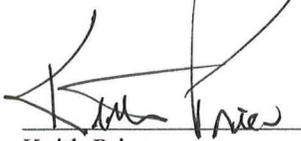
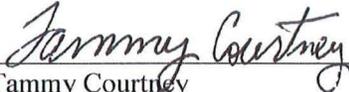




Integrated Safety Management System Description

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REVISION LOG

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CONTENTS

REVISION LOG	ii
TABLES	iv
FIGURES	iv
ACRONYMS	v
1. BACKGROUND	1
2. PURPOSE	1
3. SCOPE	1
4. INTEGRATED SAFETY MANAGEMENT SYSTEM OVERVIEW	2
5. SAFETY MANAGEMENT SYSTEM INTEGRATION	13
6. WORK CONTROL	14
7. PROTECTION OF THE WORKERS, THE PUBLIC, AND THE ENVIRONMENT	14
7.1 PROTECTION OF THE WORKERS	14
7.2 PROTECTION OF THE PUBLIC	16
7.3 PROTECTION OF THE ENVIRONMENT	16
8. TAILORING	16
9. PATH FORWARD	17
9.1 GENERAL MANAGEMENT	17
9.2 ENVIRONMENT, SAFETY, AND HEALTH	17
9.3 GENERAL STATEMENT OF WORK ELEMENTS AND FUNCTIONS	18
9.4 SUBCONTRACTS	18
9.5 SAFETY PERFORMANCE/QUALITY ASSURANCE	18
10. REFERENCES	18

TABLES

Table 1. Integrated Safety Management System Description Guiding Principles Implementation Matrix .2
Table 2. Integrated Safety Management System Core Functions Implementation Matrix6
Table 3. Integrated Worker Protection Program Elements 15

FIGURES

1. Worker Involvement6
2. The Swift & Staley Team Functional Responsibilities and Organizational Chart 12

ACRONYMS

AHA	activity hazard assessment
ALARA	as low as reasonably achievable
<i>CFR</i>	<i>Code of Federal Regulations</i>
DEAR	U.S. Department of Energy Acquisition Regulation
DOE	U.S. Department of Energy
EMS	Environment Management System
ES&H	environment, safety, and health
G	Guide
ISMS	Integrated Safety Management System
ISMSD	Integrated Safety Management System Description
M	Manual
O	Order
P	Policy
PGDP	Paducah Gaseous Diffusion Plant
QA	quality assurance
QAP	Quality Assurance Plan
S&S	Safeguard and Security
SB	Safety Basis
SME	subject matter expert
SST	Swift & Staley Team
VPP	Voluntary Protection Program
WSHP	Worker Safety and Health Plan
WSS	Work Smart Standards

1. BACKGROUND

The U.S. Department of Energy (DOE), in response to Defense Nuclear Facilities Safety Board Recommendation 95-2, committed to implementing an Integrated Safety Management System (ISMS) across the complex by issuing an Implementation Plan in April 1996 and, subsequently, DOE Policy (P) 450.4, *Safety Management System Policy*, in October 1996. The current version of that Policy (DOE P 450.4A), DOE Guide (G) 450.4-1C, *Integrated Safety Management System Manual*, September 2011, along with the DOE Acquisition Regulation (DEAR) clauses promulgated in 48 *Code of Federal Regulations (CFR)* 970.5223-1, 48 *CFR* 970.5204-2, and 48 *CFR* 970.1100-1, requires contractors to follow ISMS objectives, guiding principles, and functions and to describe the approach for implementing and tailoring an ISMS to the contractor's site/facility or activities. Swift & Staley Inc. (hereinafter referred to as Swift & Staley Team [SST]) also adheres to the requirements established in 10 *CFR* 851, *Worker Safety and Health Program*, and DOE Order (O) 414.1D, Admin Chg. 1, *Quality Assurance*.

2. PURPOSE

This ISMS Description (ISMSD) document provides a methodology for managing and integrating safety into all aspects of work planning and execution under the Paducah Infrastructure Services Prime Contract DE-EM0003733 by SST at the Paducah Gaseous Diffusion Plant (PGDP). The SST ISMSD also integrates the elements of the *SST Worker Safety and Health Plan (WSHP)* (SSI.ESH-0001), *The Environmental Management System Manual* (SST.ESH-0008), and Quality Assurance and Quality Assurance Implementation Plan (QAP) (SSI.QA-0001), interfaces with the Safeguard and Security (S&S) system to result in a unified and comprehensive program. Throughout the rest of this ISMSD, the term ISMS refers to this integrated program that includes WSHP, Environmental Management System (EMS), QAP, and S&S.

SST is committed to performing work in a safe, compliant, and cost-effective manner. SST also is committed to performing work in a quality manner. SST implements the ISMS concepts and elements throughout its tasks and activities. SST has adopted the concept of performing all work in accordance with the procedures and requirements. If shortcomings are detected or if unforeseen changes are identified, then each SST employee is empowered to stop the job without fear of reprisal so that improvements can be made. SST makes every effort to involve the appropriate workforce elements in the identification of potential hazards and their mitigation or elimination. SST management commits the necessary resources to enable the safe performance of work, to prevent environmental mishaps, and to implement continued improvement through oversight and feedback processes. Quality will be implemented throughout SST tasks from specifications during procurement, receipt inspections, quality assurance (QA) audits, and input, as necessary, in SST's general work.

3. SCOPE

This ISMSD is applicable to all SST contract (self-performed) and SST subcontractor work at PGDP. The term "Swift & Staley Team" (or SST) is inclusive of its subcontractors. The SST ISMSD is not applicable to work performed by other DOE prime contractors, reindustrialization lessees, or other site tenants. SST communicates with other site contractors/residents, as appropriate, to ensure coordination of safe work activities. If any subcontracted work is judged to be sufficiently complex and/or hazardous, the

subcontractor may be required, by contract, to have and document its own safety management system and provide a Worker Safety and Health Plan that is compatible with the SST ISMSD and 10 *CFR* 851, *Worker Safety and Health Program*.

