



**ALL-HAZARD SURVEY FOR INFRASTRUCTURE  
FACILITIES/ACTIVITIES**

Approved by: *Tammy Courtney* Date: 10/30/19  
Tammy Courtney  
Project Manager

Effective Date: \_\_\_\_\_

## TABLE OF CONTENTS

LIST OF FIGURES.....	4
LIST OF TABLES.....	4
REVISION SUMMARY.....	5
ACRONYM LIST .....	7
1.0 INTRODUCTION.....	8
1.1 PURPOSE.....	8
1.2 ALL HAZARD SURVEY PROCESS.....	8
2.0 SCOPE.....	9
2.1 SITE DESCRIPTION.....	9
2.2 C-102-T02 OFFICE TRAILER.....	10
2.3 C-102-T03 OFFICE TRAILER.....	10
2.4 C-103 DOE OFFICE FACILITY AND ANNEX.....	10
2.5 C-104 ACCESS CONTROL FACILITY .....	11
2.6 C-720-M COMPUTER MAINTENANCE/INFORMATION TECHNOLOGY STORAGE TRAILERS .....	11
2.7 C-725 JANITORIAL STORAGE FACILITY.....	11
2.8 C-732 ROCK SALT STORAGE FACILITY .....	11
2.9 C-743-T14 OFFICE TRAILER.....	11
2.10 C-750 GARAGE .....	11
2.11 C-752-B FUEL DISPENSING STATION .....	12
2.12 C-752-B-T01 FUEL STATION FACILITY .....	12
2.13 C-754 EQUIPMENT STORAGE FACILITY .....	12
2.14 C-755-A MAINTENANCE FACILITY .....	12
2.15 C-755-A1 BRINING FACILITY .....	13
2.16 C-755-B CHANGE HOUSE.....	13
2.17 C-755-C CARPENTER FACILITY.....	13
2.18 C-755-D STORAGE FACILITY .....	13
2.19 C-755-J SEALAND STORAGE CONTAINERS.....	13
2.20 C-755-K SEALAND STORAGE CONTAINER.....	13
2.21 C-755-L SEALAND STORAGE CONTAINER.....	14
2.22 C-755-M STORAGE SHED .....	14
2.23 C-755-M1 STORAGE SHED.....	14
2.24 C-755-M2 STORAGE SHED.....	14
2.25 C-755-M3 STORAGE SHED.....	14
2.26 C-755-M4 STORAGE SHED.....	14
2.27 C-755-Q SEALAND STORAGE CONTAINER .....	14
2.28 C-755-S SEALAND STORAGE CONTAINER.....	15
2.29 C-755-T STORAGE STRUCTURE .....	15
2.30 C-755-T05 OFFICE TRAILER.....	15

2.31	C-755-T08B CHANGE HOUSE.....	15
2.32	C-755-T13 SEALAND STORAGE CONTAINER.....	15
2.33	C-755-T14 SEALAND STORAGE CONTAINER.....	15
2.34	C-755-T17A CHANGE HOUSE.....	16
2.35	C-755-T18 OFFICE TRAILER.....	16
2.36	C-755-T19 OFFICE TRAILER.....	16
2.37	C-755-T20 OFFICE TRAILER.....	16
2.38	C-755-T21 OFFICE TRAILER.....	16
2.39	C-755-T22A OFFICE TRAILER.....	16
2.40	C-755-T23 OFFICE TRAILER.....	17
2.41	C-755-T26 OFFICE TRAILER.....	17
2.42	C-755-T27 OFFICE TRAILER.....	17
2.43	C-755-T28 OFFICE TRAILER.....	17
2.44	C-755-U STORAGE STRUCTURE.....	17
2.45	C-755-V STORAGE STRUCTURE.....	17
2.46	C-755-X STORAGE TRAILER.....	18
2.47	C-755-Y SEALAND STORAGE CONTAINER.....	18
2.48	C-755-Z STORAGE TRAILER.....	18
2.49	C-802 METEOROLOGICAL TOWER.....	18
2.50	C-802-A COMMUNICATION EQUIPMENT FACILITY.....	18
2.51	C-802-B ELECTRICAL EQUIPMENT FACILITY.....	18
2.52	UNDERGROUND STORM SHELTERS.....	18
2.53	PARKING LOTS.....	19
2.54	GENERAL AREAS.....	19
3.0	ALL HAZARDS SURVEY DATA COLLECTION METHODOLOGY.....	21
3.1	IDENTIFY AND DESCRIBE THE FACILITY.....	21
3.2	HAZARDOUS MATERIALS SCREENING.....	21
3.2.1	RADIOACTIVE HAZARDOUS MATERIALS.....	21
3.2.1.1.1	LICENSE-EXEMPT COMMERCIAL PRODUCTS.....	22
3.2.1.2	RADIOACTIVE MATERIAL SCREENING RESULTS.....	23
3.2.2	TOXICITY-BASED HAZARDOUS MATERIALS.....	24
3.3	IDENTIFY GENERIC TYPES OF EMERGENCY EVENTS AND CONDITIONS.....	26
3.4	QUALITATIVELY DESCRIBE POTENTIAL IMPACTS.....	26
3.5	IDENTIFY APPLICABLE REQUIREMENTS.....	27
3.6	HAZARDS SUMMARY.....	27
4.0	BASE PROGRAM REQUIREMENTS.....	39
4.1	EMERGENCY RESPONSE ORGANIZATION.....	39
4.2	OFF-SITE RESPONSE INTERFACES.....	39
4.3	EMERGENCY CATEGORIZATION.....	40
4.4	COMMUNICATIONS.....	40
4.4.1	INITIAL NOTIFICATION OF EMERGENCY RESPONSE ORGANIZATION.....	40

4.4.2	WARNING AND EMERGENCY INSTRUCTIONS TO ON-SITE WORKERS AND TO THE PUBLIC .....	40
4.4.3	OPERATIONAL COMMUNICATIONS BETWEEN COMMAND CENTERS AND FIELD RESPONSE ELEMENTS .....	40
4.4.4	EMERGENCY PUBLIC INFORMATION .....	40
4.5	PROTECTIVE ACTIONS .....	41
4.6	MEDICAL SUPPORT .....	41
4.7	EMERGENCY PUBLIC INFORMATION .....	41
4.8	EMERGENCY FACILITIES AND EQUIPMENT .....	42
4.9	PROGRAM ADMINISTRATION .....	42
4.10	TRAINING .....	43
4.11	DRILLS AND EXERCISES .....	44
5.0	HAZARD SURVEY RESULTS .....	44
6.0	REFERENCES .....	46

## LIST OF FIGURES

<b>Figure 1.</b>	<b>Location of the Paducah Site .....</b>	<b>10</b>
<b>Figure 2.</b>	<b>Radioactive Hazardous Material Screening Process .....</b>	<b>22</b>
<b>Figure 3.</b>	<b>Chemical Hazardous Material Screening Process .....</b>	<b>25</b>

## LIST OF TABLES

Table 1.	List of Underground Storm Shelters .....	19
Table 2.	List of Parking Lots .....	19
Table 3.	List of General Areas .....	20
Table 4.	Hazards Survey Summary for Swift & Staley Team Facilities .....	28
Table 5.	Codes Used in Table 4 .....	37
Table 6.	Hazardous Chemical Survey Summary .....	45

## REVISION SUMMARY

Rev. No.	Description of Change	Pages	Date
0	Initial Release-Infrastructure Support Services Contract DE-EM0003733 deliverable.	All	12/1/15
1	<p>Updated as referenced below:</p> <ul style="list-style-type: none"> <li>• Updated to reflect Infrastructure Services Contract DE-EM0003733.</li> <li>• Updated listing of Swift and Staley Team (SST) facilities found on Facilities Information Management System (FIMS) database.</li> <li>• The following facilities/assets have been added; C-720-M, C-725, C-752-B-T01, C-755-D, C-755-M4, C-755-T05, C-755-W, C-755-Z, C-802, C-802-B, C-103-PL, C-730-C, C-730-D, C-755-N, C-RR, C-RR-T, and C-AREA.</li> <li>• The following facilities have been removed; C-100, C-101, C-212-U, C-229, C-615-H4, C-743-T11, C-743-T13, C-755-T08, and C-801.</li> <li>• Removed maps showing facility locations, included this information in facility descriptions.</li> <li>• Remove redundant listing of screening criteria found throughout initial revision, listed that information in Section 3.</li> <li>• Revised and shortened facility descriptions and screening results found in Section 6.</li> </ul> <p>From the issuance of Rev. 0, there has been no appreciable change in the materials used by SST in the performance of Infrastructure Support Services Contract DE-EM0003733. As a result of this, and consistent with past surveys, analysis via Emergency Planning Hazards Assessment (EPA) is not required. No changes to the mechanism used to perform hazard survey were made in this revision.</p>	All	10/30/16
2	<p>Updated as referenced below:</p> <ul style="list-style-type: none"> <li>• Updated listing of SST facilities found on FIMS database.</li> <li>• The following facilities have been added; C-732, C-755-B, C-755-C, C-755-T08B, C-755-T13, C-755-T14.</li> <li>• Added text describing new screening criteria found in DOE Order 151.1D.</li> <li>• Removed tables containing screening results, added new Table 6 summarizing results.</li> </ul>	All	12/11/17

	<ul style="list-style-type: none"> <li>Added wording to Section 1.0 describing SST participation in Site Emergency Management Program.</li> </ul> <p>From the issuance of Rev. 2, there has been no appreciable change in the materials used by SST in the performance of Infrastructure Support Services Contract DE-EM0003733. As a result of this, and consistent with past surveys, analysis via EPHA is not required. The mechanism for performing the all-hazard survey was modified with the implementation of DOE Order 151.1D, Comprehensive Emergency Management System.</p>		
<p><b>3</b></p>	<p>Formatted into new template, previous no. SSI.EM-0005.</p> <p>Updated as referenced below:</p> <ul style="list-style-type: none"> <li>Updated listing of SST facilities found on FIMS database.</li> <li>The following facilities have been added; C-102-T02, C-102-T03, C-755-T23.</li> </ul> <p>There have been no appreciable changes in the materials used by SST in the performance of Infrastructure Support Services Contract DE-EM0003733. As a result of this, and consistent with past surveys, analysis via EPHA is not required.</p>	<p>All</p>	<p>09/18/18</p>
<p><b>4</b></p>	<p>Updated as referenced below:</p> <ul style="list-style-type: none"> <li>Updated listing of ISSC facilities found on FIMS database.</li> <li>The following facilities have been added: C-104, C-754, C-755-L, C-755-S, C-755-T21, C-755-X.</li> <li>The following facility has been removed: C-755-W.</li> <li>Replaced all references to SST with Infrastructure Support Service Contractor (ISSC).</li> <li>Updated references to gasoline types E10 and E85.</li> <li>Improved descriptions of ISSC responsibilities found in section 4.9.</li> <li>Updated emergency conditions and potential impacts found in Table 4.</li> </ul> <p>There have been no appreciable changes in the materials used by SST in the performance of Infrastructure Support Services Contract DE-EM0003733. As a result of this, and consistent with past surveys, analysis via EPHA is not required.</p>	<p>All</p>	<p>10/30/19</p>

