



## UPF PROJECT PROCEDURE

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Prepared by:

Justin Krey  
UPF ES&H Field Representative

Approved by:

Edward Kelley,  
BNI UPF Manager of ES&H

04/15/16

Date

Gary Hagan,  
UPF Manager of ES&H

04/15/16

Date

Concurrence by:

Lynn Nolan,  
UPF Manager of Construction

04/15/16

Date

James W. Sowers,  
UPF Quality Assurance Manager

04/15/16

Date

04/21/16

Effective Date

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Name: Terry C. Lindell Date: 04/15/16

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UPF Hazard Communication Program
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### Revision History

Revision	Reason/Description of Change
4	This revision is a complete re-write, therefore no revision bars are shown. This revision further establishes requirements for purchasing, managing, and using chemicals.
3	Adopted initial issue from Bechtel Core Process 202 at its current revision 3.

## UPF Hazard Communication Program

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## UPF Hazard Communication Program

**1.0 PURPOSE**

The purpose of this procedure is to provide direction and guidance to manage hazardous chemicals used at the Uranium Production Facility (UPF) construction sites and support areas through employee training, container labeling, and use of safety data sheets (SDS).

**2.0 GENERAL****2.1 Applicability**

This procedure is applicable to UPF construction site personnel, subcontractors, vendors, and visitors during the course of the project. This Hazard Communication (HazCom) Program procedure addresses chemicals and materials present in the workplace that employees may be exposed to under normal conditions of use or in a foreseeable emergency. Materials excluded from this HazCom procedure include the following:

- Wood or wood products, including lumber, that will not be processed, where the chemical manufacturer or importer can establish that the only hazard the product poses to employees is the potential for flammability or combustibility (wood or wood products treated with a hazardous chemical covered by this standard and wood that may be subsequently sawed or cut, generating dust, are not exempted).
- Ionizing and non-ionizing radiation.

**NOTE:** If radioactive material presents hazards, such as chemical toxicity or a physical hazard (corrosive, flammable, compressed gas), the requirements of the HazCom program apply to the chemical hazards of the radioactive material.

**2.2 Acronyms**

<b>CM</b>	Construction Manager
<b>CNS</b>	Consolidated Nuclear Security, LLC
<b>ES&amp;H</b>	Environmental Safety and Health
<b>FSM</b>	Field Safety Manager
<b>FSR</b>	Field Safety Representative
<b>MSDS</b>	Material Safety Data Sheet
<b>SDS</b>	Safety Data Sheet
<b>Y-12</b>	Y-12 National Security Complex

**2.3 Definitions**

<b>Carcinogen</b>	For the purpose of this procedure, a carcinogen is defined as a substance or a mixture of substances that induce cancer or increase its incidence.
<b>Chemical</b>	Any substance or mixture of substances.
<b>Container</b>	Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. Pipes or piping systems, engines, fuel tanks, or other operating systems in a vehicle are not considered to be containers.

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<b>Exposure</b>	An incident where an employee is subjected to a hazardous chemical in the course of employment through any route of entry (e.g. inhalation, ingestion, skin absorption); includes potential exposure.
<b>Foreseeable Emergency</b>	Any potential occurrence, such as, but not limited to, equipment failure, rupture of containers, or failure to control equipment that could result in an uncontrolled release of a hazardous chemical into the workplace.
<b>Hazard Category</b>	The division of criteria within each hazard class (e.g., oral acute toxicity and flammable liquids include four hazard categories). These categories compare hazard severity within a hazard class and are not be taken as a comparison of hazard categories more generally.
<b>Hazardous Chemical</b>	Any chemical that is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.
<b>Hazardous Material Inventory</b>	A list of SDSs for chemicals, products, or materials maintained by a UPF subcontractor, or their lower-tier subcontractors, that are planned to be used for work.
<b>Health Hazard</b>	A chemical that is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure), skin corrosion or irritation, serious eye damage or eye irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity (single or repeated exposure), or aspiration hazard.
<b>Label</b>	An appropriate group of written, printed, or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical or the outside packaging.
<b>Label Elements</b>	The specified pictogram, hazard statement, signal word, and precautionary statement for each hazard class and category.
<b>Material/Product Requestor</b>	The Product/Material Requestor is any worker (UPF direct hire or subcontractor) who works to obtain a product/material from an outside source.
<b>Mixture</b>	A combination or solution composed of two or more substances in which the substances do not react.
<b>Physical Hazard</b>	A chemical classified as posing one of the following hazardous effects: explosive, flammable (gases, aerosols, liquids, or solids), oxidizer (liquid, solid, or gas), self-reactive, pyrophoric (liquid or solid), self-heating, organic peroxide, corrosive to metal, gas under pressure, or in contact with water emits flammable gas.