4. INTEGRATED SAFETY MANAGEMENT SYSTEM OVERVIEW

DOE Guide (G) 450.4-1C subdivides the concept of the ISMS into six primary components: Objectives, Principles, Functions, Mechanisms, Responsibilities, and Implementation. The SST ISMSD is tailored to the work and organizational structure unique to the Infrastructure Support Services Contract. The ISMSD provides mechanisms for doing work safely; unambiguous assignment of responsibilities; and implementation of the ISMSD objectives, principles, and functions.

The SST ISMSD Plan adopts and accepts the ISMSD components, as briefly described below:

- (a) **Objective:** SST integrates safety into management and work practices at all levels addressing all types of work and associated hazards to ensure safety for workers, the public, and the environment.
- (b) **Principles:** SST establishes and implements the seven guiding principles for ISMSD (Table 1) as established by DOE P 450.4A, plus an additional principle (worker involvement) that is imperative to SST ISMSD implementation strategy success.

Principles 1, 2, and 3 relate to responsibilities intrinsic to all five core functions. Those principles help ensure the SST management structure has personnel who are committed to safely accomplishing their mission, understanding their assignments, and carrying out the core safe management functions correctly and efficiently. These three principles are dependent upon management commitment and employee involvement, both of which are SST expectations. The remaining principles relate specifically to the five primary core functions.

Table 1, “Integrated Safety Management System Description Guiding Principles Implementation Matrix,” describes the principles as they relate to the ISMSD and its implementation. Table 2, “Integrated Safety Management System Core Functions Implementation Matrix,” defines SST’s implementation of the five ISMSD core functions.

Table 1. Integrated Safety Management System Description Guiding Principles Implementation Matrix		
Principle 1: Line Management Responsibility for Safety	Line Management, SST Contractor and Subcontractors managing or supervising employees performing work, are responsible for ensuring that work is performed safely and in a manner that provides adequate protection for workers, the public, and the environment. SST senior-level managers, as well as first-line managers and supervisors, support implementation of the integrated ISMSD. Each worker, supervisor, and manager is directly responsible for ensuring his or her own safety and looking after coworkers while providing responsible stewardship of the environmental resources and for promoting a safe and healthful work environment. SST management provides the necessary emphasis and resources to effectively implement ISMSD.	SSI-ESH.0001, <i>Worker Safety and Health Plan</i> SST Procedure 03.01.03, <i>Suspension of Work (Safety-Related)</i> SST Policy SST-0031, <i>Environmental, Safety, and Health Policy</i> Employee Position Descriptions

Table 1. Integrated Safety Management System Description Guiding Principles Implementation Matrix (continued)

<p>Principle 2: Clear Roles and Responsibilities</p>	<p>SST provides clear and unambiguous lines of authority and takes responsibility for ensuring that safety is established and maintained at all organizational levels. SST management reporting lines are defined and authorities and responsibilities are established. Figure 2 defines the SST organization and reporting lines. SST employees and subcontractors are made aware of the authorities and responsibilities, as necessary. All SST employees (management and workers) are made aware of requirements associated with ISMS implementation and, as such, take ownership in the programs. Requirements are identified and flow down to all workers and subcontractors. This overall responsibility for the program resides with SST management. SST procedures define roles and responsibilities clearly. The SST workers and subcontractors have unencumbered access to management with regard to ISMS.</p>	<p>SSI-ESH.0001, <i>Worker Safety and Health Plan</i> SSI.QA-0001, <i>Quality Assurance and Quality Assurance Implementation Plan</i> SST Policy SST-0001, <i>Approval and Signature Authority</i> SST Policy SST-0004, <i>Swift & Staley Team Subject Matter Expert Policy</i> SST Policy SST-0031, <i>Swift & Staley Team Environmental, Safety, and Health Policy</i> SST Procedure 02.04.01, <i>Performance Documents</i> SST Procedure 03.01.02, <i>ES&H Subcontractor Oversight Program</i> SST Procedure 03.01.03, <i>Suspension of Work (Safety-Related)</i> SST Procedure 03.03.01, <i>Training Program</i></p>
<p>Principle 3: Competence Commensurate with Responsibility</p>	<p>SST ensures personnel possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities. SST selects personnel who are competent in their areas of expertise and provide/require that ongoing training supplements and supports continued competence. SST provides oversight for SST employees as well as subcontractors, as necessary, to ensure tasks are performed adequately and safely. SST maintains a qualification matrix (referred to as a Position Assignment Form) for each job category and monitors the employee's training and adherence to the required reading of lessons learned, policies, procedures, requirements, etc.</p>	<p>Employee Position Descriptions Position Assignment Form SST Policy-0002, <i>Training</i> SST Policy 0004, <i>Swift & Staley Team Subject Matter Expert Policy</i> SST Procedure 03.03.01, <i>Training Program</i> SST Procedure 04.01.02, <i>Site Access Requirements and Site Access Cards</i> SST Procedure 04.01.05, <i>Radiological Protection Technician Training</i> SST Procedure 04.01.06, <i>Paducah Radiation Safety Training</i> SST Procedure 06.01.02, <i>Industrial Equipment Operator Qualification</i></p>
<p>Principle 4: Balanced Priorities</p>	<p>SST balances program and project priorities to ensure that worker safety and environmental protection will not be compromised. Through the definition of work scope, SST determines the sequence, schedule, task breakdown, personnel and other details that specify how and when work shall be performed. These details are used to determine ES&H standards and requirements for the work, analyze the hazards, develop controls, and determine what skills and training are required.</p>	<p>SSI-ESH.0001, <i>Worker Safety and Health Plan</i> SSI.QA-0001, <i>Quality Assurance and Quality Assurance Implementation Plan</i> SST Policy SST-0004, <i>Swift & Staley Team Subject Matter Expert Policy</i> SST Procedure 03.02.03, <i>Hazard Assessments</i> SST Procedure 03.03.01, <i>Training Program</i></p>

