ISSC-ESH-PL-004 R18
Effective Date: 09/25/19

THE SWIFT STALEY TEAM

WORKER SAFETY AND HEALTH PLAN

Approved by: Tammy Courtney Date: 9/25/19

Tammy Courtney
Project Manager

REVISION LOG

Rev. No.	Description of Modification	Pages	Date
Revisions 0 through 9 from previous contracts.			
10	Revisions made to reflect changes in Paducah Infrastructure Support Services contract DE-EM0003733.	All	10/22/15
11	Minor changes throughout to reflect annual review updates.	All	07/08/16
12	Revised to remove references of inactivated SST Emergency Management procedures.	29, 32	03/10/17
13	Added language to clarify how WSHP requirements are flowed down to subcontractors, vendors, and suppliers. Added specification of NFPA 70E version SST follows. Revised traffic safety section to include awareness campaigns and incentive programs. Added firearms safety, construction safety, biological safety, and lasers sections. Updated references and responsibilities throughout.	All	08/24/17
14	Replaced previous SST.ESH-0001, *Worker Safety and Health Plan*, to updated format for more streamlined plan process providing guidance regarding Paducah Infrastructure Services Contract DE-EM0003733.	All	07/26/18
15	Revised to update safety and health consensus standards as updated in the January 17, 2018 Technical Amendment to 10 CFR 851 (Federal Register notice 59947) and added Attachment A, NFPA-70E-2015 Hazard Abatement Plan.	All	10/17/18
16	Revised per PPPO-02-5224000-19 to incorporate DOE comments. Revised to reflect compliance with NFPA 70E-2018 and update Attachment A, NFPA-70E-2015 Hazard Abatement Plan.	20-21, 46	01/23/19
17	Revised to address IM-2019-89-02, 091-01, 092-01, 093-01, 095-01, 096-01, 106-01, 109-02, 110-01, & PADU-19-IA-101488-O-01	All	07/08/19
18	Revised to address storage of flammables and use of portable heaters while removing reference to ISSC-ESH-PR-029, which was inactivated. Updated Figure 1, Organizational Chart. Other changes are editorial only. Submitted to PPPO for Information only.	8, 22	09/25/19

CONTENTS

FIGURE

ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
ACM	Asbestos Containing Material
AHA	Activity Hazard Assessment
AHJ	Authority Having Jurisdiction
ALARA	As Low As Reasonably Achievable
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
CAAS	Criticality Accident Alarm System
CAIRS	Computerized Accident/Incident Reporting System
CAT	Consolidated Annual Training
CFR	*Code of Federal Regulations*
D&R	Deactivation and Remediation
dBA	Decibel A Weighted Scale
DOE	U.S. Department of Energy
DUF_6	Depleted Uranium Hexafluoride
EMS	Environmental Management System
ES&H	Environment, Safety, and Health
GET	General Employee Training
HAZCOM	Hazard Communication
HPR	Highly protected risk
HR	Human Resources
IER	Initial Event Report
IH	Industrial Hygiene
ISMS	Integrated Safety Management System
ISSC	Infrastructure Support Services Contract
JTHA	Job Task Hazard Analysis
LOTO	Lockout/Tagout
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
O	Order
O&M	Operations & Maintenance
O/FM	Organizational/Functional Manager
OMP	Occupational Medical Provider
ORPS	Occurrence Reporting and Processing System
OSHA	Occupational Safety and Health Administration
PAF	Position Assignment Form
PGDP	Paducah Gaseous Diffusion Plant
POD	Plan-of-the-day
PPE	Personal Protective Equipment
PPPO	Portsmouth/Paducah Project Office
QA	Quality Assurance
RP	Radiological Protection
RPP	Radiation Protection Program

SDS	Safety Data Sheet
SME	Subject Matter Expert
SSC	Structure Systems & Components
SST	Swift & Staley Team
STD	Standard
TLV	Threshold Limit Values
WSHP	Worker Safety and Health Plan

1. INTRODUCTION

Swift & Staley Inc. (hereinafter referred to as Swift & Staley Team [SST]) is dedicated to the concept that all accidents, injuries, and incidents are preventable and is committed to integrating safety into all aspects of work planning and work execution as required by 10 *Code of Federal Regulations* (*CFR*) 851, *Worker Safety and Health Program*. This Worker Safety and Health Plan (WSHP) is applicable to all work activities performed under the Paducah Infrastructure Services and Support Contract (DE-EM0003733).

1.1 Purpose

This WSHP meets the requirement contained in 10 *CFR* 851.11(a) to submit to the U.S. Department of Energy (DOE) for approval a Worker Safety and Health Program. The WSHP provides the framework for ensuring necessary and sufficient protection for workers, the environment, and the public.

1.2 Goals and Objectives

The ultimate goal of the WSHP is to minimize the risk of occupational injuries. Performance Objectives, Measures and Commitments are established through the annual Integrated Safety Management System (ISMS) declaration and include goals for minimizing occupational injuries, preventing exposure to hazardous energy, and continuous improvement of SST's safety culture. Annual meetings are held to review existing WSHP goals and objectives and develop those goals and objectives based on current trends and concerns for the upcoming calendar year. Employees and elected representatives are invited to attend these meetings and provide their input.

1.3 Integration of Plans

SST plans are in place and support implementation of this WSHP. All of the SST plans provide the framework for a comprehensive and integrated overall program.

These integrated plans include, but are not limited to, the following:

- ISSC-ESH-PL-002, *Waste Management Plan*
- ISSC-ESH-PL-004, *Worker Safety and Health Plan*
- ISSC-ESH-PL-006, *Environmental Management System*
- ISSC-ESH-PL-008, *Radiation Protection Program (RPP) Environmental Radiation Protection Program*
- ISSC-ESH-PL-010, *Integrated Safety Management System Description*
- SST.QA-0001, *Quality Assurance Plan*

2. ORGANIZATION ROLES AND RESPONSIBILITIES

The SST Project Manager is responsible for managing and guiding the company toward the safe performance of all work, has ultimate responsibility for safe accomplishment of work, and leads in setting the company standards and expectations. Other company managers and supervisors work as a team to achieve project integration and safe performance of work. The Management Team is responsible for compliance with applicable requirements and procedures, allocation of resources, integration of project execution and support functions, and focusing on safe project completion. SST Organizational Managers provide support at the programmatic level and perform programmatic oversight functions. They also share lessons learned among the team to improve safety and compliance. SST managers work closely with the workforce to ensure the SST safety expectations are defined clearly and understood.

The SST Organization is depicted in Figure 1.