## ACRONYM LIST

AHS	All Hazards Survey
ANSI	American National Standards Institute
CHM	Chemical Hazardous Material
CFR	Code of Federal Regulations
D&R	Deactivation and Remediation
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
E10	90% Gasoline–10% Ethanol Blend
E85	85% Ethanol-15% Gasoline Blend
EM	Emergency Management
EMCP	Emergency Management Core Program
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EP	Emergency Plan
EPHA	Emergency Planning Hazards Assessment
ERO	Emergency Response Organization
FIMS	Facilities Information Management System
G	Guide
GHS	Global Harmonization System
ISSC	Infrastructure Support Service Contractor
JIC	Joint Information Center
LA	Limited Area
O	Order
OE	Operational Emergency
PA	Public Address
PGDP	Paducah Gaseous Diffusion Plant
PSS	Plant Shift Superintendent
SST	Swift & Staley Team
THIRA	Threat Hazard Identification and Risk Assessment

## 1.0 INTRODUCTION

### 1.1 Purpose

This report documents the All Hazards Survey (AHS) for facilities managed by the Infrastructure Support Service Contractor (ISSC) at the Paducah Gaseous Diffusion Plant (PGDP) in Paducah, Kentucky. U.S. Department of Energy (DOE) Order (O) 151.1D, *Comprehensive Emergency Management System* (DOE 2016) requires implementation of a site/facility emergency management (EM) program at a level commensurate with the hazards present. The first step in development of an EM program is accomplished by preparation of an AHS.

The AHS, which is based on a qualitative examination of the features and characteristics of the facility, identifies the generic types of emergency events and conditions (including natural phenomena such as earthquakes and tornadoes, wildland fires, and other serious events involving or affecting health and safety, the environment, and safeguards and security at the facility) and the potential impacts of such emergencies. The AHS also identifies key components of the Emergency Management Core Program (EMCP) that provide a foundation of basic EM requirements and an integrated framework for response to serious emergency events or conditions.

For facilities involved in producing, processing, handling, storing, or transporting hazardous materials that have the potential to pose a serious threat to workers, the public, or the environment, the AHS provides a hazardous materials screening process for determining whether further analysis of the hazardous materials in an Emergency Planning Hazards Assessment (EPHA) is required. There are no materials used in the performance of the Infrastructure Support Service Contract that require an EPHA.

The ISSC participates in the Paducah Site EM Program as described in section C.2.2.6, *Emergency Management*, of the Paducah Infrastructure Support Service Contract DE-EM0003733. The EM program is administered by the Paducah Deactivation and Remediation (D&R) Contractor. The ISSC provides input to the D&R Contractor Site Emergency Plan, Continuity of Operations Plan, and Emergency Readiness Assurance Plan. The D&R Contractor is contracted by DOE to perform a Site Threat Hazard Identification and Risk Assessment (THIRA). Input to the THIRA process will be provided to the D&R Contractor as requested. The ISSC provides the results of their AHS to the D&R Contractor to review for potential negative impact to the EM program.

### 1.2 All Hazard Survey Process

The AHS process involves the review of facility programs already in place to meet federal, state, and local requirements related to worker health and safety, environmental protection, and hazardous materials reporting. It is used to identify the conditions to be addressed by the comprehensive EM program. The AHS and its periodic updates should, at a minimum, serve as an internal quality assurance check for compliance with those regulations. The ISSC incorporates the AHS process into its program of internal oversight and compliance monitoring for hazardous materials, environmental protection, and worker safety regulations.

The steps in the AHS process are as follows:

- Identify and briefly describe each facility.
- Identify the generic types of emergency conditions that apply to each facility.
- Qualitatively describe the potential health, safety, environmental, or national security impacts of the applicable emergencies.
- Identify and document the applicable EMCP planning and preparedness requirements that apply to each type of hazard.
- Indicate the need for further analyses of hazardous materials in a facility-specific quantitative EPHA, based on the results of the hazardous material screening process described in following sections of this plan.

If the AHS qualitative assessment identifies hazardous materials present at the facility that cannot be excluded using applicable screening criteria, then an EPHA is required. The EPHA is a more detailed and quantitative analysis that identifies the severity and potential impacts of postulated emergency events.

## **2.0 SCOPE**

The scope of this AHS is limited to the facilities, associated support areas, and equipment managed by the ISSC, as described in the Facilities Information Management System (FIMS) database. FIMS is DOE's corporate database for real property, as required by DOE O 430.1C, *Real Property Asset Management*. The system provides DOE with an accurate inventory and management tool that assists with planning and management of real property assets. A brief description of each ISSC facility, including square footage and past and current operations in these facilities is provided in the following sections.

### **2.1 Site Description**

The Paducah Site is located in Western Kentucky, within McCracken County, 3.5 miles south of the Ohio River, 20 miles east-northeast of the confluence of the Ohio and Mississippi Rivers, and west of the Tennessee and Cumberland Rivers. The Missouri state boundary is 20 miles to the west of the site, the Illinois state border is 4 miles to the north, and the Tennessee state boundary is 40 miles to the south. Downtown Paducah, Kentucky, is located 12 miles southeast of the Paducah Site.

DOE holds 3,556 acres of land in McCracken County, Kentucky. Within the Paducah Site main security fence (limited area [LA]), there are approximately 615 acres. Most of the facilities necessary for operation of the Paducah Site are contained within LA. The water treatment plant and some lagoons, landfills, and various smaller facilities are located outside the security fence, but within the DOE-controlled reservation. Additionally, DOE has acquired several easements, totaling 133 acres, which are associated with the operation of the Paducah Site. These easements include such aspects as railroad and water line rights-of-way. Figure 1 shows the location of the Paducah Site, including DOE property, the DOE Reservation boundary, local cities and communities, roads, railroads, airports, and bodies of water.

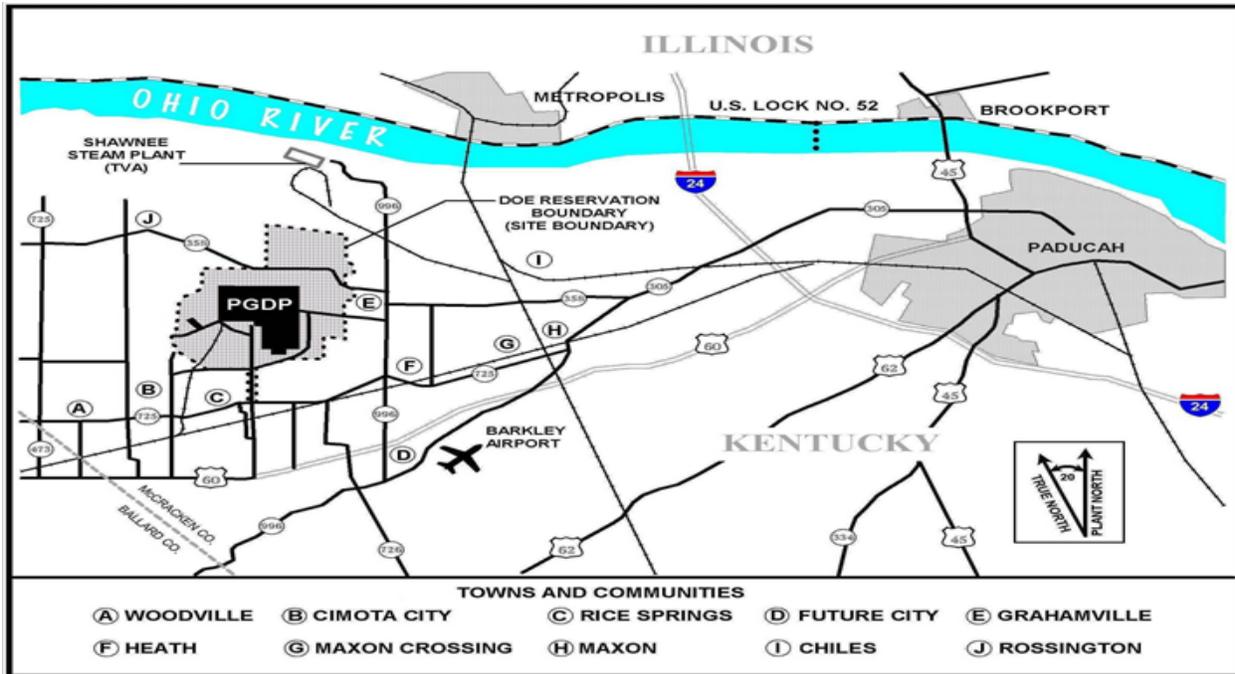


Figure 1. Location of the Paducah Site

## 2.2 C-102-T02 Office Trailer

C-102-T02 is a 1,800 square feet (ft<sup>2</sup>) single-story office trailer containing restrooms, a training/meeting room, and office space. The trailer is equipped with electrical service and supplied water. The facility does not contain hazardous materials. C-102-T02 is centrally located on the plant site (outside the LA).

## 2.3 C-102-T03 Office Trailer

C-102-T03 is a 1,800 ft<sup>2</sup> single-story office trailer containing restrooms, a training/meeting room, and office space. The trailer is equipped with electrical service and supplied water. The facility does not contain hazardous materials. C-102-T03 is centrally located on the plant site (outside the LA).

## 2.4 C-103 DOE Office Facility and Annex

C-103 is a 10,699 ft<sup>2</sup> single-story office building containing a break room, conference and training rooms, restrooms, a server room, and office space required for personnel involved in DOE oversight of PGDP activities. The facility structure does not contain hazardous materials other than general cleaning supplies and office products, such as toner cartridges for copiers and printers. A propane-fueled grill is located at the covered shelter north of the C-103 structure. One propane tank is present, which is required to be at least ten feet (ft.) from the C-103 structure and cannot be stored within the C-103 building. A gasoline-powered golf cart also is located under the covered shelter near the grill. The fuel capacity of the golf cart is approximately 5.8 gallons (gal) of gasoline. The golf cart is located approximately 15 ft. from the C-103 structure, which is further from

the building than personal vehicles located in the parking lot in front of the building. C-103 is located outside of the LA fence, south of Post 15 and west of Hobbs Road.