Table 1. Integrated Safety Management System Description Guiding Principles Implementation Matrix (continued)		
Principle 5: Identification of Safety Standards and Requirements	<p>The terms and conditions that define DOE safety expectations are set forth in contract requirements. DEAR 970.5204-2 requires SST to comply with the requirements of applicable federal, state, and local laws and regulations (including DOE Regulations, Orders, and Policies), unless the appropriate regulatory agency has granted relief in writing. SST uses established work controls, procedures, and SME reviews to help ensure the safety standards and requirements are identified and adhered to. SST's use of a multidisciplinary hazard analysis team composed of Line Management, health and safety professionals, and workers helps identify the applicable standards that apply to the work.</p>	<p>SSI.ESH-0003, <i>Work Smart Standards</i> SSI.QA-0001, <i>Quality Assurance and Quality Assurance Implementation Plan</i> SST Procedure 02.04.01, <i>Performance Documents</i> SST Procedure 03.02.03, <i>Hazard Assessments</i> SST Procedure 06.01.01, <i>Paducah Work Control Process</i> SST Policy 0004, <i>Swift & Staley Team Subject Matter Expert Policy</i></p>
Principle 6: Hazard Controls Tailored to Work Being Performed	<p>SST eliminates hazards when practical, mitigates hazards when possible, and controls hazards when necessary, in that order of precedence. When controls are necessary, SST tailors engineering and administrative controls to the work being performed over the use of PPE. SST communicates the controls clearly and thoroughly to all workers involved. SST institutes work oversight commensurate with the hazards to ensure safe and compliant performance. All SST workers are empowered to stop work when they discover an unexpected condition, potential change in scope, component in wrong configuration, or identifies a new undefined or unexpected hazard. All SST workers are reminded and encouraged frequently about the importance of maintaining awareness of the work environment and their authority to exercise stop work without fear of reprisal.</p>	<p>SSI-ESH.0001, <i>Worker Safety and Health Plan</i> SST-ESH.0008, <i>Environmental Management System Manual</i> SSI-ESH.6001, <i>Waste Management Plan</i> SST Policy-0031, <i>Swift & Staley Team Environmental, Safety, and Health Policy</i> SST Procedure 03.01.02, <i>ES&H Subcontractor Oversight Program</i> SST Procedure 03.01.03, <i>Suspension of Work (Safety-Related)</i> SST Procedure 3.2.2, <i>Personal Protective Equipment</i> SST Procedure 03.02.03, <i>Hazard Assessments</i> SST Procedure 3.4.0, <i>General Industrial Hygiene Program</i> SST Procedure 06.01.01, <i>Paducah Work Control Process</i></p>
Principle 7: Operations Authorization	<p>SST clearly establishes the conditions and requirements to be satisfied prior to initiating and conducting work. SST utilizes a work control process to define the scope of work and depict the steps and safeguards necessary to complete tasks safely, with minimal generation of waste and without harm to the environment.</p>	<p>SST Procedure 03.02.03, <i>Hazard Assessments</i> SST Procedure 06.01.01, <i>Paducah Work Control Process</i></p>

<p align="center">Table 1. Integrated Safety Management System Description Guiding Principles Implementation Matrix (continued)</p>		
<p>Principle 8: Worker Involvement</p>	<p>SST encourages and expects its workers to participate in work planning, hazard identification, and development of adequate controls and safeguards. During the performance of work, SST management and workers integrate the safeguards established by the ISMS program to ensure safe performance. SST workers participate in pre- and post-job briefings, assessments, safety meetings, incident investigations, and procedure development.</p>	<p>SSI-ESH.0001, <i>Worker Safety and Health Plan</i> SST Policy SST-0031, <i>Swift & Staley Team Environmental, Safety, and Health Policy</i> SST Procedure 02.04.01, <i>Performance Documents</i> SST Procedure 03.01.02, <i>ES&H Subcontractor Oversight Program</i> SST Procedure 03.02.03, <i>Hazard Assessments</i> SST Procedure 03.02.05, <i>Accident/Incident Reporting</i> SST Procedure 05.02.01, <i>Integrated Oversight Program</i> SST Procedure 06.01.01, <i>Paducah Work Control Process</i> Monthly Safety Meetings SST CHA-005, <i>Safety Success Team Charter</i></p>

DEAR	U.S. Department of Energy Acquisition Regulation	ISMSD	Integrated Safety Management System Description
DOE	U.S. Department of Energy	PPE	personal protective equipment
ES&H	environment, safety, and health	SME	subject matter expert
ISMS	Integrated Safety Management System	SST	Swift & Staley Team

As illustrated in Figure 1, workers are involved in the SST ISMS process.

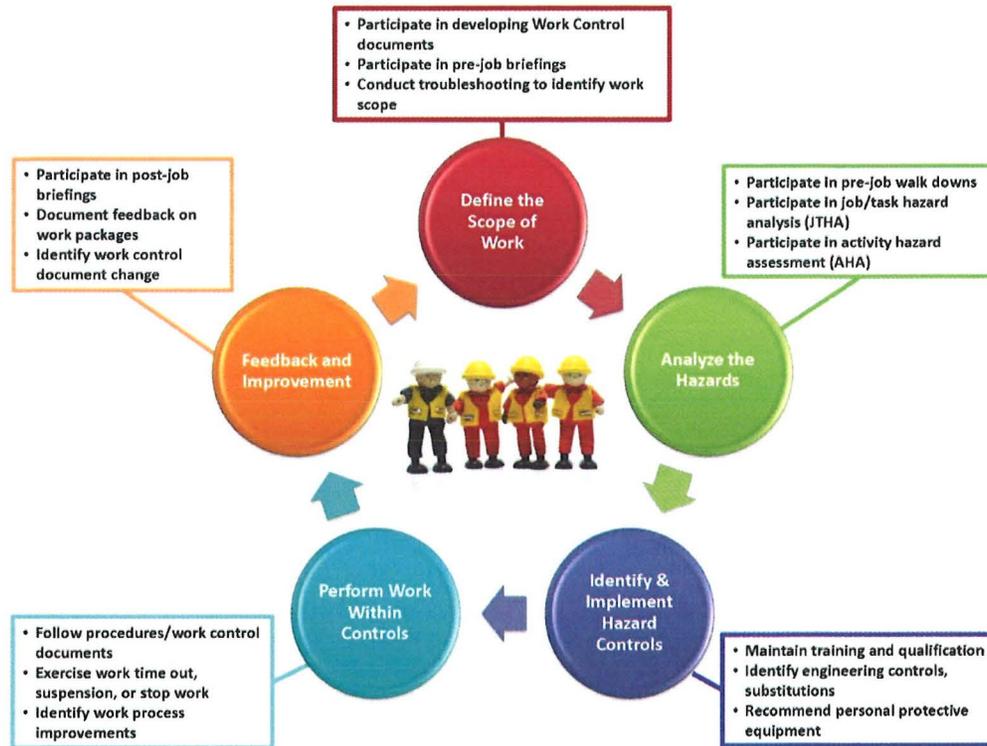


Figure 1. Worker Involvement

(c) **Functions:** The focus of the SST ISMS is to systematically integrate EMS; environment, safety, and health (ES&H); S&S and quality controls into management and work practices applicable to SST and SST subcontractors. SST implements the five safety management core functions. SST has established a WSHP (SSI.ESH-0001) that is compliant with 10 CFR 851, *Worker Safety and Health Program*. Table 2 depicts the ISMS Core Functions and describes SST’s method of implementation.