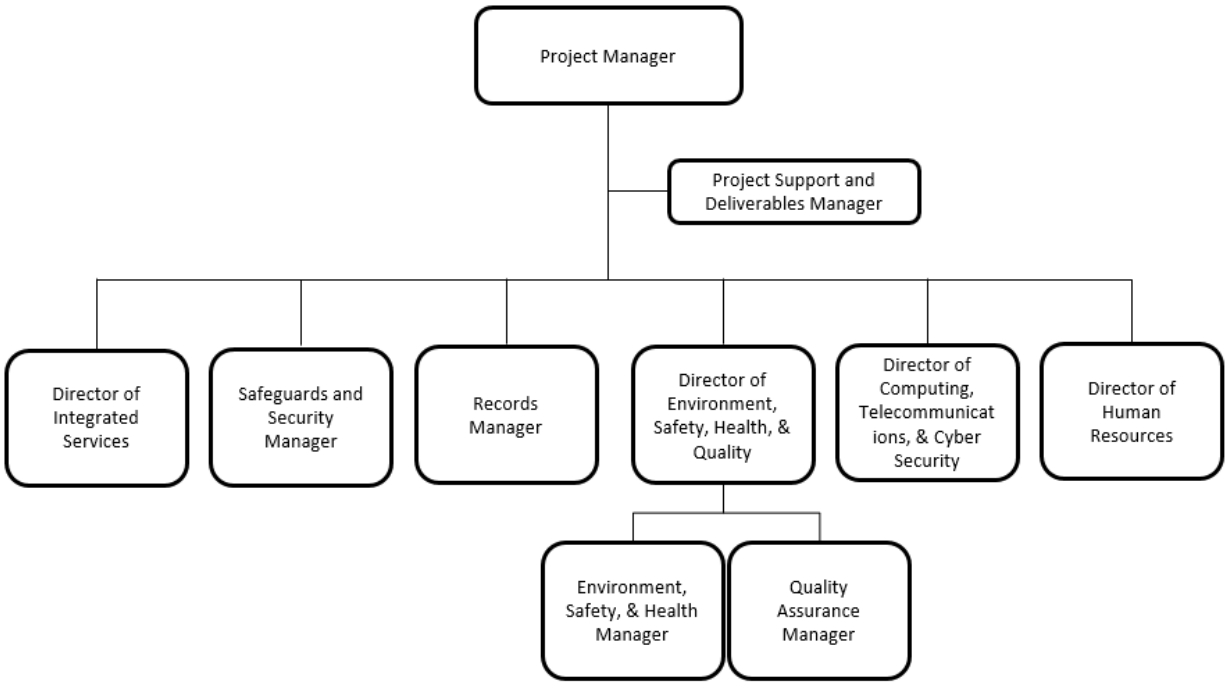

Figure 1. Swift & Staley Team Organizational Chart

2.1 Management Responsibilities

2.1.1 PROJECT MANAGER RESPONSIBILITIES

- Creating and maintaining an organizational culture that encourages open communication and reporting of health and safety matters; and

- Ensuring accountability for WHSP performance.

2.1.2 ENVIRONMENT, SAFETY AND HEALTH MANAGER RESPONSIBILITIES

- Developing and maintaining this WSHP and ensuring it effectively implements the requirements of 10 CFR 851 as applicable to the project scope of work;
- Establishing written policy, goals, objectives and performance measures for worker safety and health with involvement from workers and their elected officials;
- Assigning WSHP responsibilities to qualified personnel and ensuring performance is evaluated and personnel are held accountable;
- Establishing procedures for workers to report fatalities, injuries, illnesses, incidents, and hazards without reprisal and prompt response to such reports; and
- Establishing procedures for workers to stop work or decline to perform an assigned task because of a reasonable belief that the task poses an imminent risk of death, serious physical harm, or other serious hazard to workers, in circumstances where the workers believe there is insufficient time to utilize normal hazard reporting and abatement procedures.

2.1.3 FUNCTIONAL AND FRONT-LINE MANAGERS RESPONSIBILITIES

- Creating and maintaining an organizational culture that encourages open communication and reporting of health and safety matters;
- Ensuring accountability for WHSP performance;
- Ensuring workers are informed of their rights and responsibilities under this WSHP;
- Involving workers and their elected representatives in the identification and control of workplace hazards;
- Ensuring workers have access to information relevant to the WSHP; and
- Communicating health and safety issues and concerns to affected workers.

2.2 Employee Responsibilities and Rights

2.2.1 ALL EMPLOYEES RESPONSIBILITIES

- Following requirements in WSHP implementing procedures; and
- Reporting work-related injuries, incidents, and observed unsafe conditions.

2.2.2 ALL EMPLOYEE RIGHTS

- Participate in WSHP related activities during normal working hours;
- Observe exposure monitoring activities;
- Be notified of exposure monitoring results;
- Accompany any person performing a physical inspection of the workplace for the purpose of aiding the inspection;
- Receive results of inspections and accident investigations;
- Express concerns related to worker safety and health without fear of reprisal;
- Decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious physical harm to the worker coupled with a reasonable belief that there is insufficient time to seek effective redress through normal hazard reporting and abatement procedures; and
- Stop work when the worker discovers employee exposures to imminently dangerous conditions or other serious hazards; provided that any stop work authority must be exercised in a justifiable and responsible manner in accordance with procedures established in the approved worker safety and health program.
- Access:
  - DOE safety and health publications;
  - This WSHP;
  - Standards, Plans, Procedures, Hazard Assessments, and Work Control documents;
  - Safety and Health posters and other information related to worker rights and responsibilities; and
  - Occupational Safety and Health Administration (OSHA) Recordkeeping documentation subject to Freedom of Information Act requirements.

3. MANAGEMENT OF SUBCONTRACTORS

Subcontractors are contractually required to comply with this WSHP. Activity Hazard Assessments (AHAs) are used to flow down applicable Environment, Safety and Health (ES&H) requirements. ISSC-BM-PR-005, *Developing and Evaluating a Request for Proposal* establishes the requirements for flowing down ES&H requirements to subcontractors and establishes the process for selecting qualified subcontractors with consideration of past ES&H performance. An SST Project Lead is assigned to provide oversight of subcontractor work and ES&H oversight is provided using a graded approach based on the anticipated level of ES&H risk. At a minimum, intermittent ES&H oversight is provided.

3.1 Management of Vendors and Suppliers

Vendors and suppliers providing goods and services under the Paducah Infrastructure Contract that are not subcontracted to SST under ISSC-BM-PR-005, *Developing and Evaluating a Request for Proposal,* also are subject to the requirements of this WSHP and implementing SST procedures; however, flow down of ES&H requirements is a graded approach based on the risks associated with the work activity. For vendors and suppliers who provide only delivery services for SST, ES&H flow down may be limited to training and/or AHAs to address the limited hazards and requirements associated with such work activities. Additionally, trained and knowledgeable SST employees may escort these vendors and suppliers to ensure ES&H requirements are properly followed. Vendors and suppliers performing hands-on work are managed in accordance with ISSC-PM-PR-003, *Work Planning and Control,* which includes the necessary flow down of this WSHP and implementing SST procedure requirements.

3.2 Safety Oversight

Experienced Safety Specialists provide oversight of work activities using a graded approach. For routine work activities such as Janitorial services, Safety Specialists evaluate work activities to identify potential hazards, develop AHAs to document potential hazards and required controls, and are readily available to evaluate and address safety concerns. For non-routine, higher risk activities such as energized work, critical lifts, and confined space entry, Safety Specialists additionally provide field oversight of work activities.

4. EMPLOYMENT INVOLVEMENT

Workers are encouraged to provide feedback and suggestions for improvement to enhance safety and efficiency. Worker involvement, feedback, and suggestions are sought through the following:

- Involving workers in safety and job planning walk-downs.
- Involving workers in development of goals, objectives, and performance measures.
- Performing pre-job briefings.
- Developing and reviewing AHAs, procedures, etc.
- Holding interactive meetings.
- Reporting near misses and having interactive discussions of personal near-miss situations.
- Reviewing lessons learned determined to be pertinent to a given scope of work with workers. Lessons learned are covered in the initial pre-work session and also discussed as topics for pre-job briefings, as applicable. Workers are encouraged to interact with shared personal experiences during these reviews. Lessons learned

are obtained from sources such as DOE, prime contractors, and others. (Reference ISSC-PM-PR-003, *Work Planning and Control*.)

- Documenting feedback and suggestions contributed by workers during pre- and post-job briefings, hazard identification database, walk-downs, etc. Forms are made readily accessible to provide concerns and suggestions. Immediate actions are taken to address those that impact the safety and health of the worker. (Reference ISSC-HR-PR-002, *Employee Concerns*.)

5. INTEGRATED SAFETY MANAGEMENT SYSTEM

The ISMS further described in ISSC-ESH-PL-010, *Integrated Safety Management System Description*, is a process to support the implementation of Worker Safety and Health requirements established by this plan. By breaking the overall work process into the following elements, better focus can be provided to individual elements, all of which are critical to worker safety and continuous improvement.

1. Define the scope of work.
2. Identify potential hazards.
3. Analyze the hazards and establish appropriate controls.
4. Perform the work using established controls.
5. Provide feedback for improvement of the preceding 4 elements.

ISSC-PM-PR-003, *Work Planning and Control*, establishes the fundamental requirements for performing all of these steps.

ISSC-ESH-PR-001, *Hazard Assessments*, establishes specific requirements for documenting and communicating potential hazards and appropriate controls. Worker Safety and Health requirements established by this plan are primarily implemented through this Hazard Assessment process.

6. ACTIVITY HAZARD ASSESMENT

AHAs are performed to identify the hazards associated with work activities and the controls required to minimize the risk of injury from those hazards. Hazard controls are selected based on the following hierarchy where feasible and appropriate:

- Elimination or substitution of the hazards;
- Engineering controls;
- Work practices and administrative controls; and
- Personal protective equipment.

