTE: Measure radius with tape measure on conventional cranes.
No	Yes	The boom length indicator on telescoping booms is fully functional.
No	Yes	The positive anti-two-block device is functioning properly. NOTE: A warning system alone does not suffice.



<b>2. RIGGING REQUIREMENTS</b>		
No	Yes	Each bridle leg is connected to the master link or shackle in a way that ensures the load is evenly distributed between all the bridle legs.
No	Yes	All rigging, wire rope, shackles, rings, master links, and other rigging hardware have a minimum safety factor of 5:1. NOTE: When non-spin cable is used, a minimum safety factor of 10:1 is required.
No	Yes	All wire rope eye fittings are provided with thimbles.
No	Yes	All load hooks are closed with locking-type latches.
No	Yes	All rigging equipment for the suspended personnel platform is exclusively for that use only.
No	Yes	All rigging has been inspected for kinks or damage of any kind.
No	Yes	Shackle pins are of the nut-with-pin-retainer-type.
No	Yes	Separate wire rope sling connected to a shackle on the load line directly above the headache ball to the pad eye or shackled to hoisting platform.
<b>3. SUSPENDED PERSONNEL PLATFORM REQUIREMENTS</b>		
No	Yes	The basket has been designed with a 5:1 safety factor by a qualified engineer and welded by a qualified welder.
No	Yes	The suspension rigging system has been designed in such a way as to minimize tipping of the suspended personnel platform.
No	Yes	The maximum rated load and maximum capacity is posted on a permanently affixed plate on the suspended personnel platform.
No	Yes	The guardrail designed to enclose the platform is provided and is enclosed from the toeboard to the mid-rail.
No	Yes	Body harness anchorage is provided.
No	Yes	The access gate has been designed to open in and is positively prevented from swinging outward while the suspended personnel platform is in use.
No	Yes	The access gate must have a positive locking system to prevent accidental opening during operation.
No	Yes	The design allows enough headroom for personnel to stand upright.
No	Yes	There are no rough edges on any suspended personnel platform surface.
No	Yes	In addition to hardhats, overhead protection is provided when personnel are exposed to falling objects.
No	Yes	A trial-lift meeting has been attended by the crane or derrick operator, signal person(s) (if necessary for the lift), personnel to be lifted, and the person responsible for the task to be performed
No	Yes	Precautions have been taken to protect personnel from any special hazards in the area where the crane and suspended personnel platform will be operating; for example, power lines or areas where the suspended personnel platform will be out of the operator's view.
No	Yes	Special precautions have been taken to protect personnel from electrical hazards. When the crane with a suspended personnel platform is working near electrical lines or devices, the minimum working clearances shall be at least twice those for material handling operations.
No	Yes	A suspended personnel platform use authorization has been issued, dated, and properly signed for the task at hand.
No	Yes	The suspended personnel platform and rigging has been proof-tested to 125 percent of the platform rated capacity.

Suspended Personnel Platform Preuse Checklist

No	Yes	An unoccupied trial lift loaded to 125 percent of the platform-rated capacity has been performed and hoisted to each location where work is to be performed, or to any point where personnel are expected to enter or exit the platform. NOTE: The trial lift must be performed each time the crane is moved.
No	Yes	A post-trial-lift inspection of the crane has been carried out by a designated person.
No	Yes	The loading is less than 50 percent of the crane-rating chart for all work locations.
No	Yes	The operator has determined that all systems, controls, and safety devices are activated and functioning properly and that no interferences exist.
No	Yes	The suspended personnel platform has been hoisted a few inches and has been reinspected after the trial lift for any deficiencies.
No	Yes	Prior to hoisting personnel, the suspended personnel platform has been hoisted a few inches to verify its hang level.
No	Yes	All hoist ropes are free of kinks.
No	Yes	Multipart lines are not twisted around each other.
No	Yes	The hook is centered over the load.
No	Yes	The hoist lines are laying properly on hoist drums and in the sheaves.
No	Yes	All post-trial-lift defects have been corrected.
No	Yes	The crane-bearing surface has been rechecked and crane releveled as required.
No	Yes	The crane safety components, dogs, pawls, brakes, etc., have been reinspected after the trial lift.
No	Yes	Travel with the crane is not permitted except where all requirements are satisfied and where not to do so would endanger life.
No	Yes	The operator has been advised that the load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs must be engaged when the occupied personnel platform is in a stationary working position.
No	Yes	The operator has been advised that the platform must be hoisted in a slow, controlled, cautious manner with no sudden movement of the crane, derrick, or platform.
No	Yes	Personnel have been advised to perform tasks specified in the suspended personnel platform authorization only. NOTE: Only the number of personnel needed for the task at hand are allowed to be hoisted.
No	Yes	All personnel have been advised to keep all body parts inside the platform during raising. NOTE: This provision does not apply to an occupant of the platform performing the duties of a signal person.
No	Yes	All personnel have been advised that they are not allowed to enter or exit the platform until it is secured to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.
No	Yes	All personnel have been advised that they are not allowed to exit the platform before landing.
No	Yes	All personnel have been advised that taglines must be used unless their use would create an unsafe condition.
No	Yes	The operator has been advised to remain at the controls at all times while the crane engine is running and the platform is occupied.
No	Yes	All personnel have been advised that platform use must be promptly discontinued if there is any indication of dangerous weather conditions or other impending danger.
No	Yes	The operator is in constant contact by standard hand signals or voice communications during operation of crane and suspended personnel platform.
No	Yes	All personnel have been advised to remain in continuous sight of, or in direct communication with, the operator or signal person.

