Categorically Excluded from USQD/USQ Process: Yes □ No ☒ Cat Ex USQD/Screening No: N/A
USQD Screening/USQD Required: Yes □ No ☒ USQD Screening/USQD No: FBP-12-SCN-00727

USE CATEGORY: INFORMATION USE
EFFECTIVE DATE: 9/05/12
5 YEAR PERIODIC REVIEW DATE: 8/27/17

Level 2  Administrative Procedure

RECORD OF ISSUE/REVISION

Former USEC Doc #: XP2-EW-EN1030

<table>
<thead>
<tr>
<th>Revision/Change</th>
<th>Description of Changes</th>
<th>Affected Pages</th>
<th>Date Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Initial FBP Release</td>
<td>All</td>
<td>2/06/11</td>
</tr>
<tr>
<td>1</td>
<td>Minor revision; conversion of bluesheeted former USEC procedure to FBP template; performed periodic review.</td>
<td>All</td>
<td>5/14/12</td>
</tr>
<tr>
<td>2</td>
<td>Revision to remove reference to FBP-IH-PRO-00085 in Step 6.1.4; removed “quarterly” from Step 6.1.4.</td>
<td>4, 5, 10</td>
<td>8/27/12</td>
</tr>
</tbody>
</table>
CONTENTS

1.0 PURPOSE ........................................................................................................................................... 3
2.0 SCOPE AND APPLICABILITY ........................................................................................................3
3.0 GENERAL INFORMATION .............................................................................................................4
4.0 USE REFERENCES ........................................................................................................................... 4
5.0 RESPONSIBILITIES .......................................................................................................................... 4
  5.1 Occupational Safety and Health (OS&H) Manager ............................................................... 4
  5.2 Occupational Safety and Health Professional ......................................................................... 4
  5.3 Supervisor/Contract Technical Representative (CTR) ......................................................... 5
  5.4 Employee ..................................................................................................................................... 5
  5.5 Occupational Physician ......................................................................................................... 6
6.0 ACTIONS ........................................................................................................................................... 7
  6.1 Identification of Chemical Carcinogens ................................................................................ 7
  6.2 Education of Employees ........................................................................................................ 7
  6.3 Protection from Chemical Carcinogen Exposure in the Workplace ..................................... 8
7.0 RECORDS ........................................................................................................................................ 10
  7.1 Records Generated ...................................................................................................................... 10
  7.2 Requirements .............................................................................................................................. 10
8.0 DEFINITIONS / ACRONYMS ......................................................................................................... 10
  8.1 Definitions ................................................................................................................................... 10
  8.2 Acronyms ..................................................................................................................................... 11
9.0 SOURCE REFERENCES ..................................................................................................................... 11
Attachment A CARCINOGEN CONTROL PLAN ........................................................................ 12
1.0 PURPOSE

This procedure provides instructions on protecting employees by eliminating occupational exposures to confirmed and suspected chemical carcinogens.

2.0 SCOPE AND APPLICABILITY

2.1 This Level 2 procedure is applicable to all non-radioactive materials that contain at least one carcinogen in a concentration greater than or equal to 0.1% by weight or volume. This threshold concentration of 0.1% may be superseded by a different level when it is indicated by an applicable regulation (e.g., OSHA substance-specific standard).

2.2 The chemical substances covered by this procedure as carcinogens are identified as follows:

- Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910 Subpart Z (Standards):
  - Carcinogens

- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs):
  - Group A1 - Confirmed Human Carcinogens
  - Group A2 - Suspected Human Carcinogens

- International Agency for Research on Cancer (IARC) (Monographs):
  - Group 1 - Carcinogenic to Humans
  - Group 2A - Probably Carcinogenic to Humans
  - Group 2B - Possibly Carcinogenic to Humans (applicable only to those substances having at least limited evidence in humans when sufficient evidence in animals is lacking)

- National Toxicology Program (NTP) (Annual Report on Carcinogens):
  - Group K - Known To Be A Human Carcinogen
  - Group R - Reasonably Anticipated To Be A Human Carcinogen

2.3 This procedure applies to Fluor-B&W Portsmouth (FBP) and staff augmentation personnel at the Portsmouth Gaseous Diffusion Plant (PORTS).
Exceptions:

- Control of waste material and samples of unknown composition are not included within the scope of this procedure.

- Control of asbestos-containing materials is addressed in FBP-IH-PRO-00036, *Asbestos Control*.

- Control of industrially-generated beryllium is addressed in FBP-IH-PDD-00005, *Chronic Beryllium Disease Prevention Program*.

- Control of lead-containing materials is addressed in FBP-IH-PDD-00002, *Lead Compliance Program Description*.