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**Product Identifier** The name or number used for a hazardous chemical on a label or in the SDS that provides a unique means by which a user can identify the chemical.

**Material Safety Data Sheet (MSDS)** Information prepared by the manufacturer of a product or material that provides information on the safe use, handling, and potential hazards of the product or material. (See SDS Definition).

**NOTE:** MSDSs currently on file are to be gradually replaced with the new SDS format. As such, both MSDSs and SDSs are present in the Y-12 system to date. For the purpose of this procedure, the term Safety Data Sheet applies to both the Material Safety Data Sheet and the Safety Data Sheet.

**Safety Data Sheet** Information prepared by the manufacturer of a product or material that provides information on the safe use, handling, and potential hazards of the product or material. SDS information can be obtained from the manufacturer or supplier of the product/material.

**Safety Data Sheet Database** A centralized and electronic storage location for evaluated SDSs available through CNS at the Y-12 National Security Complex.

**Simple Asphyxiant** A substance or mixture that displaces oxygen in the ambient atmosphere and can, thus, cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.

**Warning** A statement, sign, picture, or symbol that tells the user what could happen if the product is used in certain ways.

**Worker** For the purposes of this procedure, a worker is an individual who may be potentially exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

### 3.0 RESPONSIBILITIES

A designee may perform responsibilities defined in this procedure for a named position.

#### 3.1 Construction Manager (CM)

The CM has the overall responsibility for ensuring the implementation of this procedure, ensuring that all project personnel actively participate; and provides worker support, facilities, and other resources necessary to effectively carry out this procedure.

#### 3.2 Field Safety Manager (FSM)

The FSM, in conjunction with the CM, is responsible for implementing and administering the procedure, providing periodic monitoring of the procurement, storage, and use of hazardous chemicals.

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**3.3 Field Safety Representative (FSR)**

The FSR has the responsibility of compliance oversight with the procedure through periodic field inspections and is responsible for supplying technical advice and interpretation of the environmental, safety, and health codes included in the procedure.

**3.4 Supervision**

Supervision is responsible for the implementing requirements identified in this procedure on the UPF construction site and support areas including the following:

- Ensure any chemical in use exactly corresponds to the approved SDS in the SDS database.
- Assure personnel are trained before handling hazardous chemicals.
- Confirm hazardous chemicals used in their area of responsibility are safely handled, properly labeled, and stored in accordance with applicable procedures
- Provide ready access of SDSs to workers.
- Work with ES&H staff to identify chemical usage that potentially requires additional evaluation and controls.

**3.5 Subcontract Technical Representative (STR)**

The STR is responsible for being familiar with this procedure and specific individual responsibilities regarding implementation as well as providing this procedure to subcontractors working at the UPF construction site and support areas with directions to follow the procedure.

Collecting and submitting monthly subcontractor hazardous material inventory report.

**3.6 Subcontractors**

Subcontractors shall maintain a listing of specific hazardous chemicals/products (i.e., SDSs) received and used by themselves and their sub-tier contractors, providing a copy of this listing initially and monthly thereafter to the STR.

- Ensure their direct work and work by their sub-tier contractors is performed in accordance with this procedure.
- Assure personnel are trained before handling hazardous chemicals.
- Provide ready access to SDSs for their workers and sub-tier contractors.

**3.7 Product/Material Requestor**

The product/material requestor shall evaluate product/material use before requesting any new product/material. Evaluate eliminating purchase of hazardous products/materials or substitution with non-hazardous product/material before purchase. Coordinate with UPF ES&H on the purchase and receipt of hazardous chemicals/products

**3.8 Worker**

The worker is responsible for understanding and complying with this procedure as it applies to the work that individual performs. The worker shall ensure any chemical in use corresponds to the approved SDS in the SDS database and report problems or concerns to their supervisor.