Table 2. Integrated Safety Management System Core Functions Implementation Matrix		
<p>Core Function 1: Define Scope of Work</p>	<p>SST translates the contract’s broad mission into specific tasks or work packages. The tasks/work are defined clearly and completely. SST applies a graded approach to work planning and implementation. A work level 1, 2, or 3 is assigned that drives the level of detail, rigor, hazard evaluation, and conduct of operation implementation needed to ensure safe and compliant conduct of work. The SST work expectations are set and steps required to perform the work are determined and clearly identified, along with proper sequencing and priority establishment. SST also identifies and allocates the necessary resources to perform the tasks in a safe and environmentally sound manner. Proper planning, scheduling, funding, worker briefings, resources and labor allocation, and worker input and participation are utilized during the work scope definition functions.</p>	<ul style="list-style-type: none"> • SST Procedure 02.04.01, <i>Performance Documents</i> • SST Procedure 06.01.01, <i>Paducah Work Control Process</i> • SST Procedure 08.03.03, <i>Definition & Organization of Work Scope</i> • SST Procedure 08.05.08, <i>Subcontracts</i>

Table 2. Integrated Safety Management System Core Functions Implementation Matrix (continued)		
Core Function 2: Analyze Hazards	<p>SST identifies and categorizes the work hazards and analyzes accident scenarios for hazardous work. SST conducts a variety of hazard analysis techniques to help identify, define, categorize, and mitigate hazards. BHAs are used to evaluate general site conditions and hazards associated with new work scope. SST’s primary tool is the AHA to accomplish and document hazard analyses. JTHAs are used as needed to identify and control hazards with specific work activities. Additionally, SST uses, as applicable, checklists, walkdowns, worker-input sessions, what-if discussions, SME evaluations, etc., for hazard analyses. SST maintains detailed AHAs for routine tasks and prepares JTHAs for nonroutine or complex tasks. SST also utilizes lessons learned, post-job feedback and relies heavily on worker experience and knowledge for identifying hazards for a task. The level of SST employee involvement in reviewing and applying the hazard analysis is commensurate with the complexity of the work and hazards encountered.</p>	<ul style="list-style-type: none"> • SST Procedure 03.02.03, <i>Hazard Assessments</i> • SST Procedure 03.01.04, <i>Instructions for Lockout Tagout</i> • SST Procedure 03.02.01, <i>Electrical Safety</i> • SST Procedure 03.02.06, <i>Welding Burning and Hot Work</i> • SST Procedure 03.02.09, <i>Fall Protection</i> • SST Procedure 03.02.10, <i>Hoisting and Rigging</i> • SST Procedure 03.02.12, <i>Confined Space</i> • SST Procedure 03.02.14, <i>Occupational Noise Exposure and Hearing Conservation Program</i> • SST Procedure 03.04.00, <i>General Industrial Hygiene Program</i> • SST Procedure 03.04.01, <i>Respiratory Protection Program</i> • SST Procedure 03.04.02, <i>Temperature Extremes</i> • SST Procedure 03.04.04, <i>Lead Protection Program</i> • SST Procedure 03.05.05, <i>Bloodborne Pathogens Program</i> • WI-QA-0001, <i>Operating Experience Program</i>

Table 2. Integrated Safety Management System Core Functions Implementation Matrix (continued)

<p>Core Function 3: Develop/Implement Controls</p>	<p>Before work is performed, appropriate controls are developed by SST and an applicable set of safety standards and requirements identified. These safety standards and requirements may be from an established list, or they may be a tailored set of requirements. SST develops hazard controls by identifying applicable standards and agreed-upon sets of requirements, identifying controls including pollution prevention, waste minimization, options to mitigate hazards, establishing boundaries for safe operation (establishing a safety envelope), and implementing and maintaining configuration controls. SST develops systematic controls at each management level, addressing all relevant functional areas or disciplines of concern (e.g., QA, S&S, engineering, industrial safety and health, radiological protection, environmental protection, chemical process safety, emergency preparedness, criticality safety, and maintenance). SST strives to develop and implement controls based upon a hierarchy of engineered controls, administrative controls, and then PPE.</p>	<ul style="list-style-type: none"> • SST Procedure 11.02.01 <i>Engineering</i> • SST Procedure 11.02.03 <i>Excavation Penetration Activities</i> • SST Procedure 03.02.03, <i>Hazard Assessments</i> • SST Procedure 03.01.04, <i>Instructions for Lockout Tagout</i> • SST Procedure 03.02.01, <i>Electrical Safety</i> • SST Procedure 03.02.06, <i>Welding Burning and Hot Work</i> • SST Procedure 03.02.09, <i>Fall Protection</i> • SST Procedure 03.02.10, <i>Hoisting and Rigging</i> • SST Procedure 03.02.12, <i>Confined Space</i> • SST Procedure 03.02.14, <i>Occupational Noise Exposure and Hearing Conservation Program</i> • SST Procedure 03.04.00, <i>General Industrial Hygiene Program</i> • SST Procedure 03.04.01, <i>Respiratory Protection Program</i> • SST Procedure 03.04.02, <i>Temperature Extremes</i> • SST Procedure 03.04.04, <i>Lead Protection Program</i> • SST Procedure 03.05.05, <i>Bloodborne Pathogens Program</i>
<p>Core Function 4: Perform Work</p>	<p>SST identifies and implements safety controls before starting work. Once work begins, it is performed in accordance with those safety controls, the work plan, and the procedures. The SST ISMS process confirms adequate preparation, including adequacy of controls, prior to authorizing work to begin. Work is controlled routinely by SST through a work control authorization process that documents the task, controls, standards, hazards, and protective measures as well as the worker requirements, resources, and schedule.</p>	<ul style="list-style-type: none"> • SST Procedure 02.04.04 <i>Standards of Conduct & Business Ethics</i> • SST Procedure 06.01.01 <i>Paducah Work Control Process</i> • SST Procedure 02.04.01 <i>Performance Documents</i> • SST Procedure 03.01.03 <i>Suspension of Work (Safety Related)</i> •