## **2.5 C-104 Access Control Facility**

C-104 is a 2,912 ft<sup>2</sup> single-story office building containing a waiting area, break room, conference room, restrooms, and office space required for personnel involved in badging and area access control functions. Only general cleaning supplies and office products, such as toner cartridges for copier machines, are present. No hazardous materials are present inside the facility. A 1,000 gal propane tank located approximately 50 ft. east of the facility supplies fuel for an emergency backup generator. C-104 is located outside the LA, approximately 1 mile south of the plant on Hobbs Road.

## **2.6 C-720-M Computer Maintenance/Information Technology Storage Trailers**

Each C-720-M pre-fabricated trailer (C-720-M-T01 and C-720-M-T02) has a total working area of 160 ft<sup>2</sup>. The trailers are used for storage of electronic components, new and used light bulbs and lead acid batteries. The trailers are centrally located within the LA. The trailers are not equipped with electrical service or supplied water. There are no other hazardous materials in storage.

## **2.7 C-725 Janitorial Storage Facility**

C-725 is a 410 ft<sup>2</sup> single-story building located inside the LA fence on the west end of the plant. It is used to store janitorial cleaning supplies, herbicides, and road repair products, as well as numerous signs, brooms, small equipment, and parts. No other hazardous material is present. The facility is equipped with electrical service and supplied water.

## **2.8 C-732 Rock Salt Storage Facility**

C-732 is a 1,680 ft<sup>2</sup> single-story facility located inside the LA fence on the west end of the plant. The space is used for storage of rock salt for winterization activities. The area is not equipped with utilities.

## **2.9 C-743-T14 Office Trailer**

C-743-T14 is a 1,600 ft<sup>2</sup> single-story office trailer containing restrooms, a training/meeting room, and office space. The trailer is equipped with electrical service and supplied water. The facility does not contain hazardous materials. C-743-T14 is located inside the LA on the west end of the plant.

## **2.10 C-750 Garage**

C-750 is an 11,866 ft<sup>2</sup> single-story structure consisting of an open shop area for general maintenance activities on support equipment such as lawn mowers, vehicles, and

tractors. The facility is controlled as a Radiological Material Area for fixed contamination. The facility contains two flammable materials cabinets for miscellaneous lubricants and maintenance products. The facility also contains new vehicle batteries, tires, engine coolant, hydraulic lift systems, a mobile gas tank, as well as new and used engine oil, hydraulic fluids, and antifreeze. The facility contains restrooms, a shower, office space, and a break room/kitchen area and is equipped with electrical service and supplied water. Adjacent to the C-750 facility are five 160 ft<sup>2</sup> Sealand storage containers used to store extra parts and equipment. It is centrally located within the LA.

### **2.11 C-752-B Fuel Dispensing Station**

C-752-B Fuel Dispensing Station consists of a 4,200 ft<sup>2</sup> reinforced concrete pad with berms, a collection drainage sump, two aboveground, double-wall fuel storage tanks, and associated fuel dispensing pumps. Each tank is divided into two fuel cells, one with a 3,000 gal capacity and the other with a 1,000 gal capacity. 90% gasoline-10% ethanol blend (E10) gasoline and “off-road” bio-diesel are contained in the larger fuel cells. The smaller fuel cells contain 85% ethanol-15% gasoline blend (E85) gasoline and “on-road” diesel fuel. Interstitial leak monitors are present on each tank set. The berms are sized such that a release from one of the tanks can be contained within the bermed area. C-752-B is supplied with electrical service. The facility does not contain hazardous materials other than the vehicle fuels discussed here. It is located outside of the LA, south of the plant.

### **2.12 C-752-B-T01 Fuel Station Facility**

C-752-B-T01 is a small wooden building approximately 96 ft<sup>2</sup> located on the southwest corner of the C-752-B pad. This building contains monitoring equipment and the electronic controllers associated with the fuel dispensing system. Located outside of the structure is a generator staging area for used absorbent media and a spill response kit. The facility does not contain hazardous materials.

### **2.13 C-754 Equipment Storage Facility**

C-754 is a ~7,500 ft<sup>2</sup> facility used to house excess infrastructure-related materials (e.g., furniture, office supplies). The facility has a soft “clamshell” type cover over a concrete pad, and is surrounded by a gravel parking area, and is equipped with electrical service. C-754 is centrally located within the LA. No chemicals or other materials are present in the facility.

### **2.14 C-755-A Maintenance Facility**

C-755-A is a 3,360 ft<sup>2</sup> single-story structure used as a maintenance shop, with a bermed concrete floor that drains to a sump. Liquids that accumulate in the sump are removed by a vendor for off-site disposal. The space includes an open shop area for performance of general maintenance activities on support equipment, such as lawn mowers and tractors. A small welding area is located in the facility that contains compressed gas bottles used to support welding activities. The facility contains four

flammable storage cabinets for miscellaneous lubricants, greases, fuels, and painting supplies. A battery charging area is located within the shop. Spent vehicle batteries and electronic scrap are stored in this area until removed for recycling. A portable secondary containment structure for herbicides is located near the northwest corner of the building. The facility is equipped with electrical service and supplied water for a safety shower and an emergency eye wash. C-755-A is located on the north end of C-755 trailer Complex.

### **2.15 C-755-A1 Brining Facility**

C-755-A1 is a 108 ft<sup>2</sup> single-story plastic prefabricated structure. The shed contains the brining equipment used to mix brine solutions for winterization activities. The facility is equipped with electrical service and supplied water. The C-755-A1 structure is located directly north of the C-755-A maintenance shop within the C-755 Complex.

### **2.16 C-755-B Change House**

C-755-B is a 2,400 ft<sup>2</sup> single-story facility. The space is used as a change house for ISSC personnel and is equipped with electrical service and supplied water. The C-755-B change house is located in the northern portion of the C-755 Complex.

### **2.17 C-755-C Carpenter Facility**

C-755-C is a 600 ft<sup>2</sup> single-story structure used as a carpenter shop. It is located in the northern portion of the C-755 Complex. The facility is equipped with electrical service.

### **2.18 C-755-D Storage Facility**

C-755-D is a 100 ft<sup>2</sup> single-story structure once used as a security portal for the swing gate located on the northeast corner of the C-755 Complex. The C-755-D building is now used to store small electrical supplies. The facility is equipped with electrical service and does not contain hazardous materials.

### **2.19 C-755-J Sealand Storage Containers**

C-755-J is a set of two standard 160 ft<sup>2</sup> Sealand containers used for storage of general maintenance parts/equipment for electrical and plumbing maintenance activities. The Sealand containers are not equipped with utilities. The C-755-J Sealand storage containers are located in the northeast portion of the C-755 Complex and do not contain hazardous materials.

### **2.20 C-755-K Sealand Storage Container**

C-755-K is a standard 160 ft<sup>2</sup> Sealand container used for storage of general materials such as brooms and shovels. The C-755-K Sealand storage container is not equipped with utilities. The C-755-K Sealand storage container is located in the northeast portion of the C-755 Complex and does not contain hazardous materials.

## **2.21 C-755-L Sealand Storage Container**

C-755-L is a standard 160 ft<sup>2</sup> Sealand container used for storage of general maintenance parts/equipment for electrical and plumbing maintenance activities. The Sealand container is not equipped with utilities. The C-755-L Sealand storage container is located in the northeast portion of the C-755 Complex and does not contain hazardous materials.

## **2.22 C-755-M Storage Shed**

C-755-M is a 120 ft<sup>2</sup> single-story prefabricated wooden structure. The space is used for storage of miscellaneous janitorial supplies, including paper products and general cleaning supplies and is not equipped with utilities. The C-755-M shed is located in the southern portion of the C-755 Complex and does not contain hazardous materials.

## **2.23 C-755-M1 Storage Shed**

C-755-M1 is an 81 ft<sup>2</sup> single-story prefabricated wooden structure. The space is used for general storage of miscellaneous supplies and is not equipped with utilities. The C-755-M1 shed is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

## **2.24 C-755-M2 Storage Shed**

C-755-M2 is a 36 ft<sup>2</sup> single-story prefabricated wooden structure used for general storage of miscellaneous supplies. The facility is not equipped with utilities and does not contain hazardous materials. The C-755-M2 shed is located in the southwest portion of the C-755 Complex.

## **2.25 C-755-M3 Storage Shed**

C-755-M3 is a 216 ft<sup>2</sup> single-story prefabricated wooden structure. The space is used for general storage of miscellaneous supplies and is not equipped with utilities. The C-755-M3 shed is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

## **2.26 C-755-M4 Storage Shed**

C-755-M4 is a 384 ft<sup>2</sup> single-story prefabricated wooden structure. The space is used for general storage of miscellaneous supplies and is equipped with electrical utilities. The C-755-M4 shed is located in the southeast portion of the C-755 Complex and does not contain hazardous materials.

## **2.27 C-755-Q Sealand Storage Container**

C-755-Q is a standard 160 ft<sup>2</sup> Sealand container used for storage of miscellaneous carpentry supplies and is not equipped with utilities. The C-755-Q Sealand storage

container is located in the northern portion of the C-755 Complex and does not contain hazardous materials.

### **2.28 C-755-S Sealand Storage Container**

C-755-S is a standard 320 ft<sup>2</sup> Sealand container used for storage of excess office furniture and is not equipped with utilities. The C-755-S Sealand storage container is centrally located in the C-755 Complex and does not contain hazardous materials.

### **2.29 C-755-T Storage Structure**

C-755-T is a 504 ft<sup>2</sup> single-story structure installed on a gravel pad. The space is used for storage of signs, plastic sheeting, steel stanchions, spill kits, and new personal protection equipment. The storage shed is not equipped with any utilities and does not contain hazardous materials. The C-755-T storage shed is located in the eastern portion of the C-755 Complex.

### **2.30 C-755-T05 Office Trailer**

C-755-T05 is a 1,680 ft<sup>2</sup> single-story office trailer. The space includes a break room, restrooms and office space and is equipped with electrical service and supplied water. A flammable materials storage cabinet is located on the northeast corner of the trailer, containing miscellaneous flammable and non-flammable supplies. The C-755-T05 office trailer is located in the northwest portion of the C-755 Complex.

### **2.31 C-755-T08B Change House**

C-755-T08B is an 840 ft<sup>2</sup> single-story trailer. The space is used as a change house for ISSC personnel and is equipped with electrical service and supplied water. The C-755-T08B change house is located in the eastern portion of the C-755 Complex and does not contain hazardous materials.