3.0 GENERAL INFORMATION

Whenever substitution with non-carcinogenic materials is not feasible, exposures are maintained within ACGIH Threshold Limit Values (TLVs), OSHA substance-specific Action Levels (ALs) and OSHA Permissible Exposure Limits (PELs).

4.0 USE REFERENCES

A. FBP-IH-PRO-00014, *Hazard Communication*

B. FBP-BS-PRO-00062, *Records Management Process*

5.0 RESPONSIBILITIES

5.1 Occupational Safety and Health (OS&H) Manager

5.1.1 Provides adequate resources to maintain an effective carcinogen control program.

5.1.2 Provides for evaluation of potential improvements to processes which could result in reduced usage and inventory levels of carcinogens.

5.2 Occupational Safety and Health Professional

5.2.1 Classifies applicable chemicals used at PORTS as carcinogens, according to this procedure.

5.2.2 Determines the need for FBP-IH-PRO-00051-F01, *Carcinogen Control Plan* (CCP).

5.2.3 Determines the type and frequency of periodic monitoring, reports results to supervision, and recommends exposure-control measures.
5.2.4 Assists Supervisors in the selection of appropriate control measures by completing Part II of FBP-IH-PRO-00051-F01.

5.2.5 Acts as consultant in matters related to storage, handling, spills, and disposal of carcinogens.

5.2.6 Assists Training in the development of appropriate educational and training materials.

5.2.7 Performs investigations of diagnosed or suspected occupational illnesses, as necessary.

5.3 Supervisor/Contract Technical Representative (CTR)

5.3.1 Contacts OS&H for identification, evaluation, and recommended control of materials that may be carcinogenic.

5.3.2 Replaces carcinogens with less hazardous, non-carcinogenic materials, whenever feasible.

5.3.3 Initiates preparation of FBP-IH-PRO-00501-F01, Carcinogen Control Plan, for any operation involving the use of carcinogenic materials that is likely to exceed applicable ALs, PELs or TLVs, as determined by OS&H.

5.3.4 Ensures applicable documents have been developed and completed.

5.3.5 Establishes and posts regulated areas where chemical carcinogens are used and controls access to these areas in accordance with the CCP.

5.3.6 Maintains record (FBP-IH-PRO-00051-F01) of personnel working in the regulated area.

5.3.7 Uses engineering controls and required safe work practices as the primary method to minimize exposure to carcinogens and to prevent the release of carcinogens into the working environment, as directed by OS&H.

5.3.8 Ensures all containers are properly labeled, identifying the presence of chemical carcinogens.

5.3.9 Ensures employees maintain good hygiene.

5.3.10 Performs chemical inventory in accord with FBP-IH-PRO-00014, Hazard Communication.

5.4 Employee

5.4.1 Observes all safety and health rules.

5.4.2 Notifies Supervisor immediately of potential overexposure to carcinogens, and WHEN certain conditions or practices may cause illness/injury.
5.5 Occupational Physician

5.5.1 Consults with OS&H in the development of adequate methods to detect exposures to carcinogenic agents.

5.5.2 Alerts OS&H of diagnosed or suspected occupational illnesses for follow-up investigations.
6.0 ACTIONS

6.1 Identification of Chemical Carcinogens

**Occupational Safety and Health Manager**

6.1.1 Classify PORTS carcinogens, according to Section 2.0 of this procedure.

**Supervisor**

6.1.2 Contact OS&H for identification, evaluation, and recommended control of materials that may be carcinogenic.

6.1.3 Implement the Carcinogen Control program within your respective organization by requiring employee compliance and providing adequate resources for evaluation of potential process improvements.

6.1.4 Perform inventory, identifying the quantities of chemical carcinogens that are kept in your area of responsibility, and submit hazardous material reports to the PORTS Hazardous Materials Specialist (HMS) in accordance with FBP-IH-PRO-00014, *Hazard Communication*.

**Employee**

6.1.5 Notify Supervisor immediately of potential overexposure to carcinogens, and WHEN certain conditions or practices may cause illness/injury.

**Occupational Physician**

6.1.6 Alert OS&H of any diagnosed or suspected occupational illness that may have resulted from exposure to a carcinogenic agent for follow-up investigation.

**Occupational Safety and Health Professional**

6.1.7 Perform investigations of diagnosed or suspected occupational illnesses, as necessary.

6.2 Education of Employees

**Supervisor/Contract Technical Representative**

6.2.1 Ensure that personnel successfully complete hazard communication training and any required substance-specific training, according to FBP-IH-PRO-00014, *Hazard Communication*, and applicable procedures/regulations.