Table 2. Integrated Safety Management System Core Functions Implementation Matrix (continued)

<p>Core Function 4: Perform Work, continued</p>	<p>SST workers are required to follow the procedures and work requirements in the performance of tasks. Appropriate requirements and controls are established and implemented; for example, radiological controls, health and safety, environmental, waste, etc. The SST ISMS helps ensure that safety control measures that have been mutually agreed upon are integrated into work performance and that SST personnel are responsible and accountable for performance of work in accordance with the established controls. SST ISMS strives to ensure safe work performance and to prevent accidents, uncontrolled releases, or unacceptable exposures to hazardous materials. The controls establish safety as a prominent part of the plan for work. SST uses a system of written policies, manuals, procedures, work instructions, and work packages to ensure safety controls are integrated into work plans and at the work level. Individual work plans, operating procedures, and maintenance procedures are used to implement safety controls at the task level. SST utilizes hands-on training, safety-awareness training, and the identification of necessary engineering controls, PPE, pre-job briefings and walkdowns, which provide a good opportunity to ensure workers are aware of hazards and knowledgeable about the proper use of prescribed controls and worker input to help improve safe work.</p>	
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Table 2. Integrated Safety Management System Core Functions Implementation Matrix (continued)

<p>Core Function 5: Feedback/Improvement</p>	<p>SST utilizes feedback and improvement to identify and correct processes or deviations that lead to unsafe or undesired work outcomes; confirm that the desired work outcomes are obtained safely; and provide managers and workers with information to improve the quality and safety of subsequent similar work. SST utilizes a variety of mechanisms to implement feedback and improvement, including worker and management observations; pre- and post-work review meetings; quality and safety issue resolution processes; issue-tracking systems; performance indicators; lessons learned and operating experience reviews; internal and external assessments; and a variety of other activities. SST senior and first-line management are directly responsible for establishing and implementing feedback and improvement programs and processes to facilitate a culture that promotes ongoing examination and learning. SST utilizes the data collected from the feedback process to improve, correct, prevent, and share with others. This feedback and improvement process is utilized by SST to do the following:</p> <ul style="list-style-type: none"> • Enhance safety • Ensure successful task execution • Maintain and improve compliance with requirements • Be more cost effective • Reduce resource use and reduce waste generation <p>SST constantly is mindful of trends that can be remedied to further prevent repeat deficiencies or failures in implementation of a greater magnitude. SST cross-functional teams frequently are utilized to collect data, perform analyses, and identify improvements. SST also utilizes formal assessment programs, performance indicators, post-job briefings, event critiques, toolbox briefings, and lessons learned programs as improvement mechanisms</p>	<ul style="list-style-type: none"> • SST Procedure 03.01.02 <i>Subcontractor Oversight Program</i> • SST Procedure 05.02.01 <i>Integrated Oversight Program</i> • SST Procedure 05.02.03 <i>Surveillances</i> • SST Procedure 05.02.04 <i>Assessments</i> • SST Procedure 05.04.01 <i>Management Tracking System</i> • SST Procedure 05.04.02 <i>Corrective Action Program</i> • SST Procedure 07.01.05 <i>Employee Concerns</i>
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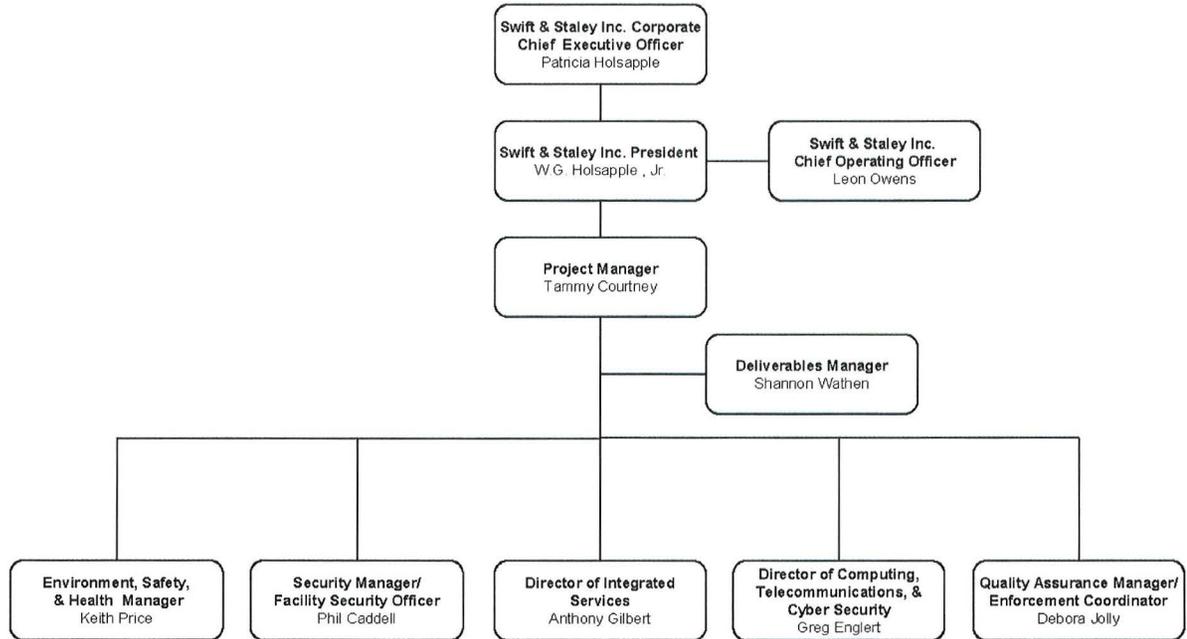
Table 2. Integrated Safety Management System Core Functions Implementation Matrix (continued)	
Core Function 5: Feedback/Improvement, continued	SST routinely documents and monitors work activities for effectiveness and value. Management By Walking Around has a senior manager in rotation to the field. Corrective actions or improvements are tracked by SST for completion through its Issues Tracking System.