### **2.32 C-755-T13 Sealand Storage Container**

C-755-T13 is a standard 160 ft<sup>2</sup> Sealand container used for storage of miscellaneous supplies and is not equipped with utilities. The C-755-T13 Sealand storage container is located in the northern portion of the C-755 Complex and does not contain hazardous materials.

### **2.33 C-755-T14 Sealand Storage Container**

C-755-T14 is a standard 160 ft<sup>2</sup> Sealand container used for storage of miscellaneous carpentry supplies and is not equipped with utilities. The C-755-T14 Sealand storage container is located in the northern portion of the C-755 Complex.

### **2.34 C-755-T17A Change House**

C-755-T17A is a 1,440 ft<sup>2</sup> single-story trailer. The space is used as a change house for ISSC personnel and is equipped with electrical service and supplied water. The C-755-T17A change house is located in the western portion of the C-755 Complex and does not contain hazardous materials.

### **2.35 C-755-T18 Office Trailer**

C-755-T18 is a 1,536 ft<sup>2</sup> single-story office trailer. The space includes office space, break areas with microwave ovens and refrigerators, restrooms, and work stations. The trailer is equipped with electrical service and supplied water. The C-755-T18 office trailer is located in the west portion of the C-755 Complex and does not contain hazardous materials.

### **2.36 C-755-T19 Office Trailer**

C-755-T19 is a 2,160 ft<sup>2</sup> single-story office trailer. The space includes a break room, restrooms, office space, and work stations. The trailer is equipped with electrical service and supplied water. The C-755-T19 office trailer is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

### **2.37 C-755-T20 Office Trailer**

C-755-T20 is a 1,584 ft<sup>2</sup> single-story office trailer. The space includes a break room, restrooms, and office space. The trailer is equipped with electrical and supplied water. The C-755-T20 office trailer is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

### **2.38 C-755-T21 Office Trailer**

C-755-T21 is a 900 ft<sup>2</sup> single-story office trailer. The trailer is currently empty and not in use. The trailer is equipped with electrical service and supplied water. The C-755-T21 office trailer is centrally located in the C-755 Complex and does not contain hazardous materials.

### **2.39 C-755-T22A Office Trailer**

C-755-T22A is a 1,440 ft<sup>2</sup> single-story office trailer. The space includes a large conference room area, office space, and a workshop for Radiation Protection group personnel. The trailer is equipped with electrical service. The facility contains sealed radiological sources and general cleaning supplies. The C-755-T22A office trailer is located near the center of the C-755 Complex.

#### **2.40 C-755-T23 Office Trailer**

C-755-T23 is a 1,800 ft<sup>2</sup> single-story office/training trailer. The space includes a break room, restrooms, and office and training space, and is equipped with electrical service and supplied water. The C-755-T23 office trailer is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

#### **2.41 C-755-T26 Office Trailer**

C-755-T26 is a 1,440 ft<sup>2</sup> single-story office trailer. The space includes a break room, restrooms, and office space and is equipped with electrical service and supplied water. The C-755-T26 office trailer is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

#### **2.42 C-755-T27 Office Trailer**

C-755-T27 is a 1,440 ft<sup>2</sup> single-story office trailer. The space includes a break room, restrooms, and office space. The trailer is equipped with electrical service and supplied water. The C-755-T27 office trailer is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

#### **2.43 C-755-T28 Office Trailer**

C-755-T28 is a 1,440 ft<sup>2</sup> single-story office trailer. The space includes a break room, restrooms, and office space. The trailer is equipped with electrical service and supplied water. The C-755-T28 office trailer is located in the southwest portion of the C-755 Complex and does not contain hazardous materials.

#### **2.44 C-755-U Storage Structure**

C-755-U consists of eight prefabricated carport-type structures installed on a gravel pad, totaling 4,032 ft<sup>2</sup>. The space is used for the storage of large vehicles, including tractors and excavation equipment. One carport is used for the storage of small equipment and supplies, including three flammable materials cabinets that hold miscellaneous lubricants, greases, fuels, and painting supplies. The equipment sheds are not equipped with utilities. The C-755-U equipment sheds are located in the northwest corner of the C-755 Complex.

#### **2.45 C-755-V Storage Structure**

C-755-V is a 270 ft<sup>2</sup> single-story prefabricated carport-type structure installed on a gravel pad. The space is used for storage of rock salt used for winterization activities. The area is not equipped with any utilities. The C-755-V equipment shed is located in the eastern portion of the C-755 Complex.

## **2.46 C-755-X Storage Trailer**

C-755-X is a 270 ft<sup>2</sup> single-story storage trailer used to store janitorial supplies and is not equipped with utilities. It is centrally located at the southeast corner of the C-755 Complex and does not contain hazardous materials.

## **2.47 C-755-Y Sealand Storage Container**

C-755-Y is a standard 160 ft<sup>2</sup> Sealand container used as a Generator Staging Area for nonradiological used oil and oil filters, used antifreeze, used fuel and fuel filters, used absorbents, and Universal Waste generated from maintenance activities. The Sealand container is not equipped with utilities. The C-755-Y Sealand storage container is located in the northern portion of the C-755 Complex.

## **2.48 C-755-Z Storage Trailer**

C-755-Z is a 224 ft<sup>2</sup> single-story structure installed on a gravel pad and is not equipped with utilities. The C-755-Z trailer is located in the southeastern portion of the C-755 Complex and has been removed from service.

## **2.49 C-802 Meteorological Tower**

C-802 is the meteorology tower for PGDP. It is located at the south end of the C-810 parking lot does not contain hazardous materials. The tower is no longer used, and is abandoned in place.

## **2.50 C-802-A Communication Equipment Facility**

C-802-A is a 168 ft<sup>2</sup> structure containing communications equipment associated with the C-802 meteorological tower operation. The facility is equipped with electrical service. A diesel-powered backup generator is located south of C-802-A. The facility is located at the south end of the C-810 parking lot and does not contain hazardous materials.

## **2.51 C-802-B Electrical Equipment Facility**

C-802-B is a 24 ft<sup>2</sup> structure containing electrical equipment associated with the C-802 meteorological tower. The facility is equipped with electrical service. The facility is located directly under C-802 at the south end of the C-810 parking lot and does not contain hazardous materials.

## **2.52 Underground Storm Shelters**

Underground storm shelters are provided for the safety of personnel during inclement weather. The shelters are steel-lined structures varying in size from 48 ft<sup>2</sup> to 160 ft<sup>2</sup> and are occupied when personnel are directed to evacuate mobile offices and vehicles. These facilities are not equipped with electrical service or supplied water. Table 1 lists the various underground shelters and the size of each shelter.

**Table 1. List of Underground Storm Shelters**

<b>Facility Designation</b>	<b>Area (ft<sup>2</sup>)</b>
C-612-B	48
C-730-A	48
C-743-B	160
C-743-C	96
C-746-U13	72
C-755-E	160
C-755-F	160
C-755-G	160
C-755-H	160

### 2.53 Parking Lots

Throughout the site, various parking lots are provided for both contractor and personal vehicles. The parking lots do not contain hazardous materials other than those associated with parked vehicles. Several lots are equipped with lighting. The locations of the parking lots are listed in Table 2 along with the facility designation.

**Table 2. List of Parking Lots**

<b>Facility Designation</b>	<b>Location Description</b>
C-103-PL	C-103 Parking Lot
C-225-A	Gravel lot near Post 48
C-331-C	Gravel Parking/Staging Lot
C-730-C	C-743 Parking Lot (East)
C-730-D	C-743 Parking Lot (West)
C-755-P	C-755 Parking Lot (South)
C-764-A	C-764 Parking Lot
C-800	Motorcycle Shelter near C-811
C-810	C-100 Parking Lot
C-811	C-720 Parking Lot
C-1200	DUF <sub>6</sub> Parking Lot
C-1212	DUF <sub>6</sub> Parking Lot

### 2.54 General Areas

Within the boundary of the Paducah Site, large parcels of land are not occupied by any structures in support of DOE activities. These areas are assigned contractually to the ISSC to perform regular care (i.e., mowing) in order to minimize combustible loading that could lead to large fires in the area of operations within PGDP. These areas are described in Table 3.

**Table 3. List of General Areas**

<b>Facility</b>	<b>Facility Type</b>	<b>Size (acres)</b>
A-3	Northwest Area (1, 3, 4, & 5)	20.5
A-3	Northwest Area (2)	21
A-4	Fence	10
B-1	C-416 Pad Area	2.6
B-3	Northeast Area, Section 1	9
B-3	Northeast Area, Section 2	9
B-3	Northeast Area, Section 3	9
C-1	C-410 Complex Area	6.9
C-2	Area west of C-400	1.1
C-3	C-340 Complex Area	3
C-4	C-342 Facility Area	0.7
C-6	Southeast Area	36.2
D-1	Southwest Area (1 and 3)	20.6
D-1	Southwest Areas	20.6
E-1	Access Road	150
F-1	Perimeter Fence	8.1
F-2	C-755 Area	7.9
F-3	Roads	40
F-4	C-103 Building Area	2.4
F-5	Road Area	45.8
F-6	C-743-T17 Area	1.3
F-7	C-752 Area	16
F-8	C-730 Area	1.8
F-10	Area East of C-611	15.5
F-11	C-611-M	2
F-11	C-611-N	2
F-12	Area	34.2
F-13	Road—Old	50
F-13	Road—New	50
F-14	Areas	4
G-1	Boundary Markers	4
C-RR C-RR-T C-AREA	Railroad Tracks	21,320 linear feet

## **3.0 ALL HAZARDS SURVEY DATA COLLECTION METHODOLOGY**

### **3.1 Identify and Describe the Facility**

Each ISSC facility and associated activity is covered by an AHS that identifies and briefly describes its operations. Highly specific and detailed information is not always necessary and may be included by reference when this information is available from other safety-related documentation. At a minimum, sufficient information will be included to provide a general understanding of the facility or activity.

### **3.2 Hazardous Materials Screening**

The purpose of a hazardous materials screening process is to identify specific materials (chemical and radioactive) and quantities present in a facility that, if released, could produce impacts consistent with the definition of an Operational Emergency (OE) found in DOE O 151.1D. In addition to identifying the specific hazardous materials, screening also can eliminate the need to analyze quantities of these materials that represent only minor or insignificant hazards. The screening process focuses the quantitative analysis on materials that, because of their quantity, toxicity and dispersibility, have the potential to harm people outside the immediate workplace environment where the materials are used or stored. If the process identifies a hazardous material(s) that does not screen out, an EPHA will be needed for that facility.