SST supervisors, workers, and Subject Matter Experts (SMEs) are called upon, as necessary, to perform thorough work area walk-downs to determine the hazards associated with a task. Potential exposure to industrial hazards such as hazardous energy, lead, asbestos, chemicals, noise, heat, etc., is considered. Job Task Hazard Analyses (JTHAs) are used as needed to identify hazards and develop AHAs for more

complex tasks or projects. The AHA and JTHA process is implemented by ISSC-ESH-PR-001, *Hazard Assessments*.

These hazard assessments are considered “living documents” and may be redlined in the field to address changes in scope, hazards, controls, etc. Changes made to these hazard assessments are reapproved by the impacted parties prior to performing work. The SST ES&H staff, SST management, and workers are responsible for assessing the implementation of these hazard assessments in the field and taking appropriate action(s) based on these assessments, up to and including stopping work activities, if necessary, to protect the safety and health of employees and the environment.

7. MANAGING UNSAFE CONDITIONS AND BEHAVIORS

7.1 Stop-Work Authority

In accordance with the SST ISMS and Environmental Management System (EMS) programs, all employees, subcontractors, and visitors have suspend/stop-work authority. (Reference ISSC-ESH-PR-009, *Suspension of Work [Safety-Related]*.) All individuals involved in any aspect of a project have the authority and responsibility to stop work for any perceived threat to the safety and health of the workers, other personnel, or the environment. Safety and health concerns shall be brought to the attention of the supervisor or respective manager. Management will evaluate the situation and, based on results of their investigation, knowledge, and professional judgment, initiate actions to rectify the situation in question. In the case of an imminent danger or emergency situation, anyone can halt activities and instruct all other affected site workers to pull back to a designated safe area. At such time, management shall be notified and will evaluate the situation and notify the Project Manager, ES&H Manager, and others as appropriate.

7.2 Unsafe Conditions

Routine inspections of SST work areas are performed to identify unsafe conditions. Additionally, unsafe conditions may be identified by any SST employee or subcontractor during the performance of their normal work duties. Such conditions are reported to ES&H for evaluation. Some unsafe conditions may be immediately corrected while others may require more significant level of effort. If an unsafe condition cannot be immediately corrected, interim actions are taken as needed to minimize the risk of injury. SST utilizes a Hazard Tracking database to track reported unsafe conditions and ensure such conditions are corrected.

7.3 Unsafe Behaviors

Supervisors are responsible for ensuring employees follow established procedures, rules, and regulations. Unsafe behaviors, such as an employee failing to wear required PPE, implement a required hazard control measure, or follow a traffic safety requirement, are reported to the employee’s supervisor. ISSC-HR-PR-005, *Progressive Discipline*, establishes the requirements for correcting unsafe behaviors.

8. SAFETY

8.1 Introduction

The summaries provided in this section focus on the major provisions of the WSHP that will be applied based on the type and magnitude of hazards involved and the applicable standards, regulations, and DOE orders required for establishing the Safety Program. SST procedures, Work Packages, and AHAs will be used to implement WSHP requirements applicable to the specific work scopes. The ISMS/EMS core functions and guiding principles are implemented by ISSC-ESH-PL-010, *Integrated Safety Management System Description*. SST workers are assured of a suitable work environment through a variety of integrated mechanisms. Workers are periodically indoctrinated by the Human Resource (HR) group concerning signs of, avoidance of, and reporting avenues for workplace violence. SST also has policies and procedures that encourage early reporting, counseling, medical assistance, and disciplinary measures to prevent workplace violence. (Reference SSI.HR-0009, *Employee Handbook.*) SST will quickly address and prevent workplace violence concerns.

8.2 Required Safety Meetings

SST conducts meetings with all employees at least once each month to discuss safety, environmental, quality, and other topics of relevance to the project. Additional meetings are conducted, as needed, to address specific topics of interest and adverse trends. Employees may also attend daily plan-of-the-day (POD) meetings as a pre-shift review of work activities and any associated safety, environmental, or quality concerns. Managers also address pertinent safety and environmental information in staff meetings.

8.3 Personal Protective Equipment

The use of appropriate Personal Protective Equipment (PPE) is required for personnel involved in operations where exposure to hazardous conditions exists and cannot be eliminated by engineered controls, administrative controls, or where such equipment is needed to reduce hazards. PPE is selected and used in accordance with OSHA standards and other applicable standards. PPE is used and maintained in accordance with the manufacturer's instruction/requirements. (Reference ISSC-ESH-PR-020, *Personal Protective Equipment*.)

8.4 General Safety Hazards and Controls

8.4.1 ELECTRICAL HAZARDS

Electrical hazards that may be present in the workplace include undetected or hidden live wires, deteriorating wiring insulation, buried power lines, overhead power lines,

transformers, electrical generators, and lighting. Any work on these electrical systems/equipment shall be performed by trained/qualified persons in accordance with applicable requirements of the current OSHA standards, the National Electric Code, National Fire Protection Association (NFPA) 70E, and as spelled out by SST Procedures ISSC-ESH-PR-007, *Instructions for Lockout/Tagout*; ISSC-ESH-PR-006, *Electrical Safety*; and ISSC-PM-PR-006, *Excavation/Penetration Activities*. SST also conducts thorough walk-downs and develops specific work controls and AHAs, as necessary.

SST has conducted a detailed evaluation of its potential tasks involving electrical sources/hazards with regard to compliance with NFPA 70, *National Electric Code*, and NFPA 70E, *Standard for Electrical Safety in the Workplace*. As a result, SST has ensured that electrical tasks are reviewed thoroughly for potential hazards, compliance, and safeguards. NFPA 70E-compliant safety devices and clothing are required to be used.

SST has assessed the impact of compliance with the updated consensus standards incorporated by reference in the January 17, 2018 Technical Amendment to 10 CFR 851 (Federal Register notice 59947). Attachment A, *NFPA 70E*-2018 Hazard Abatement Plan, identifies the actions needed and implementation schedule for SST to be in full compliance with NFPA 70E-2018. Requirements from later versions of NFPA 70E may be implemented as deemed appropriate by the ES&H Manager.

The actions identified in Attachment A are intended to ensure the identification and control of electrical hazards in accordance with NFPA 70E-2018.

8.4.2 LOCKOUT/TAGOUT OF HAZARDOUS ENERGY SOURCES

In order to provide for the safety of personnel during construction or maintenance activities that may involve the potential for exposure to hazardous energy sources (chemical, electrical or physical), such equipment or systems shall be isolated, locked out and tagged out, and verified in accordance with SST lockout/tagout (LOTO) requirements. SST's LOTO procedure (reference ISSC-ESH-PR-007, *Instructions for Lockout/Tagout*) references and adopts the site LOTO procedure developed by the DOE Deactivation and Remediation (D&R) Contractor to maintain consistency with the site's program. SST reviews proposed changes to the D&R contractor's LOTO procedure to ensure awareness and compliance with requirements. Authorized and affected personnel are trained in accordance with the above requirements.

8.4.3 SEVERE WEATHER

Due to the nature of the scope of work being conducted by SST, personnel may be exposed to adverse weather conditions. If severe weather is approaching, an announcement will be made over the public address system by the Plant Shift Superintendent to warn of the hazardous condition and protective actions necessary.

8.4.4 HOT WORK AND FIXED WELD SHOP OPERATIONS

All hot work is performed in accordance with ISSC-ESH-PR-016, *Welding, Burning, and Hot Work*. The requirements of this procedure are based on the requirements of 29 CFR 1926 Subpart J, *Welding and Cutting*, and NFPA/American National Standards Institute (ANSI) Z49.1-2012, *Safety in Welding, Cutting, and Allied Processes*. Hot work includes those processes such as arc welding, oxy-fuel gas welding and cutting, open-flame soldering, brazing, thermal spraying, oxygen cutting, arc cutting, heat treating, grinding (including abrasive disc cutting), thawing pipes, hot riveting, and similar applications producing spark, flame, or heat sufficient to cause ignition of combustible materials.

Specific attention is given to the control of combustible and flammable materials in the area and the use of a fire watch. The fire watch will pay special attention to ensuring the safety of the welders/hot worker, the facility, and the environment from fire. (Reference ISSC-ESH-PR-020, *Personal Protective Equipment*; ISSC-ESH-PR-016, *Welding, Burning, and Hot Work*; and NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*.)