Suspended Personnel Platform Preuse Checklist

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No	Yes	All personnel have been advised that the use of a radio is permissible when direct visual contact is not possible, or where the use of a signal person could create a greater hazard.
No	Yes	All personnel occupying the platform have been advised to wear a personal fall-arrest harness system, with the lanyard appropriately attached to a structural member within the personnel platform capable of supporting the fall impact for personnel using the anchorage.
No	Yes	All personnel have been advised to wear a life vest when working over water.
No	Yes	Personnel have been advised to secure materials and tools to prevent displacement during the lift.
No	Yes	All personnel have been advised to load the suspended personnel platform evenly and to only carry tools and materials needed for the task at hand.
No	Yes	The operator and all personnel that will be using the platform have been advised that no other object may be lifted on any of the crane load lines while the platform is suspended.
No	Yes	An audible and visual device has been provided to the personnel in the platform so they can signal for assistance in the event of an emergency.
No	Yes	Personnel have been advised to stand firmly on the floor of the platform and to not sit or climb on the edge of the platform or use planks, ladders, or other devices for attaining a work position.
No	Yes	If welding is to be performed by personnel occupying the platform, the electrode must be protected from touching the metal components of the platform.
No	Yes	Any needed repairs to the crane or suspended personnel platform used only original manufacturer parts to ensure the new components are compatible with their original counterparts.
No	Yes	Care taken to prevent ropes, electrical cords, and hoses from becoming entangled in the platform when the platform is being moved.
No	Yes	Operator aids or interlocks have not been altered, modified, or disabled in any way.
No	Yes	The crane operator responsible for operating the cranes used for personnel handling is a thoroughly trained operator and has related experience operating the subject crane.
No	Yes	All manuals, operating instructions, and load charts provided have been read and understood by the operating personnel prior to starting the operation.
No	Yes	The operator has ensured the area surrounding the platform is clear of personnel and equipment before moving the platform.
No	Yes	Prior to the trial lift at each new location, a prelift meeting has been held, and is also held for any new worker assigned to the suspended personnel platform.
No	Yes	All deficiencies discovered in post-trial-lift inspection have been corrected.
No	Yes	All personnel attending the prelift meeting signed the roster for the meeting.
No	Yes	Minimum of two workers are assigned to work from the suspended personnel platform.
No	Yes	The trial-lift calculation sheet has been completed, signed, and dated.