AHA	Activity Hazard Assessment	QA	Quality Assurance
BHA	Baseline Hazard Assessment	S&S	Safeguards and Security
ISMS	Integrated Safety Management System	SME	Subject Matter Expert
JTHA	Job Task Hazard Analysis	SST	Swift & Staley Team
PPE	Personal Protective Equipment		

- (d) **Mechanisms:** Safety mechanisms define how the core safety management functions are performed and may vary from facility to facility, and from activity to activity, based on the hazards and the work being performed. SST is committed to perform work according to procedures. The SST plans and procedures define the primary mechanisms, tailored to the work/activity and hazards, for implementing the ISMS. Specific mechanisms to be used by SST to accomplish the ISMS Functions in accordance with the ISMS Guiding Principles are included in safety procedures and in the SST Work Control Program, including activity hazard assessments (AHAs), work instructions, and work package authorizations as defined in greater detail in this document.
- (e) **Responsibilities:** SST is organized to satisfy the first Guiding Principle that Line Management is responsible for safety. Unambiguous lines of responsibility within SST are established to effectively implement safety management. The second Guiding Principle, Clear Roles and Responsibilities, is established by the assignment, within procedures, of responsibilities and approval authorities for activities and also is strengthened by SST policies and plans. Roles and responsibilities are further defined by the assignment of subject matter experts (SME). SST satisfies the third Guiding Principle by staffing the organization with personnel having competence commensurate with their responsibilities. Reporting to the SST Project Manager are management personnel having appropriate Line Management authority for their areas of responsibility. Figure 2 depicts the organization arrangement of SST.



PADUCAH INFRASTRUCTURE SERVICES ORGANIZATION CHART



PADUCAH INFRASTRUCTURE SERVICES ORGANIZATION CHART

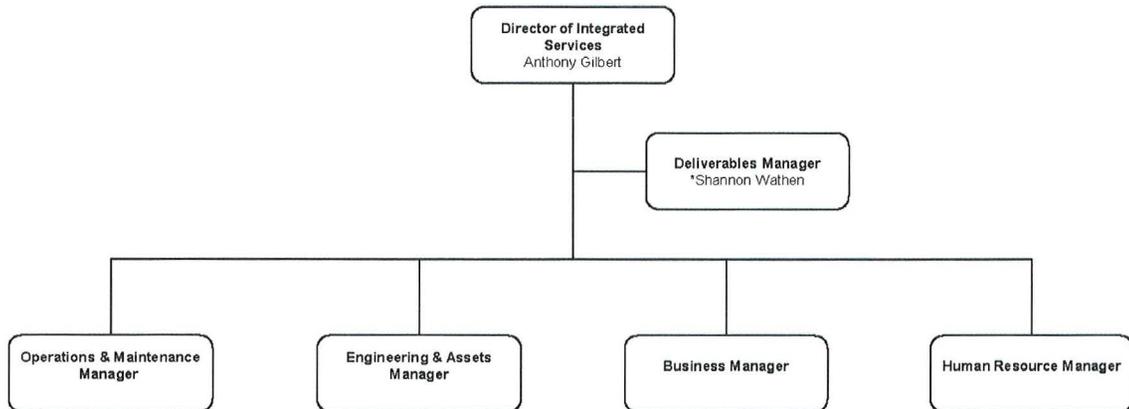


Figure 2. The Swift & Staley Team Functional Responsibilities and Organizational Chart

- (f) **Implementation:** Implementation involves specific instances of work definition and planning, hazards identifications and analysis, definition and implementation of hazard controls, performance of work, developing and implementing operating procedures, and monitoring and assessing performance for improvement. Accordingly, SST's strategy for implementing the ISMS uses other plans such as the *SST Worker Safety and Health Plan* (SSI.ESH-0001), *SST Radiation Protection Program* (SSI.ESH-3002), the *Environmental Management System Manual* (SSI.ESH-0008), and the *SST Quality Assurance and Quality Assurance Implementation Plan* (SSI.QA-0001), among others. Programs, such as the *SST Annual As Low As Reasonably Achievable (ALARA) Performance Goals* (Policy SST.POL-0010), and procedures implement an integrated approach.
- (g) **ISMS Program:** These documents, supplemented by policies, charters, and Memorandum of Understandings/Memorandum of Agreements, meet the objectives, commitments, principles, and functions for safe performance of work. A complete set of approved SST procedures is readily available to the SST workforce through the SST computer network. These procedures encompass multiple functional areas including:
- Emergency Preparedness
 - Environmental Protection
 - Fire Protection
 - Health and Safety
 - Operations and Maintenance
 - QA
 - Radiological Protection
 - Security
 - Business Management
 - Records Management
 - Information Technology

Copies of the procedures, plans, policies, etc., are not included in this document due to their likelihood of revision and improvement over time, but are available for review.

5. SAFETY MANAGEMENT SYSTEM INTEGRATION

A number of mechanisms are incorporated into the SST ISMS to promote integration and ensure information exchange in work planning, hazards analysis, and development of hazard controls. Committees, safety boards, and councils are chartered, when deemed appropriate, to promote worker involvement in the ISMS. An example is the Safety Success Team. This group of dedicated workers is integrating worker involvement in all facets of work. They are responsible for promoting Voluntary Protection Program (VPP) tenets in the workplace per SST Charter 5, *Safety Success Team Charter*.

Line Management is responsible for directing work and translating broad scope authorizations into work activities. They also set expectations, prioritize tasks, and identify preliminary hazards to determine resource allocation and priority assignment. When appropriate, SST management develops programs and plans that outline resources, priorities, and tasks balanced against risks. Workers perform work with confidence that their work is defined clearly enough to work safely. This is accomplished through meetings with supervisors, pre-job walkdowns, practical training, feedback, and pre-job briefings.

SST integrates the ISMS and EMS fully into a compatible, effective, and comprehensive program. In like manner, this ISMS/EMS fully supports, interacts with, and integrates the S&S program as applicable for comprehensive SST contract compliance. Additionally, SST's major functional areas of Radiological

Protection, Environmental Protection, Health and Safety, QA, Emergency Preparedness, and Work Hazard Analysis all have ISMS/EMS concepts, principles, and core function elements woven into them.