8.4.5 OVERHEAD POWER AND COMMUNICATION LINES

Work sites may have overhead power and communication lines that could pose a special hazard for the operation of heavy equipment such as cranes, forklifts, dump trucks (with bed raised), and aerial work platforms where the possibility of inadvertent contact may exist. Where work is required in proximity to electrical power lines, personnel shall follow ISSC-ESH-PR-006, *Electrical Safety*. This procedure implements the requirements of OSHA 29 *CFR* 1926, *Safety and Health Regulations for Construction*; Subpart CC, *Cranes & Derricks in Construction*; and the NFPA 70E, *Standard for Electrical Safety in the Workplace*. The following is provided as general guidance:

- Minimum clearance between the lines and any part of the crane or other equipment shall be maintained, as required by ISSC-ESH-PR-006, *Electrical Safety*.
- Measures shall be implemented to assure the operators of the affected equipment can maintain the required distances from the lines. The use of spotters, physical barriers, and/or distance markings shall be used, as necessary.
- If the appropriate clearance cannot be maintained, the power lines shall be de-energized in accordance with requirements.
- SST will work closely with the Utility Group (DOE D&R Contractor) for questions regarding power lines.

8.4.6 HOISTING AND RIGGING OPERATIONS

All hoisting and rigging activities (i.e., use of overhead and gantry cranes, mobile cranes, derricks, hoists, rigging devices, and forklift trucks, and devices such as wire rope, chain, metal mesh slings, synthetic-web slings, and special below-the-hook attachments and fixtures) are conducted in accordance with ISSC-ESH-PR-022,

Hoisting and Rigging. This procedure implements the requirements of DOE Standard (STD) DOE-STD-1090-2011, *Hoisting and Rigging*; OSHA; and American Society of Mechanical Engineers (ASME) Standards. Special care shall be taken to prevent load shifts, loss of loads, inadequate lifting capacities, contact with wires, unstable equipment, rollovers, etc.

8.5 Traffic Safety

The following traffic safety requirements will be followed. Failure to adhere to these requirements can result in disciplinary actions up to and including termination of employment with SST.

- Operators of motorized vehicles must possess a valid state-issued driving license.
- Operators of industrial equipment such as forklifts, earth movers, mowing equipment, etc., must be trained and qualified as required by ISSC-OM-PR-004, *Industrial Equipment Operator Qualification*.
- Operators and passengers of all motorized vehicles must wear a seat belt in vehicles so equipped.
- Operators shall obey all site traffic signs (e.g. speed limit, one-way traffic, pedestrian crossings, parking).
- Prior to backing, operators shall perform a 360 degree walk-around of the vehicle to identify any potential obstructions.
- Prior to backing with obstructed visibility, a spotter will be used as needed to assist the operator avoid obstructions.
- When exiting a motorized vehicle, the operator shall turn the engine off and place the transmission in park or in gear if manual transmission. If the vehicle operator needs to exit the vehicle with the engine running to clean windows, perform diagnostics or maintenance, check fluids, or when the work being performed requires the vehicle engine to remain running, the operator shall remain in the immediate vicinity and in line of sight of the vehicle in order to alert people if the vehicle should begin to move.
- Motorized vehicles shall be inspected on a periodic basis to ensure they are in safe working order. Motorized vehicles deemed to be unsafe shall be immediately taken out of service.
- Motorized vehicles shall be maintained through the preventive maintenance program.
- Operators shall immediately report any vehicle accidents or near misses to their supervisor.
- Vehicle accidents shall be investigated in accordance with ISSC-QA-PR-003, *Event Investigation*.
- Corrective actions shall be established to address the cause of vehicle accidents and trends.

- Traffic related accidents are communicated to all SST employees through written reports (e.g. Initial Event Reports [IER]) and/or at regularly scheduled meetings (e.g. All Hands meetings) in order to maintain a heightened awareness on the importance a safe driving habits. Other traffic safety related topics are communicated as needed.
- HR shall address any disciplinary action needed to address motor vehicle safety performance.

8.6 Elevated Work/Fall Prevention and Ladder Safety

All personnel who perform elevated work shall use fall prevention practices in accordance with OSHA standards 29 *CFR* 1910, *Occupational Safety and Health Standards*, Subpart D, *Walking-Working Surfaces*; 29 *CFR* 1926, Subpart L, *Scaffolds*, and Subpart M, *Fall Protection*, as applicable. Elevated work/fall prevention requirements apply to the use of ladders, scaffolds, stationary work platforms, telescoping scaffolds, vehicle-mounted elevating and rotating work platforms, and other miscellaneous equipment used in reaching and working at elevated heights. Fall protection requirements also apply to roofs, unguarded platforms, floors or decks, floor and wall openings, ramps, hoist areas, and excavations/trenches. When SST is working a construction project, the maximum unprotected height is six feet. All other work falls under the General Industry maximum of four feet. Fall restraint devices, such as harnesses and tie offs, will be utilized to prevent injury. Barricades will be installed, floor openings will be protected, and protective devices will be properly inspected and stored.

All work requiring the use of a ladder (portable or fixed) is performed in compliance with 29 *CFR* 1910, Subpart D, and 29 *CFR* 1926, Subpart X, *Ladders*, as applicable and with ISSC-ESH-PR-030, *Fall Protection*. Ladders of the proper height and construction are provided for use. Wherever possible, SST will identify other devices or mechanisms for elevated work to avoid the use of ladders. When ladder use becomes the best or only device suitable for elevated work, SST requires workers to properly tie off extension ladders, never go above the identified safe step on folding ladders, and use proper techniques for ascending, descending, and hoisting items up the ladder. ISSC-ESH-PR-030, *Fall Protection*, further defines fall protection requirements.

8.7 Excavation, Trenching, and Penetrations

Operations involving excavation or penetration into the earth surface, concrete or pavement, and interior penetrations into building walls, floors, and ceilings are subject to various potential hazards (e.g., contact with hazardous or radioactive materials, electrical lines, cave-ins). These operations require that an excavation/penetration permit be obtained before the work is initiated. Additionally, some areas may involve a solid waste management unit, which could have regulatory, permit, or *National Environmental Policy Act* (NEPA) requirements. Excavations and penetration activities are performed in accordance with 29 *CFR* 1926, Subpart P, *Excavations*, and ISSC-PM-PR-006, *Excavation/Penetration Activities*.

8.8 Compressed Gas Cylinders

Compressed gas cylinders are stored and handled in accordance with applicable OSHA 29 CFR 1910 or 29 CFR 1926 standards and NFPA 55, *Compressed Gases and Cryogenic Fluids Code*. Compressed gas cylinders must always be secured to prevent damage and injury and capped when not in use. (Reference ISSC-ESH-PR-033, *Compressed Gases*.)

8.9 Pressure Safety

SST's previous sections in this WSHP for compressed gas cylinders and LOTO establish requirements for pressure safety. SST maintains and operates small commercially available air compressors for shop air and a vehicle hoist and does so in accordance with the manufacturers' instructions. SST also maintains commercially available water heaters outfitted with relief/safety valves as recommended by the manufacturers' instructions. Large pressurized systems are not applicable to SST tasks. (Reference ISSC-ESH-PR-007, *Instructions for Lockout/Tagout*.)

8.10 Slip, Trip, and Fall Hazards

Roadways, access ways, aisles, stairways, scaffolds, and ladders are kept clean and clear of hoses, extension cords, welding leads, and other obstructions that may cause tripping or other accident hazards. Slipping hazards such as grease, oil, water, ice, snow, or other liquids are cleaned up or eliminated on walkways, ladders, scaffolds, other access ways, or work areas. If slipping and/or tripping hazards cannot be completely eliminated, the area is barricaded and posted with applicable hazard postings. Access to facility exits is maintained clear at all times. Routine workplace inspections are performed to identify and eliminate slip, trip, and fall hazards. Additionally, workers are encouraged to report any unsafe conditions observed during their daily work activities.

8.11 Working On or Near Water

Anytime personnel shall be required to work on or near waterways such as ponds, lakes, rivers, or near or above liquid-containing tanks and water or sewage treatment holding ponds where the potential danger of drowning exists, they shall be in compliance with OSHA 29 *CFR* 1926.106, *Working Over or Near Water*. Proper uses of flotation and safety-retrieval devices are specified in the AHA or work instructions.