The inventories to be used in the screening process may be based on the historical inventory or maximum anticipated inventory. As required by DOE O 151.1D, Hazards Surveys and EPHAs are reviewed every three years at a minimum and revised when significant changes occur to a facility and/or its operations. These review requirements are designed to address impacts of significant inventory changes that may occur over the life of the facility.

Recommended screening processes and descriptions of the criteria to be used can be found in DOE O 151.1-D, Attachment 3, *Emergency Management Core Program*, DOE Guide (G) 151.1A, *Emergency Management Fundamental and the Operational Emergency Base Program*, and DOE G 151.1-2, *Technical Planning Basis*. Survey worksheets are generated to determine which ISSC facilities can be excluded or which require further evaluation in this document. Table 4 and Table 6 contain information on facility screening.

#### **3.2.1 RADIOACTIVE HAZARDOUS MATERIALS**

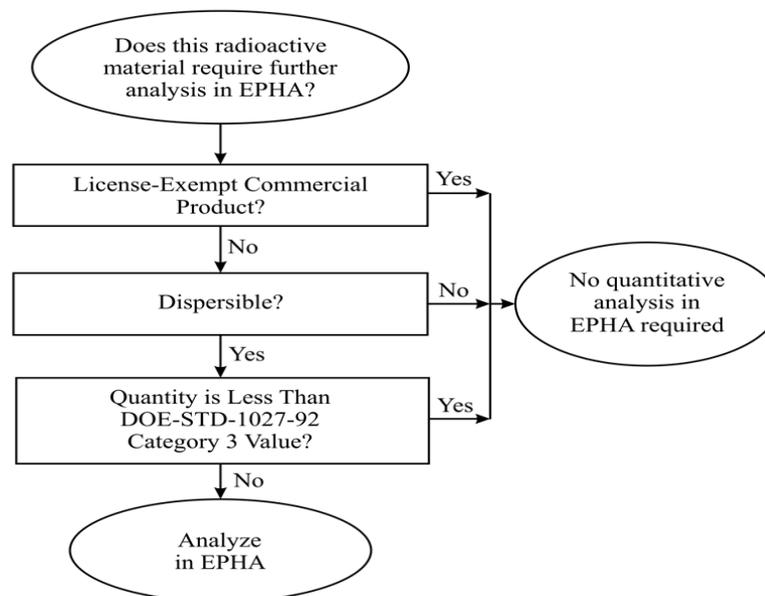
All radioactive hazardous materials (herein referred to as radioactive material) in a facility are considered for possible analysis in an EPHA. The radioactive material inventory for ISSC facilities was obtained from facility personnel. The complete list and descriptions of the radioactive materials are presented in the first section of each facility screening.

### 3.2.1.1 Radioactive Material Screening Methodology

Radioactive materials that do not represent the type or magnitude of hazard that is intended to form the technical basis for hazardous material EM programs and meet at least one criterion listed in this section are excluded from further consideration.

DOE-STD-1027-92<sup>1</sup>, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, allows for exclusion of some materials for facility hazard categorization purposes.

The following materials may be excluded from consideration during the screening process. Only one criterion listed below has to be met for that material to be screened out. Figure 2 depicts the screening mechanism for radioactive materials.



**Figure 2. Radioactive Hazardous Material Screening Process**

#### 3.2.1.1.1 License-Exempt Commercial Products.

Radioactive materials used in license-exempted, commercially available products as described in 10 Code of Federal Regulations (CFR) Part 30, *Rules of General Applicability to Domestic Licensing of Byproduct Material*, section 30.11 and 30.19, (e.g., timepieces, illumination devices, thermostats, etc.) are categorically excluded from consideration.

#### 3.2.1.1.2 Dispersibility

The degree to which a substance represents an acute airborne health hazard to humans is a major consideration in determining the need for further analysis in an

<sup>1</sup> DOE-STD-1027 has been updated. However, as of this revision of the AHS the updated version has not been included in the DOE O 151.D; therefore SST continues to use DOE-STD-1027-92.

EPHA. Radioactive materials that may be excluded based on dispersibility include the following:

- Sealed radioactive sources and other materials engineered to meet “special form” testing specified by the U.S. Department of Transportation (DOT) in 49 CFR 173.469 or testing specified by the American National Standards Institute (ANSI) standard, ANSI N43.6, *Sealed Radioactive Sources-Classification*.
- Radioactive materials in solid form that cannot be reduced to small particles (less than 10 microns in diameter) by some plausible mechanism (not including malevolent acts).
- Radioactive materials stored in DOT Type B shipping containers with overpack, provided the Certificates of Compliance are current and the Certificates authorize the stored materials.

#### 3.2.1.1.3 Application of Threshold Screening Quantities

Radioactive material inventories are compared against Category 3 values in DOE-STD-1027-92, Attachment 1, Table A-1. If the quantity of radioactive material considered as part of the material at risk for a single release event (not including extreme malevolent acts) is less than the Category 3 values, then exclude them from further consideration. When more than one radionuclide is present in the same form, it is appropriate to use the summation-of-radionuclide-threshold-ratios approach specified in DOE-STD-1027-92, Attachment 1. A quantitative analysis is required if the sum of the fractions of all radionuclides subject to the same release event equals or exceeds one (1).

If the physical properties of the material or the manner in which it is stored or packaged indicate that the respirable release fraction would be significantly lower than the value used in calculating the threshold screening quantity, then those factors should be considered in the quantitative analyses of release consequences in the EPHA.

DOE-STD-1027-92, threshold screening quantities should not be used to eliminate from consideration very low-specific-activity substances such as depleted, natural, or low enriched uranium in soluble forms. For these materials, chemical, not radiological, toxicity actually may be the dominant concern.

#### 3.2.1.2 Radioactive Material Screening Results

The radioactive material inventory for ISSC facilities is located in the C-755-T22A office trailer/radiological laboratory. The complete radioactive material inventory and screening results for C-755-T22A and a detailed justification for the elimination of materials can be found in “C-755-T-22A Radioactive Hazardous Material Screening Worksheet.” The inventory is in the form of non-dispersible solid laboratory waste (smears, personal protective equipment, maslin, etc.) or sealed radioactive sources meeting criteria found in section 3.2.1.1.2. Therefore, the radioactive material at this location may be excluded from consideration from further screening and does not require evaluation in an EPHA.

### 3.2.2 TOXICITY-BASED HAZARDOUS MATERIALS

The inventory of toxicity-based hazardous materials (herein referred to as chemical hazardous materials [CHM]) for ISSC facilities was obtained by facility walk-downs and personnel interviews. This inventory can include, but is not limited to, miscellaneous cleaning and janitorial supplies, lubricants, greases, non-contaminated waste oil, spent batteries, gasoline, E85 fuel, biodiesel fuel, diesel fuels, and liquid propane cylinders. Hazardous material inventories and detailed descriptions of the materials (when needed) are presented on corresponding “Chemical Hazardous Material Screening Worksheets.”

#### 3.2.2.1 Chemical Hazardous Material Screening Methodology

A facility AHS worksheet for CHM is completed for all ISSC facilities. These worksheets are used to determine if further evaluations are needed, including formal EPHA. For any CHM, the overriding EM concern is the acute human toxicity of the substance by the airborne pathway (inhalation, dermal), contact, absorption through eyes and mucosa, etc. CHM with impacts on workers in the immediate event scene (e.g., asphyxiation, frostbite) are not the primary concern of an EM system, but are among the hazards addressed by worker health and safety programs.

Because of the nature of ISSC activities, screening of CHM is performed in two phases. Commonly found materials (standard office products and general cleaning supplies) are initially excluded from further consideration in that they do not represent the type or magnitude of hazard that is considered when forming the technical basis of a hazardous material EM program. This criterion excludes the majority of facilities under ISSC control. For products other than those listed above, a secondary screening against the following criteria occurs. The screening process for hazardous materials is depicted in Figure 3.

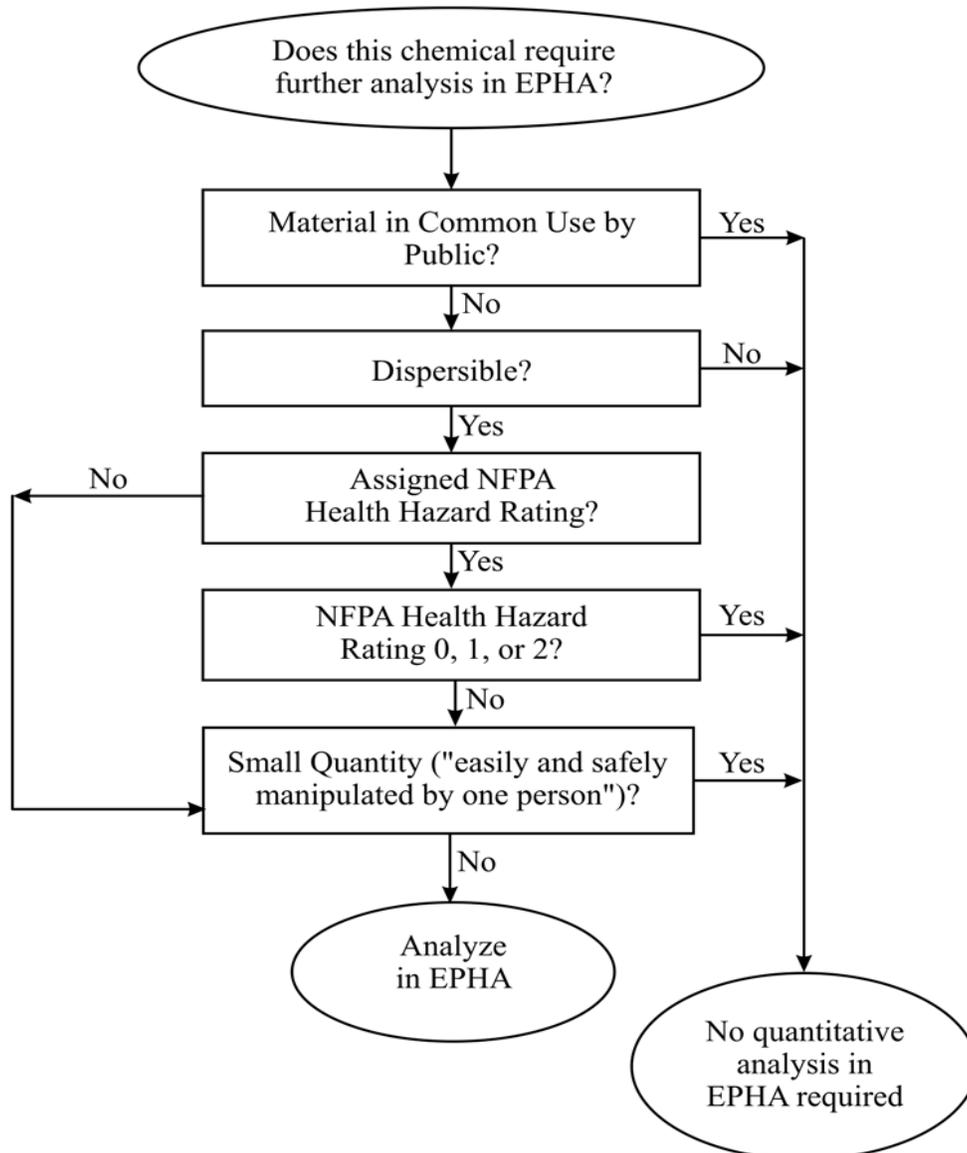
##### 3.2.2.1.1 Available to General Public

Eliminate from further consideration any material that is commonly available to and used by the general public, provided that the formulation and concentration is the same as for products that are distributed without significant restrictions to the public. Examples include, but are not limited to, cleaning products, bleach, motor oil, motor fuels, and pesticides not designated as “restricted use” by the U.S. Environmental Protection Agency.