6.2.2 Ensure that hazard communication is provided, according to FBP-IH-PRO-00051-F01, *Carcinogen Control Plan*, prior to work in an area or operation determined to require a CCP.
**Occupational Safety and Health Professional**

6.2.3 Assist Training in the development of appropriate educational and training materials.

**6.3 Protection from Chemical Carcinogen Exposure in the Workplace**

**Supervisor/Contract Technical Representative**

6.3.1 Ensure that carcinogens are used only in those situations where no less hazardous, equivalent substitute is feasible; and where the function they serve is essential.

**IF** a significant potential for occupational exposure is determined to exist **AND** more stringent controls than normal good work practices are required, **THEN** ensure safety plans; procedures; or experimental protocols describing the use of chemical carcinogens and the methods used to control exposures are developed.

**Occupational Safety and Health Professional**

6.3.2 Determine an operation's potential for occupational exposure and the need for a Carcinogen Control Plan (FBP-IH-PRO-00051-F01). This determination will be based on the quantity used, potential for exposure, types of controls, monitoring results, and the type of operation in which the material is used.

**Supervisor/Contract Technical Representative**

6.3.3 Initiate preparation of FBP-IH-PRO-00051-F01 for any operation involving the use of carcinogenic materials that is likely to exceed applicable ALs, PELs or TLVs, as determined by OS&H.

6.3.4 Ensure applicable documents have been developed and completed. Such documents may include work control packages; safety plans; standard operating procedures or experimental protocols associated with lab activities describing the use of chemical carcinogens and the methods used to control exposures; Job Hazard Analysis (JHA); and/or a documented pre-job briefing to inform employees of the health hazards and exposure control measures associated with the task.

**Occupational Safety and Health Professional**

6.3.5 Determine the type and frequency of periodic monitoring, report results to supervision, and recommend exposure control measures.

6.3.6 Assist Supervisor/CTR in the selection of appropriate control measures by completing Part II of FBP-IH-PRO-00051-F01, *Carcinogen Control Plan*. 
6.3.7 Act as consultant in matters related to storage, handling, spills, and disposal of carcinogens.

**Supervisor/Contract Technical Representative**

6.3.8 Ensure that a regulated area is established and posted, and that access is controlled, where exposure to a carcinogen above the applicable AL, PEL or TLV is likely, as determined by OS&H. The regulated area will depend on the quantity and physical properties of the material being used and on the operations being performed.

A. Ensure personnel working in the area are identified in the required FBP-IH-PRO-00051-F01.

B. Ensure visitors to the area are escorted by personnel authorized for entry under FBP-IH-PRO-00051-F01.

6.3.9 Ensure that placards, labels, or signs are used to identify regulated areas and containers of carcinogens in accordance with applicable procedures/regulations.

6.3.10 Follow guidelines listed below when non-carcinogenic substitutes cannot be used:

A. Use engineering controls and safe work practices as the primary methods to minimize exposure to carcinogens, and to prevent the release of carcinogens into the work environment.

B. Use administrative controls and personal protective equipment (PPE) as secondary and tertiary measures, respectively, when needed to reduce exposure to carcinogens.

C. Make provisions to ensure that contaminated air is not exhausted into work areas.

D. Utilize approved methods to contain and dispose of liquid and solid wastes that may contain carcinogens.

6.3.11 Ensure that good hygiene is facilitated through use of protective clothing; availability of showers and change rooms; bans on eating, drinking, smoking, and chewing in regulated areas; use of nonpermeable work surfaces to the extent practical; and good housekeeping practices.

**Occupational Physician**

6.3.12 Provide for appropriate medical surveillance, testing, and evaluation of personnel who are potentially exposed to carcinogens above applicable limits, when required by OSHA or DOE regulations.
7.0 RECORDS

7.1 Records Generated

FBP-IH-PRO-00051-F01, Carcinogen Control Plan

7.2 Requirements

Records generated or received as a result of performing this procedure shall be managed according to and FBP-BS-PRO-00062, Records Management Process.