<b>4. PERSONNEL PLATFORM WEIGHT CALCULATION SHEET</b>		
<ul style="list-style-type: none"> <li>• Platform rated capacity _____</li> <li>• 125-percent proof test _____</li> </ul>		
<i>(NOTE: Suspended load for 5 minutes)</i>		
<ul style="list-style-type: none"> <li>• Number of occupants x 250 lb each _____</li> <li>• Tools plus materials (weight) in platform _____</li> <li>• Misc. weight not otherwise listed _____</li> <li>• Tare weight of platform plus rigging _____</li> <li>• Total occupied weight of platform _____</li> <li>• Hoist line cable weight: _____</li> <li>• Headache ball weight _____</li> <li>• Load block weight _____</li> <li>• Rooster sheave weight _____</li> <li>• Effective JIB weight: _____</li> <li>• (if hoisting on main load line) _____</li> <li>• JIB weight stowed _____</li> <li>• Misc. weight not otherwise listed _____</li> <li>• Total load chart deductions _____</li> <li>• Total weight, "W" (total load chart deductions plus) _____</li> <li>• Total occupied weight of platform _____</li> <li>• Capacity of crane at minimum radius _____</li> <li>• Capacity of crane at platform work radius _____</li> <li>• 50 percent of crane capacity at minimum radius _____</li> <li>• 50 percent of crane capacity at platform working radius _____</li> <li>• Total load, "W" divided by 50 percent crane rating = percent of de-rated capacity used _____</li> </ul>		
<b>Signature:</b>	<b>Title:</b>	<b>Date:</b>

<b>Suspended Scaffold Inspection Checklist</b>	<b>Company:</b> _____
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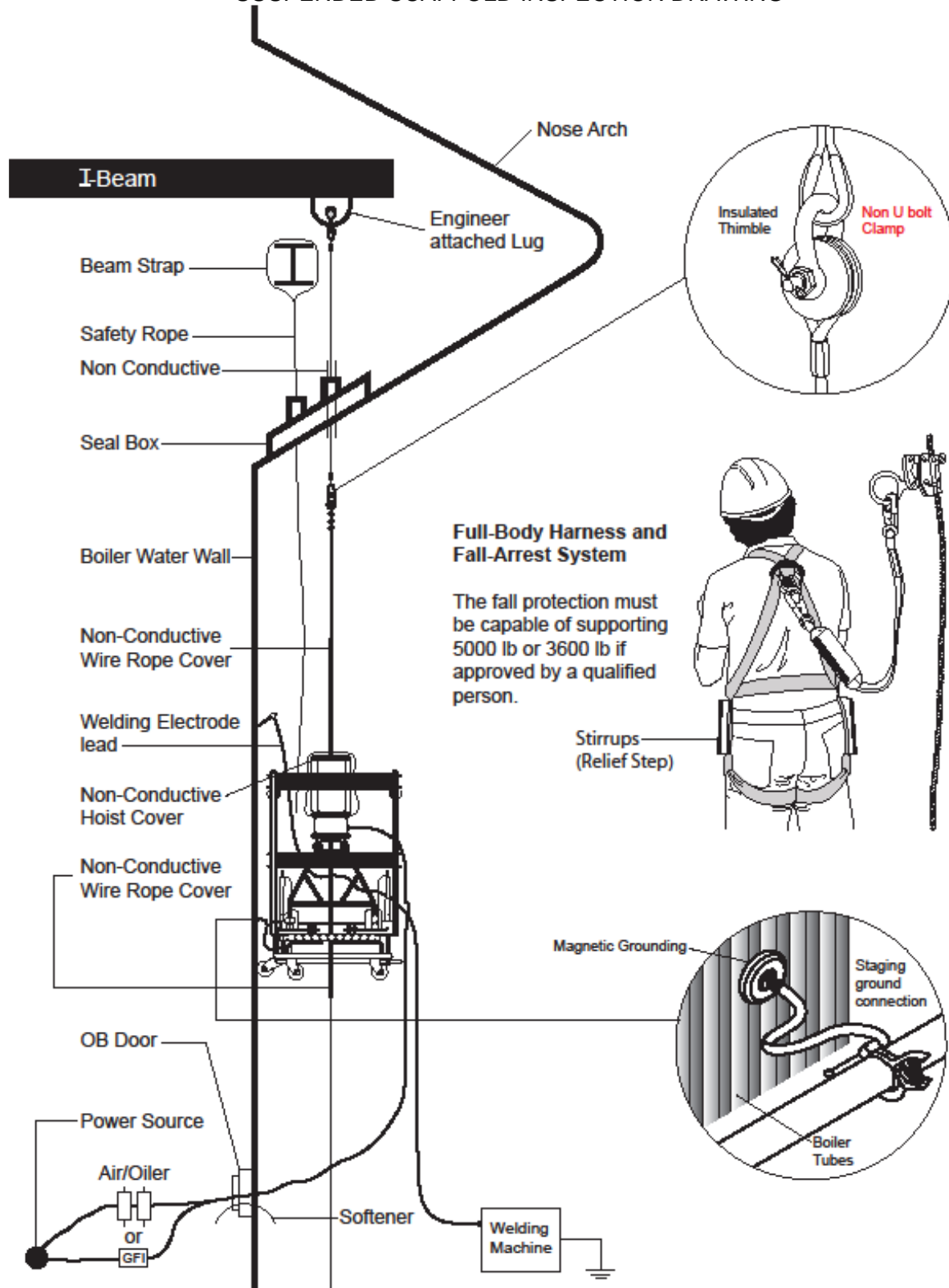
Plant \_\_\_\_\_ Unit \_\_\_\_\_