##### 3.2.2.1.2 Dispersibility

Eliminate from further consideration any material that does not present an airborne exposure hazard due to its dispersibility, physical form, or other factors. Materials may be eliminated if they meet one of the following tests:

- The substance is a solid at normal temperatures and does not contain or include a significant fraction of small particles (less than approximately 10 microns in diameter that can be suspended readily in air, and there is no plausible release mechanism (not including extreme malevolent acts) that could reduce the material to small particles.
- Aqueous solutions where the hazardous component(s) is a non-volatile solute.



**Figure 3. Chemical Hazardous Material Screening Process**

- The substance is a liquid that exhibits a vapor pressure or partial pressure of a solution of less than 10 mmHg at about 25 degrees Celsius (°C).

#### 3.2.2.1.3 Health Hazard Rating

Eliminate from further consideration any materials that have a Health Hazard Rating of 0, 1, or 2 based on National Fire Protection Association 704 or, lacking that, have less than a high acute toxicity as measured by an Acute Exposure Guideline Level -3, Emergency Response Planning Guideline -3, or Temporary Emergency Exposure Limit -3. Chemicals without an assigned Health Hazard Rating require further analysis in an EPHA if they meet the other screening criteria that require further assessment. Any

chemical assigned a Health Hazard Rating of 3 based solely on cryogenic properties and the resulting frostbite hazard likewise may be excluded if there is no assigned hazard rating and the CHM cannot be eliminated based on the other screening criteria.

#### 3.2.2.1.4 Quantity

Eliminate from further consideration in an EPHA any material stored in "laboratory scale" quantities and smaller than those "easily and safely manipulated by one person." As used here, quantities "easily and safely manipulated by one person" are defined as five gal for liquids and 40 pounds for solids. For compressed gases, cylinders with a full gross weight of 40 pounds typically will contain 10 pounds or less for most common gases. Only the quantity that realistically could be considered part of the material at risk for a single release event (excluding extreme malevolent acts) should be compared to the laboratory scale quantity.

#### 3.2.2.1.5 Global Harmonization System Hazard Category

Eliminated from further consideration; material with a Global Harmonization System (GHS) Acute Toxicity Hazard Category of 3, 4, or 5, solid and liquid materials with any GHS Corrosion/Irritation (skin or eye) Hazard Category, and gaseous material with a GHS Corrosion/Irritation (skin or eye) Hazard Category 2 or 3.

#### 3.2.2.1.6 Other Excluded Materials

Simple asphyxiants, cryogenic material, fuel oil and gases (e.g. petroleum, propane, etc.) are excluded in the definition of hazardous materials used in DOE O 151.1D. Therefore, inventories and activities associated with fuel oil or gases are eliminated from further consideration in this survey.

#### 3.2.2.2 Chemical Hazardous Materials Screening Results

All CHM were screened against the criteria listed above. Once a material met one screening criteria, no further assessment was needed as indicated by an asterisk (\*). If the material could not be eliminated using those criteria, the material would require analysis via a formal EPHA. As a result of the screening process, no hazardous materials required additional analysis.

### **3.3 Identify Generic Types of Emergency Events and Conditions**

The generic types of emergency events and conditions that may occur at each facility for which some level of planning and preparedness may be required are identified in Table 4 and further described in Table 5. Hazardous materials that can be eliminated from quantitative analysis (i.e., EPHA) or are not specifically addressed as part of the Hazardous Material Program are considered when identifying the emergency conditions.

### **3.4 Qualitatively Describe Potential Impacts**

The potential impacts related to emergency conditions identified in the previous step are identified in Table 4 and further described in Table 5. The descriptions related to the potential impacts to the different types of OEs.

### **3.5 Identify Applicable Requirements**

Various federal, state, and local regulations include requirements that pertain to planning and preparedness for emergencies. DOE O 151.1D recognizes these as EMCP requirements and directs incorporation of them into site EM programs. The federal, state, and local regulations applicable to ISSC facilities are shown in Table 5.

### **3.6 Hazards Summary**

The results of the qualitative hazards summary described in the previous sections are documented in Table 4. Codes used in Table 4. are defined in Table 5. The inventories for both radioactive and chemical hazardous materials were derived from interviews provided by facility personnel and/or physical walk-downs for each building.

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-102-T02	Office trailer	6 - 8	None	1	1, 3, 4, 10, 12	1, 2, 9, 10
				2	1, 3, 4, 10, 12	
				9	1, 3, 4	
				10	1, 3, 4, 10, 12	
C-102-T03	Office trailer	6 - 8	None	1	1, 3, 4, 10, 12	1, 2, 9, 10
				2	1, 3, 4, 10, 12	
				9	1, 3, 4	
				10	1, 3, 4, 10, 12	
C-103	DOE Office Building	50 - 60	Chemical hazardous materials present do not require evaluation via Emergency Planning Hazards Assessment (EPHA). No radioactive material present.	1	1, 3, 4, 6, 8, 9, 10, 11, 12	1, 2, 9, 10
				2	1, 3, 4, 9, 10, 11, 12, 10	
				7	10	
				9	1, 3, 4, , 10, 11, 12	
C-104	Area access control and visitor badging	6	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	10	1, 3, 4, 10, 11, 12	1, 2, 9, 10
				1	1,3,4,5,6,7,8,9,10,11,12	
				2	1,3,4,5,6,7,8,9,10,11,12	
				5	1,3,4,5,6,7,8,9,10,11,12	
C-720-M Trailers (2)	Storage of spare equipment and parts	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	6	1,3,4,5,6,7,8,9,10,11,12	1, 2, 9, 10
				7	1, 10	
				9	1,3,4,5,6,7,8,9,10,11,12	
				10	1,3,4,5,6,7,8,9,10,11,12	
C-725	Janitorial, Roads and Grounds supply storage	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1	1, 3, 4, 5, 7, 12	1, 2, 9
				2	1, 3, 4, 5, 7, 12	
				5	5, 7, 12	
				8	1, 12	
				9	1, 3, 4	
				10	1, 3, 4, 5, 7, 12	

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-732	Storage of road salt	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	2	1, 3, 4, 12	9

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-743-T14	Office trailer	No routine occupancy	None	1	1, 3, 4, 10, 12	1, 2, 9, 10
				2	1, 3, 4, 10, 12	
				9	1, 3, 4	
				10	1, 3, 4, 10, 12	
C-750	Garage	4	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1	1, 3, 4, 5, 7, 12	1, 2, 4, 6, 9
				2	1, 3, 4, 5, 7, 12	
				3	1, 3, 4, 5, 7, 12	
				5	1, 3, 4, 5, 7, 12	
				6	1, 3, 4, 5, 7, 12	
				8	1, 3, 4, 5, 7, 12	
C-752-B	Fuel dispensing station	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	9	1, 3, 4, 5, 7, 12	1, 2, 4, 6, 9
				10	1, 3, 4, 5, 7, 12	
				1	1, 3, 4, 5, 7, 9, 12	
				2	1, 3, 4, 5, 7, 9, 12	
				3	1, 3, 4, 5, 7, 9, 12	
				5	1, 3, 5, 7, 9, 12	
C-752-B-01	Storage of spare equipment and parts	No routine occupancy	None	6	1, 3, 5, 7, 9, 12	1, 9
				9	1, 3, 4, 5, 7, 9, 12	
				1	1, 3, 4, 8, 9, 11, 12	
				2	1, 3, 4, 8, 9, 11, 12	
				9	1, 3, 4, 5, 7, 9, 12	

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-754	Storage of spare equipment	No routine occupancy	None	1 2 9 10	1, 3, 4, 6, 7, 12 1, 3, 4, 6, 7, 12 1, 3, 4, 6, 7, 12 1, 3, 4, 6, 7, 12	1, 9

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-A	Maintenance shop	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPA. No radioactive material present.	1 2 5 6 9 10	1, 3, 4, 5, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 5, 6, 7, 8, 12	1, 2, 4, 9
C-755-A1	Brining operations	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPA. No radioactive material present.	1 2 6 9	1, 3, 4, 5, 6, 7, 8, 12 1, 3, 4, 5, 6, 7, 8, 12 6, 7, 8 1, 3, 4	4
C-755-B	Change House	No routine occupancy	None	1 2 6 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 6, 7, 8 1, 3, 4	1, 2, 4, 9
C-755-C	Carpenter Shop	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPA. No radioactive material present.	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 2, 4, 9