8.12 Insect and Animal Hazards

Work at the site requires working outdoors, maintaining the grounds, excavating, cleaning roof drains, etc. Anyone working outdoors might come in contact with stinging and biting insects (wasps, bees, and mosquitoes); bird droppings; poisonous plants (poison ivy, poison oak, etc.); and venomous snakes and spiders. Proper identification of these hazards and avoidance whenever possible are the best prevention. SST

provides awareness programs to its workers to help prevent possible injury. SST also emphasizes awareness and provides preventive measures through its work control and hazard assessment processes.

8.13 Ultraviolet Radiation

Many project activities are performed outdoors and employees will be exposed to the harmful effects of ultraviolet radiation such as sunburn and retina damage. AHAs and ES&H briefings are utilized to communicate ultraviolet radiation hazards and mitigation to the employees. SST ensures that sunblock agents and polarized safety glasses are available for its workers.

8.14 Tagging of Defective Tools, Materials, or Equipment

Defective tools, materials, and equipment are not used. Supervisors shall take defective tools, materials, and/or equipment out of service immediately by tagging, destroying, or removing them from the project site. Supervisors remove the tag only upon disposal of defective equipment, off-site shipment, or return-to-service following repair. Defective equipment tags are dated and signed by the person tagging the equipment. Defective equipment tags also contain a description of the problem that requires the equipment, tools, or materials to be tagged. This section is implemented by ISSC-ESH-PR-017, *Defective Equipment Tags*, and also may require implementation of nonconformance controls of ISSC-QA-PR-004, *Control of Nonconforming Items and Services*.

8.15 Housekeeping

All SST employees are responsible for housekeeping and supervisors strictly enforce good housekeeping. All material, scrap, tools, toolboxes, and other equipment are stored in a neat and orderly fashion. Trash and scrap are removed from the work area on a regular basis and are not allowed to accumulate in walkways, under stairs, at the bases and landings of stairs and ladders, and near flammable substances. Frequent work-area walk-downs help maintain good housekeeping.

8.16 Illumination

Adequate illumination intensity is provided in all active work areas and access ways in accordance with OSHA 29 *CFR* 1926.56, *Illumination*. Emergency lighting, where required, is tested and maintained in accordance with NFPA 101, *Life Safety Code*, OSHA standards, and manufacturers' requirements. Temporary lighting will not be allowed to remain in use for extended periods of time in lieu of permanently installed lights.

8.17 Tools

Tools are used, inspected, and maintained in accordance with the manufacturer's requirements and applicable OSHA standards and SST procedures. All tools are maintained in good condition and properly stored when not in use. Tools are not altered,

and they are used only for their intended purposes and within the manufacturer's guidelines. Tool guards are not removed from tools or altered in any way. Power tools and cords are positioned and/or protected from damage while in use or storage. Tools are inspected by the user before each use, with special attention given to power cords (if so equipped). If a power cord has been damaged, the tool is tagged as defective, removed from service, and not used until a new power cord is installed. Electric power tools are double insulated or are grounded.

Owner's manuals are available to personnel operating the tools, and the operators are trained in the safe operation of the tool prior to use. Power tools are equipped with constant pressure switches that will shut off the tool when the switch is released. All bench-mounted and floor-mounted tools are secured against movement or displacement. Bench-mounted grinders are set up and operated in accordance with 29 CFR 1926.303, *Abrasive Wheels and Tools*.

8.18 Signs, Barricades, Guardrails, Handrails, Covers, Stairs, Decks, and Ramps

All signs and barricades are properly colored and labeled in accordance with OSHA 29 *CFR* 1926, Subpart G, *Signs, Signals, and Barricades*. These devices are used to alert workers of potential hazards and may be used to temporarily control access to an area to workers who are knowledgeable of potential hazards. If hazard information is not printed on barricades, then signs or tags are used to describe the hazard. Barricades do not require signs or tags to describe the hazard if the area can be effectively managed by workers at the work location.

Guardrails, handrails, covers, stairs, decks, and ramps are required to be installed and maintained as required by 29 *CFR* 1910 Subpart D, *Walking-Working Surfaces*. Guardrails are typically used to prevent a fall from an elevated surface and do not require signs or tags to describe the hazard.

8.19 Explosives

Reserved – Not applicable to the Infrastructure Support Services Contract (ISSC) scope of work.

8.20 Fire Protection and Prevention

8.20.1 PROGRAM DESCRIPTION

The U.S. Department of Energy Portsmouth/Paducah Project Office (PPPO) has designated a D&R Contractor representative as the Authority Having Jurisdiction (AHJ) to act as DOE's representative for routine fire protection activities at the Paducah site. Routine fire protection activities include issuing of permits; reviewing and approving construction documents and shop drawings (new construction, modification, or renovation); accepting fire protection equipment, materials, installations, and operational procedures (fire system inspection and testing); other routine activities that are specifically designated by the DOE Heads of Field Elements; and interpretation of

building codes or standards. Any non-routine fire protection activity must be referred to the PPPO AHJ designee. D&R Contractor procedure CP2-FP-2000, *Fire Protection Program Description for the Paducah Gaseous Diffusion Plant, Paducah Kentucky* establishes the site-wide (including the Depleted Uranium Hexaflouride [DUF_6] Conversion Facility and Infrastructure Contractor project) Fire Protection requirements to:

- Minimize the likelihood of occurrence of a fire-related event;
- Minimize the consequence of a fire-related event affecting the public, workers, environment, property and missions;
- Provide a level of safety protection consistent with the “highly protected risk (HPR)” class of industrial risks;
- Minimize unacceptable interruptions of vital DOE programs resulting from fire; and
- Minimize fire damage to critical process controls and safety related Structure Systems and Components (SSCs).

CP2-FP-2000, *Fire Protection Program Description for the Paducah Gaseous Diffusion Plant, Paducah Kentucky*, Table 1 specifies SST responsibilities under this site-wide Fire Protection Program.

ISSC-ESH-PR-027, *Fire Protection and Evacuation Alarms*, provides guidance for maintaining exit routes and access to fire protection system components, storage of flammable materials, use of portable heaters, responding to fire emergencies, and inspection of portable fire extinguishers and emergency lighting systems.

ISSC-ESH-PR-016, *Welding, Burning, and Hotwork*, establishes the minimum requirements for fire protection when performing tasks such as welding, use of a torch for soldering, brazing or cutting, metal grinding or sawing, and drilling/cutting into components that have contained combustible/flammable materials.

8.20.2 HOUSEKEEPING AND COMBUSTIBLE CONTROLS

All SST work shall be conducted in a manner that minimizes the quantity of combustible material at a facility and disposes of unnecessary combustible materials in a timely manner. Proper disposal of unnecessary combustible materials at the end of each work shift and performing general housekeeping to maintain clean work areas is required.

8.20.3 COMBUSTIBLE AND FLAMMABLE LIQUIDS

Storage and use of flammable and combustible liquids are in conformance with NFPA 30, *Flammable and Combustible Liquids Code*, and all applicable OSHA requirements. To the extent possible, refueling of equipment and vehicles takes place outside of structures. Where this is not possible, such refueling is addressed by an AHA. SST operates an 8,000-gallon capacity fueling station (C-752-B). Four fuels, combustible

and flammable, are dispensed at the C-752-B location. This facility was constructed using NFPA 30, *Flammable and Combustible Liquids Code*. It is operated per NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*, and PGDP-OM-PR-001, *Operation of the C-752-B Fuel Dispensing Station*.

8.20.4 TEMPORARY STRUCTURES

Where temporary structures are needed, they shall be located such that a fire in them will not threaten SST facilities or equipment. This is accomplished by the use of NFPA 80A, *Protection of Buildings from Exterior Fire Exposures.* Evaluation by a qualified fire protection engineer may be necessary. All temporary structures shall comply with the egress requirements of NFPA 101, *Life Safety Code.* Other considerations also may be necessary with regard to NEPA regulations, proper tie-downs for stability, and audibility of plant alarms (e.g., Criticality Accident Alarm System [CAAS]).

8.21 Firearm Safety

Reserved – Not applicable to the ISSC scope of work.