Competent Person \_\_\_\_\_ Date \_\_\_\_\_

	Yes	N/A
<b>Support system</b>		
Structure has been verified to support load with a 4-to-1 safety factor <sup>‡</sup>		
Wire rope has 3 non-U-bolt type wire rope clips torqued to the manufacturers' requirements <sup>‡</sup>		
Load has been applied to the suspended scaffold and wire rope clips have been re-torqued		
Power supply requirements checked for hoist operation (for example, voltage, air flow, and air pressure) <sup>‡</sup>		
Hoist emergency stop and over-speed brake checked for proper operating condition		
Wire rope inspected for damage; the wire rope is protected from sharp edges <sup>‡</sup>		
All loaded connection points on the suspended scaffold are secured		
GFI's are in place for electric operated hoist and auxiliary equipment		
Inline oiler and filter are in place on the air hoist <sup>‡</sup>		
Hoist was installed using SAE grade 5 or better American or Canadian fasteners		
Hoist has an operator manual attached		
Suspended scaffold inspection certification is current		
<b>Support Safety Systems</b>		
Lifelines anchorage points are properly terminated and can support a 5,000-lb load for each line <sup>‡</sup>		
Before usage, all lifelines are inspected for damage and each line is protected from sharp edges <sup>‡</sup>		
The safety line and rope grab are properly sized for the lifeline or wire rope being used		
Safety lines are installed in close proximity of the work cage or platform <sup>‡</sup>		
At least one person on the suspended scaffolding has a radio to communicate with support team		
Safety harness was inspected, and harness has suspension trauma straps (stirrups) <sup>‡</sup>		
Falling or loose objects above the platform are cleared		
Top, middle guardrails, and toe board are complete, and platform is free of debris		
<b>Suspended System</b>		
All welds and hardware checked on guardrails, toeboards, platforms, stirrups, and roller bumpers		
Chokers, chains, or clips used for anchorage have been inspected and are in good working order <sup>‡</sup>		
Electric cables and air hoses are in good working order, protected from sharp edges, and have strain reliefs installed		
All wire rope on the load-bearing side is insulated from electrical grounding <sup>‡</sup>		
All excess wire ropes on the tail line of the hoist are insulated from electrical grounding		
Wire ropes are insulated above/below hoist motors and wire rope is not in contact with the platform <sup>‡</sup>		
Hoist motors have properly insulated protective covers <sup>‡</sup>		
If welding is to be performed, platform is grounded with a grounding clamp equal in size to the welding leads <sup>‡</sup>		

<sup>‡</sup> See attached Suspended Scaffold Inspection Drawing

### SUSPENDED SCAFFOLD INSPECTION DRAWING



Switchyard Permit  
Permit Number \_\_\_\_\_

Form updated 05/17/2021



**DESCRIPTION OF WORK**

Plant:	Work Performed By:	Date Created
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Detailed Work Description:

**The following items shall be completed prior to approving the Switchyard Permit.**

- |                          |                          |  |
|--------------------------|--------------------------|--|
| <u>Yes</u>               | <u>No</u>                |  |
| <input type="checkbox"/> | <input type="checkbox"/> | Is Lockout/Tagout required?                                    |
| <input type="checkbox"/> | <input type="checkbox"/> | Have Single Lines been reviewed prior to work being performed? |
| <input type="checkbox"/> | <input type="checkbox"/> | Has a job safety briefing or equivalent been performed?        |
| <input type="checkbox"/> | <input type="checkbox"/> | Is the work preapproved for Transmission?                      |

**Approval of Switchyard Permit**

I have confirmed precautionary measures are in place and authorize the Switchyard Permit.