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-D	Storage of spare equipment and parts	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-J	Storage of spare equipment and parts	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-K	Storage of spare equipment and parts	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-L	Storage of spare equipment and parts	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-M	Storage of janitorial supplies	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-M1	General storage	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-M2	General storage	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-M3	General storage	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-M4	General storage	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-Q	Storage of carpentry supplies	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-S	General storage	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-T	Storage of spare equipment and parts.	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-T05	Office trailer	17	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T08B	Change House	No routine occupancy	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 12	1, 2, 10
C-755-T13	Storage of spare equipment and parts.	No routine occupancy	None	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-T14	Storage of spare equipment and parts.	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 9	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4	1, 9
C-755-T17A	Change house	No routine occupancy	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 12	1, 2, 10
C-755-T18	Office trailer	4	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-T19	Office trailer	25	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T20	Office trailer	12	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T21	Office trailer	0	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T22A	Office trailer, radiological laboratory	6	Radioactive materials and chemical hazardous materials present do not require evaluation via EPHA.	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T23	Office trailer, training trailer	4	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T26	Office trailer	5	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-T27	Office trailer	6	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-T28	Office trailer	6	None	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9, 10
C-755-U	Storage of small equipment and supplies; shelter for industrial vehicles	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 5 6 9 10	1, 3, 4, 5, 6, 7, 8, 12 1, 3, 4, 5, 6, 7, 8, 12 1, 4, 5, 6, 7, 8, 12 1, 3, 5, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 6, 7, 8, 12	1, 2, 9
C-755-V	Storage of road salt	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 9 10	1, 3, 4, 6, 7, 8, 12 1, 3, 4, 6, 7, 8, 12 1, 3, 4 1, 3, 4, 12	1, 2, 9
C-755-X	Small maintenance shop	No routine occupancy	None	1 2 9 10	1, 3, 4, 5, 12 1, 3, 4, 5, 12 1, 3, 4 1, 3, 4, 5, 12	1, 9, 9
C-755-Y	Generator Staging Area for Waste	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 5 6 9 10	1, 3, 4, 5, 6, 7, 12 1, 3, 4 1, 3, 4, 5, 6, 7, 10	1, 2, 9

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
C-755-Z	Storage of small equipment and supplies	No routine occupancy	None	1 2 9 10	1, 3, 4, 12 1, 3, 4, 12 1, 3, 4 1, 3, 4, 12	1, 2, 9
C-802	Meteorological tower	No routine occupancy	None	1 2 9 10	1, 3, 4, 9, 11, 12 1, 3, 4, 9, 11, 12 1, 3, 4 1, 3, 4, 9, 11, 12	2
C-802-A	Communication equipment storage	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 9 10	1, 3, 4, 9, 11, 12 1, 3, 4, 9, 11, 12 1, 3, 4 1, 3, 4, 9, 11, 12	2
C-802-B	Electrical equipment storage	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 9 10	1, 3, 4, 9, 11, 12 1, 3, 4, 9, 11, 12 1, 3, 4 1, 3, 4, 9, 11, 12	2
C-612-B, C-730-A, C-743-B, C-743-C, C-746-U13, C-755-E, C-755-F, C-755-G, C-755-H	Underground storm shelters	No routine occupancy	None	2	1, 3	1, 2, 9
C-103-PL, C-225-A, C-331-C, C-730-C, C-730-D, C-755-P, C-764-A, C-800, C-810, C-811, C-1200, C-1212	Parking lots	No routine occupancy	Chemical hazardous materials present do not require evaluation via EPHA. No radioactive material present.	1 2 3 5 6 9 10	1, 5, 6, 7 1, 5, 6, 7	4, 6, 7

**Table 4. Hazards Survey Summary for Swift & Staley Team Facilities (continued)**

Building No.	Facility Use	Occupancy	Hazardous Materials <sup>1</sup>	Possible Emergency Conditions <sup>2,3</sup>	Potential Impacts <sup>2,3</sup>	Applicable Planning and Preparedness Requirements <sup>2</sup>
General Areas	Open areas requiring maintenance and mowing	No routine occupancy	None	2 5 6	1, 3, 4, 5, 6, 7, 8, 12 5, 6, 7, 8, 12 5, 6, 7, 8, 12	4, 6, 7

1. Including chemical hazardous materials and radioactive hazardous materials.

2. Codes for this column are defined in Table 5.

3. Emergency conditions and potential impacts not presented in the table are not postulated to occur in these facilities.

**Table 5. Codes Used in Table 4**

Possible emergency condition	Potential impacts	Applicable Planning and Preparedness Requirements
1. Structural Fire, Explosion or Collapse	1. Worker Death or Injury	1. Occupational Safety and Health Administration, 29 Code of Federal Regulations (CFR) 1910.38, <i>Emergency Action Plans</i> 29 CFR 1910.165, <i>Employee Alarm Systems</i>
2. Natural Phenomena (wind, tornado, flood, earthquake, wildfire, snowstorm, etc.)	2. Public Death or Injury	2. 41 CFR 102-74.235-260, <i>Occupant Emergency Program</i> 41 CFR 102.74-360, <i>Accident and Fire Prevention</i>
3. Workplace Accidents/Mass Causality Events	3. Facility and Equipment Damaged	3. 44 CFR 302, <i>Civil Defense – State and Local Emergency Management Assistance Program</i>
4. Industrial/Process Accident	4. Facility and Equipment Destroyed	4. 40 CFR 104 -129, <i>Water Programs</i> 40 CFR 112, <i>Oil Pollution Prevention</i>
5. Hazardous Material Release	5. Hazardous Materials Release	5. 40 CFR 141-142, <i>National Primary Drinking Water Regulations</i>
6. Environmental Release	6. Waterways Polluted	6. 40 CFR 300, <i>National Oil and Hazardous Substances Pollution Contingency Plan</i> 40 CFR 302, <i>Designation, Reportable Quantities, and Notification</i>
7. Damage Resulting in Loss of Classified Material	7. Environmental Damage	7. 40 CFR 355, <i>Emergency Planning and Notification</i>
8. Nuclear Criticality	8. Wildlife Killed or Injured	8. 49 CFR 172 Series, <i>Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Response Information, Training Requirements, and Security Plans</i>

---

9. Hazard External to the Facility (e.g., hazardous materials in nearby facility, transportation incident, utility incident, wildfire)	9. Site Mission Degraded	9. U.S. Department of Energy (DOE) Order (O) 420.1D, Chg. 2, <i>Facility Safety</i> DOE O 440.1B Chg. 2, <i>Worker Protection Program for DOE Federal Employees</i> DOE O 470.4B Chg. 2, <i>Safeguards and Security Programs</i>
10. Malevolent Act (terrorism, sabotage, hostage-taking, etc.)	10. Loss/Compromise of Classified Material	10. Health Insurance Portability and Accountability Act of 1996
	11. Adverse Effect/Compromise of Response Capability	
	12. Cost Increase	

---

## 4.0 BASE PROGRAM REQUIREMENTS

All facilities are subject to an EMCP that provides the framework for response to serious events involving health and safety, the environment, safeguards, and security. Where hazardous materials exceed certain screening criteria, facilities also are subject to the EM Hazardous Materials Program and the planning and preparedness requirements of this enhanced program. This section describes the EMCP planning and preparedness requirements.

### 4.1 Emergency Response Organization

The Paducah Site Emergency Response Organization (ERO) is defined in CP2-EP-1000, *Paducah Site Emergency Management Plan*, and is administered by the D&R Contractor on behalf of DOE. Each employee is responsible for reporting emergencies or abnormal situations immediately to his or her supervisor and/or to the Paducah Plant Shift Superintendent (PSS). The PSS fills the role of Incident Commander. The PSS, acting as the Incident Commander, will initiate an appropriate response, including categorization/classification of the event, making required notifications, issuing on-site protective actions, and making appropriate off-site protective action recommendations. The PSS also will activate the ERO elements as required by the Emergency Plan (EP), depending upon the nature of the event and its categorization/classification. The ERO elements that may be activated in response to an emergency event include the following:

- On-Scene Field Response (PSS personnel, field monitoring teams, fire department, protective force, and/or specialist personnel with experience and training in hazardous materials response, emergency medical treatment, health physics/radiation protection, and environmental response.)
- Emergency Operations Center (EOC) cadre
- Joint Information Center (JIC)

### 4.2 Off-Site Response Interfaces

In the event of an emergency within the Paducah Site, a number of off-site resources are available to assist in the response. Resources include DOE national emergency response assets, other federal agencies, DOE contractors on the Paducah Site, and local and state agencies/organizations. Additional resources may be utilized for emergencies requiring special resources or training (i.e., structural/building collapse). In the event of a severe event that results in a structure collapse with victims trapped, the PSS will request mutual aid assistance. Agreements are in place via Letters of Agreement with off-site local and state agencies/organizations. These documents spell out the type of support available and the process for invoking each agreement.

### **4.3 Emergency Categorization**

Timely recognition of events and an understanding of the possible consequences that could result from an event are essential in ensuring that an appropriate response is initiated in an emergency. The D&R Contractor EM program uses an event categorization/classification process to facilitate this early recognition and to identify the appropriate categorization/classification of the event. A response commensurate with the specific event and the categorization/classification is initiated. The PSS maintains the responsibility and capability for assessment of the event, implementing the appropriate protective actions, and ensuring that off-site officials are informed of the potential or actual consequences, if necessary.

### **4.4 Communications**

Prompt notification of on-site personnel, emergency responders, and off-site agencies and organizations is critical during an emergency. The PSS is the focal point for notifications and is responsible for initiating an appropriate response to an event. Communication requirements fall into four general categories. The following are the categories and primary means of communication in each of these categories.

#### **4.4.1 INITIAL NOTIFICATION OF EMERGENCY RESPONSE ORGANIZATION**

- From any plant phone, dial PSS
- Alarm pull box
- Radio
- Cellular phone call to the PSS
- Messenger

#### **4.4.2 WARNING AND EMERGENCY INSTRUCTIONS TO ON-SITE WORKERS AND TO THE PUBLIC**

- Building/Site Public Address System
- Radio
- Cellular phone
- Off-site Public Warning Siren System
- Notification of ERO and site management by Send Word Now

#### **4.4.3 OPERATIONAL COMMUNICATIONS BETWEEN COMMAND CENTERS AND FIELD RESPONSE ELEMENTS**

- Radio
- Cellular phone

#### **4.4.4 EMERGENCY PUBLIC INFORMATION**

- Press statements/releases
- Press briefings

These are the primary forms of communications that will be used:

- Plant telephone system
- Public Address System
- Radios
- Cellular phones

#### **4.5 Protective Actions**

The event categorization and classification process is instrumental in determining and implementing initial on-site protective actions and, when appropriate, advising the county and/or state EROs of off-site protective action recommendations. Protective actions for on-site personnel include, but are not limited to, alerting, sheltering-in-place, evacuation, decontamination of personnel, and conducting personnel accountability. Protective actions for on-site workers are defined in the EP, EM plans, and implementing procedures. Protective action recommendations for off-site personnel are provided by the Paducah Site to the county ERO and include sheltering-in-place and evacuation.

#### **4.6 Medical Support**

The D&R Contractor provides on-site emergency medical coverage. Currently, this consists of a small medical staff on weekdays during the day shift. The on-site ambulance service is provided by the Paducah Site fire department. A paramedic is onsite 24 hours a day, seven days a week.