8.22 Construction Safety

Construction activities such as excavations, paving, concrete work, roofing, and similar are managed the same as routine SST work activities. Such work is controlled under the SST work control process as defined by ISSC-PM-PR-003, *Work Planning and Control*. The work control process ensures a hazard assessment is performed as required by ISSC-ESH-PR-001, *Hazard Assessments*. The AHA will include a review of site conditions, drawings, equipment, and processes to be used in the execution of the work. The AHA serves as the written construction project safety and health plan for construction activities. Typically, an Operations and Maintenance (O&M) Supervisor will serve as the designated representative who is knowledgeable of project hazards; will provide oversight of the project as needed to ensure safe execution; and has full authority to address issues or concerns identified. Where required by a specific OSHA regulation, a trained and qualified competent person shall provide oversight of the construction activity.

Project work activities are managed under ISSC-PM-PR-002, *Project Work Process*. Project activities are defined as new plant modifications or repairs added to the SST ISSC by the DOE. Projects are typically construction field activities conducted by subcontractors performing work on behalf of SST at the Paducah site.

8.23 Biological Safety

Reserved – Not applicable to the ISSC scope of work.

9. INDUSTRIAL HYGIENE

9.1 Introduction

The purpose of this section is to describe the key elements of the SST Industrial Hygiene (IH) program. The summaries provided in this chapter focus on the major provisions of the IH program based on the type and magnitude of hazards identified in SST facilities and activities.

SST utilizes trained ES&H staff proficient in recognizing inherent hazards associated with tasks. These health and safety professionals implement a comprehensive and effective IH program. The SST program is based on the appropriate standards and regulations (i.e., OSHA, American Conference of Governmental Industrial Hygienists [ACGIH], National Institute for Occupational Safety and Health [NIOSH], etc.). Through AHA development, project planning, and task observations, SST determines the need for an assessment of chemical and physical hazards. Such assessments validate controls or identify the need for additional controls to ensure hazards and worker health risks are mitigated.

ISSC-ESH-PR-032, *General Industrial Hygiene Program,* provides an overview of chemical and physical hazards associated with the ISSC as well as methods for assessment and control.

9.2 Hazards and Controls

9.2.1 NOISE

Exposure to noise levels in excess of the ACGIH Threshold Limit Values (TLV) may lead to temporary or permanent hearing loss. Fixed areas where noise levels routinely may exceed these levels are posted as “CAUTION Noise Hazard Areas – Hearing Protection Required.” Equipment that produces noise levels that exceed these levels will require the use of hearing protection through the AHA. (Reference ISSC-ESH-PR-023, *Occupational Noise Exposure and Hearing Conservation Program*.)

9.2.2 TEMPERATURE EXTREMES (HEAT STRESS/COLD STRESS)

Working in hot environments can result in heat illnesses including heat exhaustion and heat stroke. Personal protective clothing can increase the likelihood of heat-related illness, the latter being a life-threatening condition. Supervisors are responsible for briefing workers on the signs of heat stress when temperature conditions require it. Where feasible, engineering controls, such as fans or shade canopies, are utilized to minimize the temperature of the work area. Due to the transient nature of the Paducah Gaseous Diffusion Plant (PGDP) infrastructure maintenance activities, work/rest regimes are routinely used as prescribed by the ACGIH to limit exposures to heat.

Working in cold environments can result in frostbite or hypothermia. Protective clothing is the primary means of cold protection. (Reference ISSC-ESH-PR-021, *Temperature Extremes*.)

9.2.3 CONFINED SPACE ENTRY

SST routinely does not perform work in confined spaces; however, maintains a confined space program procedure in the event such work is required. This program includes requirements for identification, evaluation, and control of confined space hazards as required by 29 *CFR* 1910.146, *Permit-Required Confined Spaces*. (Reference ISSC-ESH-PR-019, *Confined Space Program*.)

9.2.4 DUST CONTROL

During activities requiring dust control, water spraying or other authorized methods are used to suppress dust emissions to the lowest practicable level. Depending on specific work area conditions and restrictions, various types of equipment may be used for dust suppression efforts (ranging from water spray tank trucks to handheld garden hoses or garden sprayers).

9.2.5 ERGONOMICS

The interaction of personnel with their working environment may present potential musculoskeletal hazards (ergonomic concerns) such as incorrect lifting of heavy loads, equipment vibrations, improper body positioning, repetitive movements, negotiation of physical obstacles, and work at office computer workstations. SST provides guidance and work evaluations as requested to address ergonomic concerns.

9.2.6 INDOOR AIR QUALITY

Chemicals, ventilation system deficiencies and water intrusion can adversely affect indoor air quality. Air quality evaluations are performed as needed to identify concerns and the need for corrective actions. (Reference ISSC-ESH-PR-032, *General Industrial Hygiene Program*.)

9.2.7 ASBESTOS AND OTHER FIBROUS MATERIALS

Based on the widespread previous use of asbestos in insulation and other building materials, asbestos containing material (ACM) may be encountered during work activities. SST provides asbestos awareness training to ensure employees have the knowledge to properly identify potential ACM and avoid disturbance. ACM that is not damaged or degraded does not represent a health risk. Activities dealing with ACM shall comply with 29 *CFR* 1926.1101, *Asbestos*, and Environmental Protection Agency guidelines. SST routinely does not conduct ACM work, and most likely would subcontract ACM work to certified organizations. Personnel and area monitoring are performed as required and regulatory notifications occur if necessary. SST ensures through the subcontractor selection process that subcontractors performing ACM work are qualified and will meet the requirements in 29 *CFR* 1926.1101. SST establishes project controls, oversight, and flow-down of requirements to satisfy 10 *CFR* 851 compliance through ISSC-PM-PR-003, *Work Planning and Control*.

9.2.8 HAZARDOUS CHEMICALS AND MATERIALS

The use of hazardous chemicals is minimized to the extent practical and employees are provided the necessary training and information necessary to avoid injurious exposure and adverse environmental impact. ISSC-ESH-PR-002, *Hazard Communication,* implements the 29 CFR 1910.1200 requirements for hazardous chemical training, labeling and making Safety Data Sheets readily available to all employees. SST seeks to minimize the storage and use of hazardous chemicals and utilize alternatives that have the least risk to humans and the environment.

9.2.9 REPRODUCTIVE HEALTH PROTECTION

SST makes every reasonable effort to protect workers from exposure to reproductive hazards. Worker exposures to agents or materials that could cause an impact to the reproductive systems are maintained as low as reasonably achievable (ALARA). This ALARA concept, even though typically only referenced for radiological exposures, also is applicable to other hazardous agent exposure. For chemical, biological, and physical type exposure, the guidance and limits established by OSHA are used. SST minimizes worker exposure whenever possible or otherwise provides administrative controls or protective equipment. Pregnant workers may voluntarily notify their supervisor of their pregnancy so that additional precautions can be implemented to further protect the worker and the unborn child. (Reference ISSC-RAD-PR-017, *Reproductive Health Program*.)

9.2.10 BIOLOGICAL MONITORING FOR INDUSTRIAL CHEMICALS

Biological monitoring provides a tool for assessing a worker's actual exposure to chemical substances and for determining the effectiveness of PPE and established work controls. Based on hazard assessments and regulatory requirements, SST determines the need for biological monitoring. Biological Exposure Indices established by OSHA and ACGIH are used to assess biological monitoring results. (Reference ISSC-ESH-PR-032, *General Industrial Hygiene Program.*)

9.2.11 HEAVY METALS

Heavy metals such as lead and chromium may be found in paint. Welding and torch cutting present a risk for exposure to heavy metal fumes. Work activities that involve the potential for exposure to heavy metals are evaluated on a case-by-case basis. Appropriate controls and protective measures are specified in an AHA, procedure, or other work control documentation developed for this activity. Welding and cutting activities that may disturb heavy metals shall be performed in accordance with 29 *CFR* 1926 Subparts J and Z. (Reference ISSC-ESH-PR-032, *General Industrial Hygiene Program.*)

9.2.12 BLOODBORNE PATHOGENS

Any individual who comes in contact with blood or other potentially infectious material either accidentally or as a result of his/her occupation has the potential for exposure to bloodborne pathogens. Individuals who come in contact with blood or other potentially infectious material as a result of a voluntary or involuntary action should report the incident to the ES&H Manager for evaluation and possible medical treatment. The SST ES&H Manager will work in concert with the SST Occupational Medical Provider (OMP) to ensure proper worker awareness and availability to preventive measures, as well as post-exposure assessment and treatment, are adequate. This section is implemented by ISSC-ESH-PR-029, *Bloodborne Pathogens Program,* and in accordance with 29 *CFR* 1910.1030.