Southern Company Facility Representative	Signature	Approval Date	Contact#
Contractor Representative	Signature	Approval Date	Contact#
Operations Representative (If needed)	Signature	Approval Date	Contact#

**Authorization for closeout of permit**

The work area has been restored to a safe condition.

Southern Company Facility Representative	Signature	Release Date:

Ensure this permit is closed out in TKPro when complete.

# Trenching and Excavation Permit

Company: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Job description (be specific): \_\_\_\_\_

Location (be specific): \_\_\_\_\_ Permit Number: \_\_\_\_\_

- YES  NO Have the individuals assigned to this task been trained in excavation safety?
- YES  NO Have all drawings been obtained and reviewed from all applicable sources? (TSS, plant, Distribution, contractor, subcontractor, other sources)
- YES  NO Has "Call Before You Dig - 811" notification taken place per State/local requirements? If NO, explain. \_\_\_\_\_
- YES  NO Will underground nondestructive discovery be done? (Example: hydro/vacuum excavation or ground penetrating radar)  
**NOTE – Noncontact electrical testers will not detect the presence of energized electrical cables if the cables are shielded, encased in conduit, or use DC voltage. Be aware of the limitations of TIC tracing.**
- YES  NO Has a prejob meeting with all entities involved been done? (Example: Plant, Distribution, contractor, TSS)

**Before Trenching and Excavating**

- Soil Classification \_\_\_\_\_ Distance, in feet, to utilities, buildings, footings, or pilings. (A drawing or sketch must be attached to permit.)
- Type C \_\_\_\_\_ Distance, in feet, to sources of vibrations
- Type B \_\_\_\_\_ Have the owners of utilities been notified, if applicable?
- Type A \_\_\_\_\_ Has the ground been disturbed previously?
- Stable \_\_\_\_\_ List the allowable slope.

**Indicate if the items below are:**

	Necessary	Adequate	Available
Personal protective equipment (be specific)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shoring materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Signs, barricades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Machinery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- List known obstructions:**
- |  |                                    |                                      |  |                                  |
|--|------------------------------------|--------------------------------------|--|----------------------------------|
| <input type="checkbox"/> Electrical          | <input type="checkbox"/> Telephone | <input type="checkbox"/> Water       | <input type="checkbox"/> Sewer                 | <input type="checkbox"/> Steam   |
| <input type="checkbox"/> Alarm               | <input type="checkbox"/> Drain     | <input type="checkbox"/> Process     | <input type="checkbox"/> Footings              | <input type="checkbox"/> Pilings |
| <input type="checkbox"/> Concrete encasement | <input type="checkbox"/> Gas       | <input type="checkbox"/> Fiber optic | <input type="checkbox"/> Other (specify) _____ |                                  |

- Excavation method:**
- |                                     |   |  |
|-------------------------------------|---|--|
| <input type="checkbox"/> Backhoe    | <input type="checkbox"/> Hand dig         | <input type="checkbox"/> Track hoe             |
| <input type="checkbox"/> Ditchwitch | <input type="checkbox"/> Hydro-Excavation | <input type="checkbox"/> Other (specify) _____ |

- Precautions to be taken**
- |  |  |  |
|--|--|--|
| <input type="checkbox"/> De-energize lines | <input type="checkbox"/> Ground tools          | <input type="checkbox"/> Insulate equipment operator |
| <b>Method of Hazardous Energy Control</b>  | <input type="checkbox"/> Lockout/Tagout (LOTO) | <input type="checkbox"/> Other (specify) _____       |

Size of the excavation: Depth \_\_\_\_\_ Width \_\_\_\_\_ Length \_\_\_\_\_  
 YES  NO Are ground conditions changing, particularly after rainfall?