6. WORK CONTROL

SST work controls provide a process for determining work hazards to ensure safe performance of work and to prevent personnel accidents, injuries, exposures, and/or environmental mishaps through a formal system of planning, safeguards, and execution. These activities are implemented with the SST ISMS methodology. For planned work, tasks are reviewed to identify the hazards of specific work elements. Once identified, hazards are analyzed and categorized by type and severity as a basis for determining the standards applicable to the work. The hazards analyses are the foundation for identifying standards, requirements, and engineered controls needed to prevent/mitigate identified hazards. This foundation is a crucial element of the standards selection aspect of the *SST Work Smart Standards* (WSS) (SST.ESH-0003), in that, applicability of requirements is tailored to the work scope and the hazard.

Line Management is responsible for the hazard analyses, change management of safety documentation, and assuring that the operation is within the safety envelope parameters set forth in the respective safety basis (SB).

The work control process (SST Procedure 06.01.01, *Paducah Work Control Process*) addresses the need and mechanisms for identifying hazards to workers, the public, and the environment. At the activity/task level, common industrial hazards to the worker are analyzed more specifically by an AHA conducted according to a documented hazard review process (SST Procedure 03.02.03, *Hazard Assessments*). An essential element of worker safety is participation of the workers in the identification of hazards. SST ensures that the concepts of the ISMS programs are integrated fully in the work control process.

The safety oversight function is performed primarily by a safety-trained professional that is dedicated to SST or subcontractor work activities. Occasionally, there is a need for additional safety oversight than can be provided by the safety trained professionals. SST Policy 005, *Swift & Staley Team Oversight Personnel* defines the level of safety training required to assign safety oversight of low risk and low complexity work.

7. PROTECTION OF THE WORKERS, THE PUBLIC, AND THE ENVIRONMENT

SST work activities at PGDP are conducted in a manner that protects workers, the public, and the environment. This is established primarily by the contract requirements and further implemented by SST WSS, plans, procedures, and program documents. This section details how the SST ISMS mechanisms are focused specifically to protect the workers, the public, and the environment.

7.1 PROTECTION OF THE WORKERS

SST WSS and worker-safety-related programs help ensure safety is integrated into all aspects of work planning and execution through ISMS. SST utilizes the work planning process to augment and implement ISMS at the task/activity level. Work planning has been integrated into the SST ISMS to heighten the importance of worker involvement with the end objective of reducing injuries by focusing on planning

and prevention. The work planning process has the following five key elements that are aligned closely with and support the ISMS Functions and Guiding Principles:

1. Line Management Ownership
2. Worker Involvement
3. Graded Approach
4. Organizationally Diverse Teams
5. Organized Communication

Table 3 illustrates the relationship among the elements of work planning and ISMSD/EMS Functions and Principles, and it identifies some of the SST mechanisms that implement those elements.

Table 3. Integrated Worker Protection Program Elements

Work Planning Element	ISMS Function, Principle, or Guidance	SST Mechanism
Line Management Ownership	Line Management Responsibility for Safety (Principle #1)	SST Plans, Procedures, and Policies SST Work Control
Worker Involvement	Analyze Hazards (Function #2) Develop/Implement Controls (Function #3) Competence per Responsibilities (Principle #3)	SST Work Control and Hazard Review Procedures SSI.ESH.0001, <i>Worker Safety and Health Plan</i> Radiological Protection Plan QA Plan SST Training Position Assignment Forms Conduct of Operations
Graded Approach	Tailored Hazard Control (Principle #6) (Tailoring Guide)	SST Work Control Program, SSI.ESH.0001, <i>Worker Safety and Health Plan</i> Safety Procedures
Organizationally Diverse Teams	“The key elements of enhanced work planning are ... organizationally diverse teams, and organized, institutional communication.” (DOE G 450.4-1)	SST Work Control Procedures and Work Scope Review Teams SST Safety Professionals Safety Success Team ES&H Safety-Trained Employees Project Teams
Organized Communication	Feedback/Improvement (Function #5)	SST Work Control Program Plan-of-the-Day Meetings Weekly Staff Meetings Monthly Safety Meetings Work Planning Meetings

DOE
ES&H
G

U.S. Department of Energy
Environmental, Safety, & Health
Guide

ISMS
QA
SST

Integrated Safety Management System
Quality Assurance
Swift & Staley Team

Work planning is established as an important aspect to ISMS for addressing worker safety issues and to establish environmentally sound approaches. The major influence work planning has for improving ISMS is by the increased use of teams early in the work planning process that benefit from the participation and input of the appropriate ES&H advisory personnel, other SMEs, and the workers that ultimately perform the planned activities.

Occasionally SST work crews are assigned tasks away from the DOE-Paducah Site boundary, (i.e., the West Kentucky Wildlife Management Area) immediately surrounding the Site. Communications to and from the workers at the remote locations must be maintained. To accomplish this, each work crew is assigned at least one operable 2-way radio. One-way emergency communications are also ensured by the plant's public announcement system and the public notification system (sirens) at the plant boundaries. Safety is enhanced by having at least two workers assigned to remote locations.

7.2 PROTECTION OF THE PUBLIC

Through the use of WSS (SST.ESH-0003) and AHAs, SST has identified work-related hazards within the infrastructure services work scope and identified appropriate controls to mitigate or prevent those hazards from affecting the public. *SST Site Emergency Plan* (SSI.EM-0001) implements the emergency management aspects of Fire Protection, Radiological Protection, Environmental Management and Security Programs, among others, as well as providing the required coordination with off-site emergency planning and response authorities during emergency situations. SST's first and preferred approach to protecting the public is to prevent exposure, prevent releases/spills, and protect the environment. SST has, and will, maintain personnel trained and ready to respond to unforeseen mishaps. SST maintains capability to respond to the Site's Emergency Operations Center and Joint Public Information Center to support emergency response actions associated with SST and other site contractor activities.