9.2.13 RESPIRATORY PROTECTION

Some SST workers, from time to time, may be required to wear a respirator while performing work. The type of contaminants, the task, the concentration, the length of stay, the level of protection required, and other factors are reviewed and considered by the ES&H staff in selection of appropriate respiratory protection equipment.

Only respirators approved by NIOSH are used. Quantitative fit testing using OSHA-specified protocols is required for all employees wearing tight-fitting face-piece respirators. SST ensures that persons required to wear respirators are evaluated properly by the OMP, properly fit tested, and trained. This section is implemented by ISSC-ESH-PR-015, *Respiratory Protection Program,* and in accordance with 29 *CFR* 1910.134 and ANSI Z88.2-2015, *Respiratory Protection*.

9.2.14 LASERS

The Infrastructure Support Services scope of work may require the non-routine use of lasers for work such as ground surveys and grade determinations. Where the use of lasers is required, SST will implement employee protection controls as part of the hazard assessment process and in accordance with ANSI Z136.1-2014, *Safe Use of Lasers*.

9.3 Hazard Communication Program

Hazard Communication (HAZCOM) requirements of the OSHA standards apply to the management of hazardous chemicals used for SST tasks. The HAZCOM program ensures that workplace chemicals are identified and labeled, and that the workers are made aware of the associated hazards and how to safely use and dispose of those chemicals. The employees also are trained in proper handling of the chemicals and are provided with necessary PPE and/or other safeguards. The employee’s right-to-know with regard to chemicals in the workplace is assured. This section is implemented by ISSC-ESH-PR-002, *Hazard Communication,* and in accordance with 29 *CFR* 1910.1200.

9.4 Hazardous Waste Operations and Emergency Response

SST is not directly involved in hazardous waste operations and therefore not subject to the requirements of 29 *CFR* 1910.120, *Hazardous Waste Operations and Emergency Response*, other than 29 *CFR* 1910.120(q) *Emergency Response*. However, SST employees may be required to enter facilities or areas where other DOE contractors are directly involved in hazardous waste operations. In such cases, SST shall follow the training and other requirements stipulated by the responsible DOE contractor.

9.5 Chronic Beryllium Disease Prevention Program

SST does not conduct work in beryllium regulated areas. However, SST employees may be required to enter beryllium regulated areas managed by other DOE contractors. In such cases, SST shall follow the training and other requirements stipulated by the responsible DOE contractor. SST provides beryllium awareness training to employees and medical surveillance for beryllium associated workers who may have been exposed to beryllium at other DOE sites or with previous DOE contractors. This process is further defined in ISSC-ESH-PR-024, *Chronic Beryllium Disease Prevention Program.*

9.6 Exposure Monitoring

9.6.1 WORKPLACE INDUSTRIAL HYGIENE SAMPLING

IH sampling is conducted to detect and quantify potentially hazardous substances and physical agents that may be encountered in work operations and processes. This may include the collection of samples for dusts, asbestos and other fibrous materials, liquids, gases, vapors, fumes, and physical agents such as noise, heat stress, and nonionizing radiation. The sample data is used to help establish necessary protective measures for the worker, public, and environment. SST workers are informed about the results of such hazards and can review that information at any time. (Reference ISSC-ESH-PR-032, *General Industrial Hygiene Program.*)

9.6.2 EQUIPMENT CALIBRATION PROGRAM

Monitoring equipment is maintained and calibrated as required by the equipment manufacturer. ISSC-PM-PR-005, *Control of Measuring and Test Equipment,* establishes this and other requirements necessary to ensure equipment accuracy, precision, and reliability.

9.7 Occupational Health Program

10 CFR 851 requires contractors provide a comprehensive occupational medical program for employees who:

- Work on a DOE site for more than 30 days in a 12-month period; or
- Are enrolled in a medical or exposure monitoring program required by 10 CFR 851 or any other applicable regulation.

ISSC-ESH-PR-010, *Occupational Health Program*, defines SST's comprehensive occupational medical program. This program includes requirements for pre-employment, post-injury, return-to-work, and annual medical evaluations as necessary to ensure worker health and compliance with applicable regulations.

The OMP/physician informs and works with SST in establishing work restrictions. SST works hand-in-hand with the OMP and employee to ensure the return to work is timely, safe, and compatible with SST's tasks and the employee's ability to safely function.

SST and the OMP work cooperatively to devise and offer employee counseling and health promotion opportunities. Such employee assistance programs may include stress management, alcohol/drug abuse rehabilitation, stop smoking programs, employee health fitness programs, etc. SST also ensures that employees who might be subject to work-related exposure to bloodborne pathogens are offered vaccinations as necessary.

9.7.1 EMERGENCY MEDICAL SERVICES

Emergency medical services within the site boundaries are provided by the DOE D&R Contractor as a government-furnished service. Non-life-threatening injuries/illnesses are treated (by SST if first aid in nature) and are followed by an OMP evaluation, as deemed necessary. Any SST employee with a more severe injury requiring treatment beyond the capacity of the SST OMP is transported directly to an off-site medical center for further treatment and evaluation.

9.7.2 PERSONNEL INJURIES

All work-related injuries or illnesses to personnel regardless of how minor shall be reported to the supervisor and the ES&H Manager. Employees who become injured or ill as a result of a work-related exposure or event and who need off-site medical treatment shall report to the SST OMP and provide a physician's release prior to returning to work as required by SSI.HR-0009, *Employee Handbook*. Any work restrictions imposed by SST are based on medical limitations determined by the treating physician. SST maintains and posts the required OSHA injury logs and notifies DOE or other regulatory agencies as required. SST reviews previous worker injuries for possible adverse trends and also uses lessons learned from other organizations to help prevent injuries.

9.7.3 AUDIOMETRIC TESTING

SST personnel who may be exposed to noise levels at or above 85 decibel A weighted scale (dBA) as an eight-hour time-weighted average, without regard to hearing protection devices, are required to participate in an audiometric testing program. The SST OMP conducts baseline and routine re-evaluation audiometric tests and compares/evaluates the results. The ES&H Manager receives and acts upon testing results that might indicate a hearing loss or hearing conservation program weakness. (Reference ISSC-ESH-PR-023, *Occupational Noise Exposure and Hearing Conservation Program.*)

10. TRAINING

ISSC-ESH-PL-001, *Training Program*, implements a worker safety and health training program to ensure all workers exposed or potentially exposed to hazards are provided the training necessary to perform work in a safe manner. This plan includes requirements for initial and periodic training; training to address new hazards or significant changes with existing hazards; and training for individuals who have worker safety and health program responsibilities.

11. EMERGENCY MANAGEMENT

The SST Emergency Management program provides direction, guidance, and oversight necessary for compliance with the contractual requirements in DOE orders and federal and state regulations. This program description sets forth the way in which SST implements the Emergency Management program. It identifies programmatic requirements and describes the roles and responsibilities of individuals and projects in meeting these requirements. SST coordinates emergency functions and plans between other DOE contractors as required by contract. SST also is responsible for providing input for the site-wide Emergency Readiness Assurance Plan and Continuity of Operations Plan.

SST employees are instructed in the proper response to emergencies, including recognition of alarms; recognition of abnormal conditions; location and use of reporting mechanisms such as radio, phone, pull boxes, etc.; and allowed immediate emergency actions, shelters, etc. SST routinely participates in site emergency response drills and is on 24-hour call for site emergencies. SST has a procedure established to aid in performing duties associated with emergencies. (Reference ISSC-ESH-PR-031, *Emergency Operations Center Activities.)*

12. NOTIFICATION AND REPORTING

12.1 Employee Incident Reporting Responsibility

It is every employee's responsibility and a requirement of SST that all injuries or incidents be reported to SST management immediately. Incidents or injuries are reported according to ISSC-ESH-PR-008, *Accident/Incident Reporting*. SST's management team then takes action and performs reporting as required. The facts associated with each incident are gathered quickly, while at the same time steps are taken to mitigate circumstances and conditions to prevent additional problems. SST issues lessons learned and defines and implements corrective actions, as needed.