**Ensure the shoring and/or sloping remains adequate as excavation progresses.**

- Method for entry and exit:  Stairway  Ladder  Ramp
- YES  NO Has there been a change in vehicular and machinery operation patterns?
  - YES  NO Is water removal equipment needed?
  - YES  NO Available?  YES  NO Operable?  YES  NO
  - YES  NO Are portable trench boxes or trench shields adequate?
  - YES  NO Is there a hazardous atmosphere potential? If YES, list hazard(s), control measures, and rescue provisions. \_\_\_\_\_

**Protective system used for excavation:**

- Sloping
- Shoring
- Indicate the shoring method used and applicable appendix:**
- App. C, Timber Shoring
- App. E, Alternatives to Timber Shoring
- App. F, Selection of Protective Systems
- Predesigned shoring

\_\_\_\_\_ List atmospheric readings on the Excavation/Trenching Daily Inspection Form.

**NOTE: Protection for excavations greater than 20-ft deep (shoring, benching, sloping designs) shall be developed by a registered professional engineer.**

**Signatures and Dates**

	Excavation Competent Person	Client Representative (if applicable)	Job Supervisor	EH&S Professional	Registered Professional Engineer (if applicable)
Signature					
Date					
	Electrical Representative	Mechanical Representative	Equipment / Operator Representative	Field Engineer	Other (specify) _____
Signature					
Date					

**FOR ALL EXCAVATION OPERATIONS EXCEPT HYDRO-EXCAVATION, PERMIT IS VOIDED AND WORK IS TO STOP IF AN UNKNOWN OR ABANDONED UTILITY IS ENCOUNTERED. WORK MAY CONTINUE WITH NEW PERMIT AFTER UNKNOWN ENCUMBRANCE IS IDENTIFIED AND A SAFE WORK PLAN IS IN PLACE.**  
 Note: Each individual signing above is entitled to a copy of this permit, if desired.



<b>Trenching/Excavation Daily Inspection Form</b>	<b>Company:</b> _____
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<b>PROJECT NAME / LOCATION:</b>				<b>DATE:</b>	
<b>EXCAVATION LOCATION OR NUMBER:</b>					
<b>EXCAVATION PURPOSE:</b>					
<b>DIMENSIONS:</b>	<b>DEPTH =</b>		<b>Yes No</b>		<b>HAZARDOUS CONDITIONS</b>
	<b>TOP =</b>	W	L	<input type="checkbox"/> <input type="checkbox"/>	..... Saturated soil / standing or seeping water
	<b>BOTTOM =</b>	W	L	<input type="checkbox"/> <input type="checkbox"/>	..... Cracked or fissured wall(s)
<b>SOIL CLASSIFICATION</b>			<input type="checkbox"/> <input type="checkbox"/> ..... Bulging wall(s)		
<input type="checkbox"/> A			<input type="checkbox"/> <input type="checkbox"/>		..... Floor heaving
<input type="checkbox"/> B			<input type="checkbox"/> <input type="checkbox"/>		..... Frozen soil
<input type="checkbox"/> C			<input type="checkbox"/> <input type="checkbox"/>		..... Any soil sloughed off or caved in
			<input type="checkbox"/> <input type="checkbox"/>		..... Vibration
			<input type="checkbox"/> <input type="checkbox"/>		..... Depth greater than 5 ft
<b>PROTECTION METHODS:</b>			<b>PLACEMENT OF SPOILS AND EQUIPMENT</b>		
<i>(Walls MUST be vertical—NO voids)</i>			<input type="checkbox"/> <input type="checkbox"/> ..... Spoils at least 2 ft from edge of trench		
<b>SHORING</b>			<input type="checkbox"/> <input type="checkbox"/> ..... Equipment at least 2 ft from edge		
<input type="checkbox"/> Timber			<input type="checkbox"/> <input type="checkbox"/> ..... Backhoe at end of trench		
<input type="checkbox"/> Pneumatic			<input type="checkbox"/> <input type="checkbox"/> ..... Compressor, etc. at remote location		
<input type="checkbox"/> Hydraulic			<b>ACCESS / EGRESS</b>		
<input type="checkbox"/> Screw jacks			<input type="checkbox"/> <input type="checkbox"/> ..... Within 25 ft		
<input type="checkbox"/> Trench shield			<input type="checkbox"/> <input type="checkbox"/> ..... Ladder secured?		
<input type="checkbox"/> Other (specify) _____			<input type="checkbox"/> <input type="checkbox"/> ..... Ladder extends 36 in. above the landing		
<input type="checkbox"/> N/A			<input type="checkbox"/> <input type="checkbox"/> ..... Access and egress adequate?		
<b>UNEVEN, IRREGULAR WALLS</b>			<b>INSPECTIONS / TRAINING / RESCUE</b>		
<input type="checkbox"/> Trench box			<input type="checkbox"/> <input type="checkbox"/> Shoring equipment and materials inspected prior to use?		
<b>Sloping:</b> <input type="checkbox"/> 1:1 (45°) <input type="checkbox"/> 1½:1 (34°)			<input type="checkbox"/> <input type="checkbox"/> Entrants trained.		
			<input type="checkbox"/> <input type="checkbox"/> Rescue provisions verified.		
<b>Yes No</b>			<b>ENVIRONMENTAL CONDITIONS / ATMOSPHERIC READINGS</b>		
<input type="checkbox"/> <input type="checkbox"/> Any potential sources of air contaminants?			<input type="checkbox"/> <input type="checkbox"/> Will periodic atmospheric checks be required?		
<input type="checkbox"/> <input type="checkbox"/> Air meter calibration current?					
<b>DOCUMENT ATMOSPHERIC READINGS BELOW. USE ADDITIONAL SHEET IF NECESSARY</b>					
Oxygen _____ LEL _____ CO _____ Time _____ Initials _____					
Oxygen _____ LEL _____ CO _____ Time _____ Initials _____					
Oxygen _____ LEL _____ CO _____ Time _____ Initials _____					
<b>COMMENTS, PRECAUTIONS, OR CORRECTIVE ACTIONS TAKEN:</b>					
<b>NOTE</b>			<b>Competent Person Printed Name</b>		
<ul style="list-style-type: none"> <li>Before workers enter the trench/excavation, all unsafe conditions must be corrected.</li> <li>If any hazardous conditions are observed while workers are in the trench/excavation, all workers must evacuate the trench/excavation immediately, and no one allowed to reenter until corrective action has been taken.</li> <li>After a substantial change in conditions such as a rainfall, the competent person should inspect the trench/excavation and execute a new inspection checklist.</li> </ul>					
			<b>Competent Person Signature</b>		