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**4.0 PROCEDURE****4.1 Hazardous Chemical Listing**

<b>Actionee</b>	<b>Action</b>
<b>Supervision/ Subcontractor</b>	<p>(a) Evaluate work areas and (or) activities and identify the hazardous chemicals (liquid, solid, or gas) to which workers are potentially exposed (e.g., list of chemicals contained in work package). Ensure any chemical in use corresponds to the approved SDS in the SDS database.</p> <p><b>NOTE:</b> To accomplish this, ensure the product name exactly matches that on the approved SDS and either the manufacturer matches that on the approved SDS or the product code listed on the chemical in use matches that on the approved SDS.</p>
<b>Subcontractor</b>	<p>(b) From this evaluation, develop and maintain the hazardous chemical list for each area and (or) activity.</p> <p><b>NOTE:</b> Repeat this activity when a new chemical is introduced to the work area. Consult ES&amp;H for assistance in identifying and evaluating personnel exposure to hazardous chemicals.</p> <p>(c) Inform workers of the availability of the list.</p> <p>(d) Ensure that an evaluation is completed for all hazardous chemicals synthesized, blended, produced as by-products, or manufactured in the workplace. If one has not been performed, contact ES&amp;H.</p> <p>(e) Submit the Subcontractor Hazardous Materials Inventory Report (UCN 21445) to UPF STR on a monthly basis.</p>
<b>ES&amp;H</b>	<p>(f) Upon request, assist in evaluating hazardous chemicals used, synthesized, blended, produced as by-products, or manufactured in the workplace.</p>
<b>Worker</b>	<p>(g) Consult supervision for information about hazardous chemicals in the work area.</p> <p>(h) Safely handle, use, store, and dispose of all hazardous chemicals.</p>

**4.2 Safety Data Sheets / Material Safety Data Sheets**

The SDS provides detailed hazard information for chemicals purchased from the manufacturer and chemicals produced as byproducts or manufactured in the workplace. SDSs are accessible by either hard copy (obtained from ES&H or Subcontractor) or electronically through the Y-12 SDS database available through the Y-12 intranet (<https://ctsapp3.y12.doe.gov/tools/ih/msds/index.php>).

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Actionee	Action
<b>Supervision/ Subcontractor</b>	<p>(a) Ensure that SDSs for hazardous chemicals used in the work areas are obtained and are readily available to workers for review prior to commencing work with such chemicals.</p> <p><b>NOTE:</b> To accomplish this, ensure that the product name exactly matches that on the approved SDS and either the manufacturer matches that on the approved SDS or the product code listed on the chemical in use matches that on the approved SDS.</p> <p>(b) Ensure that workers can obtain an SDS in a timely manner.</p> <p>(c) <b>IF</b> an SDS is unavailable, <b>THEN</b> contact ES&amp;H for assistance in obtaining one.</p>
<b>ES&amp;H</b>	<p>(d) Provide SDSs to workers upon request.</p> <p>(e) Assist with obtaining SDSs from chemical manufacturers as needed.</p>

### 4.3 Labeling of Hazardous Materials

The chemical manufacturer, importer, or distributor is required to ensure that each container of hazardous chemical is labeled, tagged, or marked prior to distributing.

Supervision/subcontractors are to verify container labels for hazardous chemicals, prior to use, to ensure they are labeled in accordance with Appendix A, "Container Labeling Instructions." The exclusions for labeling requirements are detailed in the "Scope" section of this procedure.

### 4.4 Product/Material Procurement

Actionee	Action
<b>Requestor/ Subcontractor</b>	<p>(a) Identify need and decide on source and quantity of material to be obtained.</p> <p>(b) Review and determine if the product/material being considered contains any of the components on the <i>UPF Restricted Materials List</i> (ML-SH-801768-A004).</p> <ul style="list-style-type: none"> <li>• If the product/material contains a restricted component on the list, identify a substitute product/material that does not contain any material listed.</li> <li>• If infeasible contact ES&amp;H for purchase authorization.</li> </ul>