12.2 Occurrence Notification Reporting and Communications

SST occurrence reporting is initiated any time an individual reports problems, concerns, conditions, or events that have or could have an adverse impact on safety, the environment, health, quality, security, or site operations that exceed the reporting limits

in DOE Order (O) 232.2A, *Occurrence Reporting and Processing of Operations Information*. Occurrences are reported to DOE through the Occurrence Reporting and Processing System (ORPS). The ORPS is implemented by ISSC-QA-PR-008, *Occurrence Notification and Reporting*.

Whenever an incident occurs, the SST QA Manager and the ES&H Manager, or their designees are notified immediately to ensure prompt response.

Occurrences may include any accident/incident that results in employee injury/illness, accident precursor that could result in injury/illness or damage to government equipment and facilities, potential enforcement program noncompliance, or any other unplanned event that may be a violation of a regulatory requirement or that may be viewed negatively by the public or DOE. In situations where an accident or incident has occurred, the scene will not be altered without SST management's concurrence unless it is necessary to mitigate an immediate hazard, stop a spill in progress, or protect human life.

12.3 Accident/Incident Reporting and Recordkeeping

Accidents and incidents are reported as required by and in accordance with ISSC-ESH-PR-008, *Accident/Incident Reporting*. IERs provide an initial notification to the local DOE office and others when an event has occurred. SST maintains and posts the required accident, injury, and illness logs and forms (including OSHA Form 300A or DOE Form 5484.3), as necessary, for compliance. SST also submits any required reports to the DOE Computerized Accident/Injury Reporting System (CAIRS).

13. DOCUMENTATION AND RECORDKEEPING

Records are generated, retained, and dispositioned in accordance with established PGDP-RM-PR-001, *Records Management*.

The quality, completeness, accuracy, and preservation of information, documents, data, records, reports, etc., are managed to meet DOE and National Archives and Records Administration requirements. Concealing, destroying, altering, or otherwise tampering with records is grounds for disciplinary action.

Procedures, plans, and technical documents are developed and maintained in accordance with ISSC-RM-PR-001, *Controlled Documents*.

The current SST procedures, policies, and guidance documents, are accessible to all employees through controlled retrievable methods.

Records and procedures are made available to SST personnel electronically, and by hardcopy when requested.

14. REFERENCES

- 10 *CFR* 851, *Worker Safety and Health Program*
- 29 *CFR* 1910, *Occupational Safety and Health Standards*

- 29 *CFR* 1926, *Safety and Health Regulations for Construction*
- OSHA 300A*, Annual Summary of Work-Related Injuries and Illnesses*
- DOE Form 5484.3*, Individual Accident/Incident Report*
- DOE O 232.2A*, Occurrence Reporting and Processing of Operations Information*
- ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*
- ANSI Z136.1, *Safe Use of Lasers*
- NFPA 30, *Flammable and Combustible Liquids Code*
- NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*
- NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*
- NFPA 55, *Compressed Gases and Cryogenic Fluids Code*
- NFPA 70, *National Electric Code*
- NFPA 70E, *Standard for Electrical Safety in the Workplace*
- NFPA 80A, *Protection of Building from Exterior Fire Exposures*
- NFPA 101, *Life Safety Code*
- SSI.HR-0009, *Employee Handbook*
- CP2-FP-2000, *Fire Protection Program Description for the Paducah Gaseous Diffusion Plant, Paducah Kentucky*
- PGDP-OM-PR-001, *Operation of the C-752-B Fuel Dispensing Station*
- PGDP-RM-PR-001, *Records Management*
- ISSC-ESH-PL-001, *Training Program*
- ISSC-ESH-PL-002*, Waste Management Plan*
- ISSC-ESH-PL-006, *Environmental Management System*
- ISSC-ESH-PL-008, *Radiation Protection Program (RPP) Environmental Radiation Protection Program*
- ISSC-ESH-PL-010, *Integrated Safety Management System Description*
- ISSC-ESH-PR-001, *Hazard Assessments*
- ISSC-ESH-PR-002, *Hazard Communication*
- ISSC-ESH-PR-006, *Electrical Safety*
- ISSC-ESH-PR-007, *Instructions for Lockout/Tagout*
- ISSC-ESH-PR-008, *Accident/Incident Reporting*
- ISSC-ESH-PR-009, *Suspension of Work (Safety-Related)*
- ISSC-ESH-PR-010, *Occupational Health Program*
- ISSC-ESH-PR-015, *Respiratory Protection Program*
- ISSC-ESH-PR-016, *Welding, Burning, and Hot Work*
- ISSC-ESH-PR-017, *Defective Equipment Tags*
- ISSC-ESH-PR-019, *Confined Space Program*
- ISSC-ESH-PR-020, *Personal Protective Equipment*
- ISSC-ESH-PR-021, *Temperature Extremes*

- ISSC-ESH-PR-022, *Hoisting and Rigging*
- ISSC-ESH-PR-023, *Occupational Noise Exposure and Hearing Conservation Program*
- ISSC-ESH-PR-024, *Chronic Beryllium Disease Prevention Program*
- ISSC-ESH-PR-029, *Bloodborne Pathogens Program*
- ISSC-ESH-PR-030, *Fall Protection*
- ISSC-ESH-PR-031, *Emergency Operations Center Activities*
- ISSC-ESH-PR-032, *General Industrial Hygiene Program*
- ISSC-ESH-PR-033, *Compressed Gases*
- ISSC-HR-PR-002, *Employee Concerns*
- ISSC-HR-PR-005, *Progressive Discipline*
- ISSC-PM-PR-002, *Project Work Process*
- ISSC-PM-PR-003, *Work Planning and Control*
- ISSC-PM-PR-005, *Control of Measuring and Test Equipment*
- ISSC-PM-PR-006, *Excavation/Penetration Activities*
- SST.QA-0001, *Quality Assurance Plan*
- ISSC-QA-PR-003, *Event Fact-Finding*
- ISSC-QA-PR-004, *Control of Nonconforming Items and Services*
- ISSC-QA-PR-005, *Integrated Oversight Program*
- ISSC-QA-PR-008, *Occurrence Notification and Reporting*
- ISSC-RM-PR-001, *Controlled Documents*

ATTACHMENT A, NFPA 70E-2018 HAZARD ABATEMENT PLAN

The January 17, 2018 Technical Amendment to 10 Code of Federal Regulations (CFR) 851 (Federal Register notice 59947) requires compliance with National Fire Protection Association (NFPA) 70E-2015 by January 17, 2019. SST is electing to implement NFPA 70E-2018 with the following actions:

1. Revise SST programs and procedures to implement NFPA 70E-2018.
2. Train affected employees on revised SST programs and procedures.
3. Perform arc flash risk assessments for facilities in which SST performs electrical maintenance as required by NFPA 70E-2018.

Implementation Schedule: In response to DOE's request[1]for cost and schedule impact for implementation of this Technical Amendment, SST provided DOE with the above actions and associated cost for implementation[2]. SST anticipates completion of the above actions on or before August 30, 2019.

Justification for Risk: Until the above actions are completed, SST will continue to follow the requirements of NFPA 70E-2004; 29 CFR 1910.147, Control of Hazardous Energy (Lockout/Tagout); 29 CFR 1910 Subpart S, Electrical; and 29 CFR 1926 Subpart K, Electrical for assurance of worker protection from electrical hazards. In the event energized work is required in a facility for which an arc flash risk assessment has not been performed; SST will require de-energizing the electrical circuit. If de-energizing the electrical circuit is infeasible, the work will be postponed until an arc flash risk assessment is completed.

[1] PPPO-01-5140756-18 – Request for Cost and Schedule Impact Assessment and Implementation Plan for Technical Amendment to Title 10, Code of Federal Regulation, Part 851, *Worker Safety and Health Program* (September 24, 2018).

[2] SST-18-8770 – Response to Request for Cost and Schedule Impact Assessment and Implementation Plan for Technical Amendment to Title 10, Code of Federal Regulation, Part 851, *Worker Safety and Health Program* (December 19, 2018).