7.3 PROTECTION OF THE ENVIRONMENT

The WSHP (SSI.ESH-0001) and the EMS Manual (SST.ESH-0008) contain the mechanisms for maintaining SST facilities and activities in compliance with applicable Federal, State, DOE, and local environmental requirements, and contains the SST programs for Pollution Prevention and Waste Minimization. SST workers are trained and frequently reinforced on the concept of configuration and task or work environment change control. If unexpected circumstances or changes in the work environment are encountered, each SST employee is responsible for stopping the job to more fully evaluate the changes, to identify and mitigate the hazards as a team effort, and then to proceed with the task. The SST work control procedure emphasizes this process. SST performs work in compliance with the requirements, endeavors to prevent any releases, and minimizes waste during conduct of its activities.

8. TAILORING

In accordance with the DEAR environment, safety, and health clause [48 *CFR* 970.5223-1(b)(6)], and DOE G 450.4-1C, *Integrated Safety Management System Guide*, tailored engineering and administrative controls are adopted and/or developed and implemented to prevent and mitigate associated work activity hazards. Work activities under this contract range in complexity and hazard potential from project activities such as infrastructure construction to medium-hazard operations such as grounds maintenance (mowing, weed trimming, and brush removal) to much simpler tasks, such as replacement of light bulbs and janitorial services. In this context, tailoring is used by SST to develop safety controls fitted to the hazards associated with the work activities.

Through tailoring, safety management processes are applied selectively to planned work activities to meet applicable, enforceable requirements while adequately protecting the worker's health and safety and the environment. SST also periodically evaluates the effectiveness of the work management systems to continuously improve performance to allow flexibility in planning, analysis, and work preparation. As a result, the SST ISMS ensures high-quality work and compliance with predetermined performance expectations, while continuously ensuring that work is conducted in an environmentally sound, safe, and healthy way.

9. PATH FORWARD

Using guidance provided in DOE G 450.4-1C, *Integrated Safety Management System Guide*, SST continues to make the necessary adjustments to existing procedures, plans, programs, and manuals to develop a fully integrated ISMS. The following subsections depict a few of the ISMS ongoing activities planned for the life cycle of the contract.

9.1 GENERAL MANAGEMENT

- Review the ISMSD and EMS annually and update as needed.
- Develop Safety Performance Objectives, Measures, and Commitments; track and report status quarterly and update annually.
- Evaluate feedback data to determine effectiveness of safety management programs and/or overall ISMS implementation and integration and issue annual evaluation report.
- Plan and integrate ISMS improvements.
- Review and evaluate ISMS-related trends.
- Review and revise procedures to identify, analyze, and mitigate hazards, and provide guidance on implementing safe work practices.

9.2 ENVIRONMENT, SAFETY, AND HEALTH

- Implement the requirements of 10 *CFR* 851, *Worker Safety and Health Program Rule* and 10 *CFR* 835, *Occupational Radiation Protection*.
- Provide mentoring and oversight of subcontractors relative to ES&H and ISMS performance expectations.
- Provide oversight of ES&H programs and activities for subcontracted and self-performed work.
- Provide technical support and professional services to Line Managers in hazard identification and analysis process.
- Manage identification of ES&H standards and requirements for each scope of work in accordance with applicable laws, permits, authorizations, and WSS.
- Administer subcontracts and provide oversight of subcontract requirements with regard to general safety, 10 *CFR* 851, *Worker Safety and Health Program* and ISMS.

9.3 GENERAL STATEMENT OF WORK ELEMENTS AND FUNCTIONS

- Manage all work planning and execution with the SST ISMS incorporated.
- Clearly define scopes of work.
- In coordination with ES&H, ensure proper identification and analysis of hazards and definition of mitigation measures.
- Implement work using the identified sound work practices within specified controls and authorized limits.
- Ensure that personnel are qualified and trained commensurate with their responsibilities.
- Perform self-assessments to monitor ISMS performance within the respective program functions.

9.4 SUBCONTRACTS

- Prepare subcontract-specific ES&H flow-downs to define controls for subcontractor work activities.
- Ensure work control processes and procedures are incorporated into subcontract activities, as appropriate.
- Ensure the provisions of 10 *CFR* 851, *Worker Safety and Health Program* are understood and implemented.
- Provide oversight of the work control process for self-performed and subcontractor work activities.

9.5 SAFETY PERFORMANCE/QUALITY ASSURANCE

- Implement the requirements of 10 *CFR* 830, Subpart A, *Quality Assurance Requirements*.
- Implement the requirements of 10 *CFR* 830, Subpart B, *Facility Safety*.
- Implement the requirements of 10 *CFR* 835, *Occupational Radiation Protection*.
- Review and update the QAP annually.
- Manage the implementation of the feedback and continuous improvement processes (i.e., independent assessment, lessons learned, issues management, corrective action, readiness review, and occurrence-reporting programs).
- Implement a sound and graded application of QA requirements to SST programs and tasks.
- Establish and maintain ES&H worker-qualification criteria.
- Ensure all personnel are qualified and trained commensurate with their job responsibilities.

10. REFERENCES

10 *CFR* 830, Subpart A, *Quality Assurance Requirements*

10 *CFR* 830, Subpart B, *Facility Safety*

10 *CFR* 835, *Occupational Radiation Protection*

10 *CFR* 851, *Worker Safety and Health Program Rule*

DEAR clauses promulgated in 48 *CFR* 970.5223-1, 48 *CFR* 970.5204-2, and 48 *CFR* 970.1100-1

Defense Nuclear Facilities Safety Board Recommendation 95-2, *Safety Management*

DOE G 450.4-1C, *Integrated Safety Management System Guide*

DOE O 414.1D, *Quality Assurance*

DOE O 450.2, *Integrated Safety Management*

DOE P 450.4A, *Safety Management System Policy*

SST.CHA-005, *Safety Success Team Charter*

SSI.ESH-0001, *Worker Safety and Health Plan*

SSI.ESH-0003, *Work Smart Standards*

SST.ESH-0008, *Environmental Management System Manual*

SSI.ESH-3002, *Radiation Protection Plan*

SST Policy 0005, *Swift & Staley Team Oversight Personnel*

SSI.QA-0001, *Quality Assurance and Quality Assurance Implementation Plan*

Policy SST-0010, *Annual ALARA Performance Goals*

SST Procedure 03.02.03, *Hazard Assessments*

SST Procedure 06.01.01, *Paducah Work Control Process*

NOTE: Other SST Procedures are referenced in Tables 1 and 2.