<b>Vehicle Inspection Form</b>	<b>Company:</b> _____
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**Make:** \_\_\_\_\_ **Model:** \_\_\_\_\_ **Unit No:** \_\_\_\_\_ **Week Ending:** \_\_\_\_\_

	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Engine oil							
Lubrication							
Starting system							
Instruments (speedometer and temperature gauge)							
Cooling system (radiator)							
Air system							
Glass							
Mirrors (rearview and left outside)							
Defroster							
Brakes							
Steering system							
Tires							
Headlights							
Taillights							
Brake lights							
Horn							
Windshield wipers							
Fire extinguisher							
Seatbelts							
Backup alarm							
Condition of vehicle body							
Other							
<b>Initials of inspector</b>							

These items are to be checked prior to each shift's use. Report ALL items in need of repair to the mechanics at the time of inspection. Return the completed sheet to the equipment superintendent at the end of the week.

**To be completed by the mechanic**

Date reported	Repairs made:	Date repaired

Signature of the equipment superintendent: \_\_\_\_\_

<b>Verification of Load-Bearing Capability of Base Support for Supported Scaffolds</b>	<b>Company:</b> _____
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This document outlines the process for verification of the load-bearing capability of base support for supported scaffold builds on or in plant equipment exposed to wear from flue gas, ash and other abrasives.

<b>Plant:</b>	<b>Unit:</b>	<b>POET:</b>
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<b>Verification Process</b>	
1.	The Southern Company representative communicates the location and load requirements with the scaffold contractor.
	<i>Notes:</i>
2.	The scaffold erection company's qualified or competent person submits a drawing of the scaffold. This drawing shall detail all load-bearing members and support structure.
	<i>Notes:</i>
3.	A qualified engineer will estimate the surface's ability to support the intended load based on as-built drawings and wear.
	<i>Notes:</i>
4.	Before the build, the qualified engineer will confirm these estimates from inspection results.
	<i>Notes:</i>
5.	Any visible damage to the supporting base or attachment lugs will be tested using recognized NDE procedures.
	<i>Notes:</i>
6.	Any necessary repairs must be coordinated with the Southern Company representative or SCS. All weld repairs will be performed by a certified welder following recommended weld procedures.
	<i>Notes:</i>