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Actionee	Action
	<p>(c) Review the SDS database to determine if the product/material is already approved for use at UPF or if another existing approved product/material, having the same SDS, can be utilized for the activity.</p> <p><b>NOTE:</b> If an SDS is already listed in the system for a specific chemical (e.g., gasoline, chlorine bleach), the specific chemical may be purchased from more than one supplier or manufacturer.</p> <p><b>NOTE:</b> For the procurement of products where the SDS is 5 years old or older, request a new SDS for that product from the manufacturer/shipper.</p> <p>(d) <b>IF</b> an SDS is available in the SDS database <b>AND</b> the chemical is approved for use, order the product/material in accordance with procurement procedures.</p> <p>(e) <b>IF</b> an SDS is <b>NOT</b> available in the SDS database, <b>THEN</b> contact the vendor and request that the SDS be sent.</p> <p>(f) Compare the chemicals listed on the received SDS to determine if the product/material being considered contains any of the components on the <i>UPF Restricted Materials List</i> (ML-SH-801768-A004).</p> <ul style="list-style-type: none"> <li>• If the product/material contains a restricted component on the list, identify a substitute product/material that does not contain any material listed.</li> <li>• If item does not contain a construction site restricted material, then send the SDS to Y-12 for evaluation and inclusion in the SDS database.</li> </ul>
Requester/ Subcontractor	<p>(g) When notified that product/material is approved for use:</p> <ol style="list-style-type: none"> <li>1. Verify the SDS is available in the SDS database.</li> <li>2. Once the SDS is available in the SDS database, place the order for the product/material in accordance with procurement procedures.</li> </ol>

## 4.5 Receipt of Hazardous Product/Material

Actionee	Action
Receiving/ Subcontractor	<p>(a) Inspect packaging to ensure integrity and compliance with applicable labeling requirements.</p> <p>(b) Review the SDS for completeness and verify the SDS for the product/material is available in the SDS database. Ensure any chemical received exactly corresponds to the approved SDS in the SDS database.</p>

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Actionee	Action
	<p>(c) If the SDS for the product/material is available in the SDS database and approved for site use, proceed with delivery process.</p> <p>(d) <b>IF</b> the SDS for the product/material is <b>NOT</b> available, <b>HOLD</b> the product/material and contact Requestor to initiate an evaluation of the product/material.</p>
<b>ES&amp;H</b>	(e) Evaluate the submitted SDS and notify Receiving of results.
<b>Receiving</b>	<p>(f) If the product/material is not approved for site use, return the product/material to supplier in accordance with material handling procedures.</p> <p>(g) If received product/material is approved for site use, proceed with delivery process.</p>
<b>Supervision/ Subcontractor</b>	(h) Ensure SDS(s) is readily available (i.e., within a work shift) to employees in the work area <b>prior to</b> allowing use of the hazardous material.

## 4.6 Hazardous Materials Use

Actionee	Action
<b>All</b>	<p>(a) Check the hazardous material for appropriate labeling. Ensure any chemical in use exactly corresponds to the approved SDS in the SDS database.</p> <p>(b) If the hazardous materials are not labeled properly or transferred from their original containers, then notify supervision for instructions.</p> <p>(c) Label in accordance with instructions in Appendix A.</p> <p>(d) Read the label, SDS, etc., and handle and use the hazardous material in accordance with the SDS and subsequent evaluations.</p> <p><b>NOTE:</b> The controls for the use of hazardous chemicals associated with non-routine tasks are implemented through work control and hazard analysis processes and are communicated to the workers by the responsible supervisor(s) prior to initiating work.</p>
<b>Supervision/ Subcontractor</b>	<p>(e) Ensure that all materials are stored as indicated on the associated SDS.</p> <p>(f) If hazardous material is transferred to another area, notify supervision for that area.</p> <p>(g) Ensure when self-performed or subcontracted activities are completed, the hazardous material inventories are properly dispositioned and ES&amp;H is notified.</p>

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#### 4.7 Storage of Hazardous Materials

Store hazardous materials in a manner that adequately protects both human health and the environment from unintended exposure to the primary hazards associated with the materials. These primary hazards may include explosions, fire, reactivity, toxicity, or any combination of these hazards.

Storage areas for hazardous materials are reviewed and approved by ES&H prior to receipt of the materials at the site. Criteria for the location of suitable storage areas include those listed below:

- Located away from high traffic areas on site and reasonably protected from the potential for vehicle/equipment damage by guardrails, fences, or other structural controls.
- Provided with a means to control access to the materials so that only authorized (i.e., trained) personnel may remove and use the materials.
- Located away from fence line locations immediately adjacent to environmentally sensitive resources (e.g., wetlands, streams).
- Provided with adequate secondary containment in the form of an impermeable surface surrounded by curbing or equivalent means to minimize the release of accidentally spilled product to the environment.
- Provided with a means of segregating combustible and flammable materials from oxidizing agents and other sources of ignition.
- Provided with a means of preventing water-reactive and pyrophoric materials from coming in contact with accumulated water.
- Protected from temperature extremes and inclement weather when they could affect the properties of the hazardous material.