This medical support is the first line of emergency medical response. The Paducah Site Emergency Medical Technicians (EMTs) transport personnel injured within the site boundaries to the on-site and/or off-site medical facilities, as needed. Notification lists and procedures are established and maintained to ensure timely and efficient response of medical personnel anywhere on-site. Medical support staffs are trained to ensure appropriate emergency medical care for illnesses, injuries, or hazardous material exposures associated with the activities being conducted on-site.

Ambulances are staffed with EMTs and are available 24 hours a day. All ambulances have the appropriate protective clothing for the safety of the emergency provider. The decision to transport and the succession of patients for transport rests with the senior medical representative on-site at the time. EMT and paramedic services are provided in accordance with predetermined protocols prescribed by the Site Occupational Medical Director.

The initial protocol for reporting a need for medical assistance is to dial the PSS office, which will result in immediate assistance from the fire department.

#### **4.7 Emergency Public Information**

The JIC provides the initial framework and resources to provide timely and accurate information to the media and general public during a site area emergency and when

necessary during an alert. This element of the EM program works closely with DOE and DOE contractors in coordinating the release of information. The Crisis Manager provides overall guidance to the Public Information Officer and approves all news releases prior to distribution.

#### **4.8 Emergency Facilities and Equipment**

Emergency facilities, alarm and warning systems, and equipment are maintained to support the ERO in an emergency response. Emergency facilities include the C-300 Central Control Facility, Command Post, EOC, Alternate EOC, JIC, C-200 Headquarters, medical facilities, decontamination facilities, and other support facilities.

Emergency alarm and warning systems are maintained to provide monitoring of site or area conditions or to provide a warning of an emergency. These systems include the following:

- Off-site Public Warning System Siren
- Meteorological data is available at C-300 and the Mid-America Conversion Services facility
- Communication systems

Emergency equipment includes a broad spectrum of items including, but not limited to, the following:

- Fire-fighting equipment/vehicles
- Ambulances
- Incident command vehicles, radios, and communications equipment
- Decontamination equipment
- Personnel and environmental monitoring equipment
- Spill response equipment
- Traffic control (e.g., traffic barriers)
- Computers and information management equipment

#### **4.9 Program Administration**

The D&R Contractor is responsible for managing the EM program at the Paducah Site, including the direction and control of emergency responses, as well as managing and providing EM support systems for the Paducah Site. These systems include the ERO, EOC, and emergency notification and reporting activities.

The EM organization is responsible for maintaining and updating the EP and distributes the EP to ensure that groups with responsibilities for response functions are included in the distribution.

The ISSC receives EM services from the D&R contractor. For facilities managed by the ISSC, emergency planning and implementation activities are the responsibility of the respective facility manager with assistance and planning coordination by the Environment, Safety, and Health Manager.

Though the ISSC performs some EM activities independently (e.g., creation of EAPs, performance of the AHS, etc.), all actions are coordinated through the D&R Contractor and integrated into the site EM program. ISSC-ESH-PL-003, *Emergency Management Integration Plan*, describes the ISSC EM program at a detailed level and, together with the main body of CP2-EP-1000, satisfies the requirements of DOE O 151.1D.

## 4.10 Training

All personnel working at the Paducah Site are required to complete General Employee Training every two years and Consolidated Annual Training. Included in this training is information relating to warning sirens, horns, and lights used to alert personnel of emergency situations and the immediate protective actions to take. Alarms taught in this training include the following:

- Emergency Alert Signal-hi-low standard alerting tones. Emergency conditions exist on site. Listen for announcement to follow on the public address (PA) system.
- Criticality Accident Alarm Signal-high-pitched air whistle or electronic horn. Radiation emergency; rapidly leave the area, stay away from affected evacuate building and report to the designated Criticality Accident Alarm System assembly point.
- Take Cover Warning-four short blasts on plant horns. Tornado warning; take cover immediately in the nearest take cover area.
- Evacuation Signal-continuous blast on plant horns. Possible emergency conditions exist; evacuate to designated evacuation point or follow the instructions from the PSS over the plant PA system.
- Cascade Building Local Alarm-three long blasts on cascade building horns. Contact designated area control room immediately for specific instructions.
- Building Evacuation Alarms for C-100, C-360, C-710 and C-720-continuous (10 second) blast on local building horns. Evacuate immediately to designated assembly point or follow the instructions from the PSS over the plant PA system.
- Public Warning Sirens-continuous, high pitched off-site whistle. Condition on-site may affect local community. Personnel on DOE Reservation or in the West Kentucky Wildlife Management Area should evacuate the area immediately.

Regular drills are conducted to familiarize site workers with protective action implementation. Individuals assigned to a Paducah ERO position are required to complete initial training required for the position prior to being placed on the ERO cadre. This training is a combination of required reading with associated written tests and position familiarization/orientation. Once initial training has been completed, proficiency in accomplishing the duties of the assigned position is maintained through annual refresher training and participation in drills and exercises. Emergency preparedness training is covered by general and specific industry standards.

## 4.11 Drills and Exercises

Response capability is maintained through a site drill and exercise program. Emergency drills and exercises are conducted in accordance with CP2-EP-1000. These drills may be held independently at the project or facility level or in conjunction with Paducah site-level drills and exercises.

## 5.0 HAZARD SURVEY RESULTS

As a result of the qualitative survey, facilities can be grouped according to their emergency potential. Those facilities that have hazardous materials that cannot be excluded from analysis based on applicable criteria require an EPHA and are subject to the EM Hazardous Material Program and EMCP requirements of DOE O 151.1D. Facilities that do not have significant quantities of hazardous materials (i.e., screen out) are not required to develop a quantitative EPHA and are subject only to EM Core Program requirements. All ISSC materials met at least one of the screening criteria below, as indicated by an asterisk (\*), and therefore an EPHA is not required.

- Criterion 1: Materials used in the same form, quantity and concentration as a product packaged for distribution and use by general public.
- Criterion 2: Materials that because of their physical form or other plausible dispersal mechanisms, do not present an airborne hazard. This includes (1) solids in a form with particle size >10 microns (2); solid materials with no plausible release scenario to reduce the material to particles <10 microns mechanism; (3) liquids with a vapor pressure or partial pressure <10 mmHg at 25°C; and (4) aqueous solutions where the hazardous component is non-volatile.
- Criterion 3: Chemicals with a Health Hazard Rating 0, 1, and 2.
- Criterion 4: Materials with a GHS Acute Toxicity Hazard Category of 3, 4, or 5.
- Criterion 5: Solid or liquid material with any GHS Corrosion/Irritation Hazard Category.
- Criterion 6: Gaseous materials with a GHS Corrosion/Irritation Category of 2 or 3.
- Criterion 7: Materials stored and used only in small quantities (lab scale quantity), defined as “storage in which the containers are designed to be easily and safely manipulated by one person”.
- Criterion 8: Simple asphyxiants and cryogenic material.
- Criterion 9: Fuel oil and gases (e.g., petroleum, propane, etc.) are excluded from the definition of hazardous materials.

The All Hazards Survey results for ISSC facilities are presented in Table 6. Additional facility specific information is documented on Hazard Survey Worksheets, which are available for review. A single site THIRA has been performed by the D&R Contractor.

Table 6. Hazardous Chemical Survey Summary

Facility	Primary Screening	Secondary Screening									
		Cr. 1	Cr. 2	Cr. 3	Cr. 4	Cr. 5	Cr. 6	Cr. 7	Cr.8	Cr.9	Other
C-102-T02	*										
C-102-T03	*										
C-103		*								*	
C-104		*								*	
C-720-M-T01		*									
C-720-M-T02	*										
C-725		*									
C-732		*		*							
C-743-T14	*										
C-750		*	*	*						*	
C-752-B		*								*	
C-752-B-T01	*										
C-754	*										
C-755-A		*	*							*	
C-755-A1			*								
C-755-B	*			*							
C-755-C	*	*									
C-755-D	*										
C-755-J	*	*									
C-755-K	*										
C-755-L	*										
C-755-M	*										
C-755-M1	*										
C-755-M2	*	*		*							
C-755-M3	*										
C-755-M4	*										
C-755-Q	*										
C-755-S	*										
C-755-T	*										
C-755-T05	*										
C-755-T08B	*										
C-755-T13	*										
C-755-T14		*									
C-755-T17A	*										
C-755-T18	*										
C-755-T19		*									
C-755-T20		*									
C-755-T21	*										
C-755-T22A											*
C-755-T23	*										
C-755-T26	*										
C-755-T27	*										
C-755-T28	*										
C-755-U		*		*						*	
C-755-V		*		*							
C-755-X	*										
C-755-Y		*		*						*	
C-755-Z	*										
C-802	*										

**Table 6. Hazardous Chemical Survey Summary (continued)**

Facility	Primary Screening	Secondary Screening									
		Cr. 1	Cr. 2	Cr. 3	Cr. 4	Cr. 5	Cr. 6	Cr. 7	Cr.8	Cr.9	Other
C-802-A		*								*	
C-802-B		*								*	
General Areas	*										
Parking Lots		*								*	
Underground Storm Shelters	*										

## 6.0 REFERENCES

- 10 CFR 30, Parts 30.11-30.19, *Rules of General Applicability to Domestic Licensing of Byproduct Material*
- 29 CFR 1910.38, *Emergency Action Plans*
- 29 CFR 1910.165, *Employee Alarm Systems*
- 40 CFR 100-129, *Water Programs*
- 40 CFR 141 and 142, *National Primary Drinking Water Regulations*
- 40 CFR 300, *National Oil and Hazardous Substances Pollution Contingency Plan*
- 40 CFR 302, *Designation, Reportable Quantities, and Notification*
- 40 CFR 355, *Emergency Planning and Notification*
- 41 CFR 102-74.235-260, *Occupant Emergency Program*
- 41 CFR 102.74-360, *Accident and Fire Prevention Responsibilities*
- 44 CFR 302, *Civil Defense – State and Local Emergency Management Assistance Program*
- 49 CFR 172.600 Series and 49 CFR 172.700 Series, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans*
- DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23. Nuclear Safety Analysis Reports*
- DOE G 151.1-1A, *Emergency Management Fundamental and the Operational Emergency Base Program*
- DOE O 151.1D, *Comprehensive Emergency Management System*
- DOE G 151.1-2, *Technical Planning Basis*

- SST.PHS-C752B-0001/R0, *Preliminary Hazard Screening for the C-752-B Fuel Dispensing Station, Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- SST.PHS-C743-0002/R1, *Preliminary Hazard Screening for the C-743 Office Trailers, Paducah Gaseous Diffusion Plant, Paducah, Kentucky*
- SST.FPA-0001/R0, *Fire Protection Assessment for the Fuel Dispensing Facility, C-752-B, Paducah Gaseous Diffusion Plant*