ES&H may review and provide additional guidance information on the location, design, and maintenance of hazardous materials storage areas as contained in government regulations, permits, and (or) the approved environmental control plans.

#### 4.8 Employee Information and Training

ES&H develops the technical information to be presented, and the UPF training organization develops specific HazCom training modules for employees, subcontractors, and visitors.

Initial information and training regarding the elements of the Hazard Communication Program, in conjunction with other site-specific training, is provided during new employee orientation.

Training elements include the following:

- Information on the categories of hazardous materials
- The requirements of 29 CFR 1926.59
- Operations where hazardous materials are present
- Location and availability of the HazCom Program document
- Physical and health hazards of the materials present
- Methods and observations to detect a release of a hazardous material
- Information on the global labeling system and SDS

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- Measures workers can take to protect themselves, including work practices, emergency procedures, and personal protective equipment

#### 4.8.1 Continuing Hazard Communication Training

- Hazard Communication training is provided for new workers assigned to a work area where potential exposure to hazardous materials exists under normal working conditions or in a foreseeable emergency.
- Thereafter, hazard awareness is maintained through follow-up briefings, toolbox meetings, and pre-job briefings. Focus at these briefings is to address identified new hazards or information on task-specific hazards, as communicated through the work control process.

## 5.0 RECORDS

All records generated as a result of this procedure are maintained in accordance with Y15-101, *Records and Controlled Documents*, and Y15-95-800, *UPF Document Management*.

Records generated during the performance of this procedure include:

- Safety Data Sheets (*submitted to Y-12 SDS database*)
- ML-SH-801768-A004, *UPF Restricted Materials List*
- UCN 21445, *Subcontractor Hazardous Materials Inventory Report*

## 6.0 REFERENCES

### 6.1 Source References

- 10 CFR 851, Worker Safety and Health Program
- 29 CFR 1926.59, Hazard Communication
- ACGIH Threshold Limit Values for Chemical Substances and Physical Agents / Biological Exposure Indices (most recent edition).
- Bechtel Core Process 202, *Hazard Communication*

### 6.2 Interfacing References

- UPF-CP-225, Compressed Gas Cylinders, Liquefied Petroleum Gas and Liquefied Inert Gases

## 7.0 EXHIBITS / APPENDICES / FIGURES

### 7.1 Appendix A – Container Labeling Instructions

## UPF Hazard Communication Program

## Appendix A Container Labeling Instructions

### A.1 Manufacturer's Requirements

The Occupational Safety and Health Administration requires all chemical manufacturers, importers, and distributors ensure that each container of hazardous chemicals leaving their facilities is labeled, tagged, or marked with the following: product identifier; signal word; hazard statement(s); pictogram(s); precautionary statement(s); name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

**NOTE:** Container labeling, as provided by the chemical manufacturer, distributor, or importer, is recommended to be used if available. If there are any questions about the information on the label or in the SDS, contact ES&H for guidance. If the original label is defaced, removed, or is illegible, replace with a new label that has the appropriate information from the manufacturers' SDS.

### A.2 Secondary/Transfer Container Requirements

The Globally Harmonized System is scheduled to be in full effect by December 1, 2015. Containers, including chemical containers received from the manufacturer, are to be labeled as required by the Global Harmonization standard.

A secondary container label is to meet the requirements of the Global Harmonization System. Labels shall have the Product Identifier and words, pictures, symbols, or a combination thereof, that can provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

## Components Of A GHS-Compliant Label

product identifier	<b>AMMONIA</b>	 <p style="font-size: small; margin-top: 10px;">See Safety Data Sheet (SDS) for further details regarding safe use of this product.</p>	pictograms
signal word	<b>DANGER</b>		
hazard statement	<b>TOXIC IF INGESTED</b>		
precautionary statements	<p style="font-size: x-small; margin: 0;">Wash hands thoroughly after handling. Keep container tightly closed when not in use. Keep away from heat, sparks and open flames - may explode when exposed to high heat. Use in an open area that is well-ventilated. Breathing in ammonia is irritating and corrosive. Wear protective gloves and safety goggles to prevent burns and irritation.</p> <p style="font-size: x-small; margin: 0;">If swallowed: Immediately call Poison Control or doctor/physician. Drink water or milk to dilute ammonia.</p>		
supplier information	<b>ABC Chemicals - 123 Main Street - Cincinnati, OH - www.abcchem.com - 800-733-5252</b>		

<https://www.general-data.com/ghs-labeling-software>