8.0 DEFINITIONS / ACRONYMS

8.1 Definitions

A. Carcinogen – Any non-radioactive substance that can cause cancer in humans and/or animals (see Section 2.0).

B. Carcinogen Control Plan – Form FBP-IH-PRO-00051-F01; a written plan which sets forth procedures, equipment, personal protective equipment, and work practices to protect employees in a particular workplace. This term encompasses the “safety plans and standard operating procedures” that describe the use of chemical carcinogens, the procedures used to control exposure, emergency actions, and waste disposal. This plan is to be used in conjunction with current hazard communication programs and programs developed for control of toxic chemicals in laboratories.
8.2 Acronyms

A. ACGIH – American Conference of Governmental Industrial Hygienists
B. AL – Action Level
C. CTR – Contract Technical Representative
D. FBP - Fluor-B&W Portsmouth LLC
E. IARC – International Agency for Research on Cancer
F. NTP – National Toxicology Program
G. OS&H - Occupational Safety and Health
H. OSHA – Occupational Safety and Health Administration
I. PORTS - Portsmouth Gaseous Diffusion Plant
J. PEL – Permissible Exposure Limit
K. TLV – Threshold Limit Value

9.0 SOURCE REFERENCES

A. OSHA 29 CFR Subpart Z, Occupational Safety and Health Standards
B. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, latest edition
C. ACGIH, Guide to Occupational Exposure Values, latest edition
D. FBP-IH-PRO-00022, Job Hazard Analysis
D. FBP-IH-PRO-00036, Asbestos Control
D. FBP-NSE-PRO-00070, Work Control Process in Former Uranium Enrichment Facilities
E. International Agency for Research on Cancer, Monographs, latest edition
F. National Toxicology Program, Annual Report on Carcinogens, latest edition
H. FBP-ER-PL-00002, Chemical Hygiene Plan
Attachment A
CARCINOGEN CONTROL PLAN
Page 1 of 2

CARCINOGEN CONTROL PLAN

INTRODUCTION:
Part I is to be completed by the Supervisor. Occupational Safety and Health (OS&H) will complete Part II and return a copy of the approved plan to the appropriate organization or individual. The approved Carcinogen Control Plan is to be available to all concerned employees, at all times, until completion of the project or use of the carcinogen. Employees are to be trained prior to involvement with the chemical/ project. Assistance in preparing this Control Plan can be obtained from OS&H.

Part I: (To be completed by FLM)
Check item or fill in appropriate block as needed. If more space is required for an answer, please indicate and complete the discussion on a separate sheet and attach.

SUPERVISOR:
Name __________________________ Phone ________ Building ________

OPERATION/PROJECT: (Optional)
Title __________________________ Date __________

JOB DESCRIPTION:

JOB LOCATION: Building __________ Room Number __________
Other Information __________________

INVENTORY OF CARCINOGENS:
Carcinogen Used: __________________________
Quantity of Substance Used: ________________
OSHA Chemical Specific Standard: ___________
Standard Number: (If applicable) ___________

STORAGE LOCATION: Building __________ Room Number __________

PROCUREMENT OF CARCINOGENS:
Date Chemical Ordered ___________ Expected Date of Arrival __________
Quantity ___________ Period of Use: From ___________ to ___________

MODE OF POTENTIAL PERSONNEL EXPOSURE:
Please check when the following sections of the Safety Plan have been presented to each employee as a part of training.

[ ] Employee has completed General Employee Training (GET)
[ ] Employee has completed chemical category (carcinogen) or chemical specific (carcinogen) training
[ ] Personal Protective Equipment usage (such as gloves, respirator, face shield, suit, etc.) has been discussed.
[ ] Entry Restrictions discussed.
[ ] Cleanup and disposal requirements explained.
[ ] Use of Engineering Controls explained.
[ ] Emergency Procedures explained.
[ ] Applicable information in OSHA Chemical Specific Standard explained. (See attached)
Attachment A

Carcinogen Control Plan

Personal Protective Equipment Available, as Needed:

- Respirator, Full-Face
- Respirator, Half-Face
- Respirator, Air Supplied
- Combination Cartridge/Canister
- HEPA Cartridge/Canister
- Other

Engineering Controls:

- Exhaust Hood
- Vented System
- fume Mask

Entry Restrictions:

- Record maintained of all personnel working in regulated area.
- Appropriate carcinogen warning signs posted.
- Visitor registration and Logbook.
- Off-shift access controlled.

Personnel Authorized/Carcinogen Trained: (Name and Badge Number)

- 
- 
- 
- 

Additional Comments: (Optional)

Part II (To be completed by OSHA)

Hazard Rating of Chemical:

- Fire
- Health
- Special Hazard

Biological Monitoring Requirements:

- Blood
- Urinalysis
- Other

Area Air Monitoring Required:

- Quarterly
- Semi-Annually
- Other

Personnel Monitoring Required:

- Quarterly
- Semi-Annually
- Other

Environmental: (Smear or wipe sample)

- Quarterly
- Semi-Annually
- Other

Cleanup and Disposal Requirements: (Optional)

Overall Assessment of Carcinogen Control: (Optional)

Approval:

Industrial Hygienist: ______________________ Date: ______________________

FBP-IIH-PRO-00051-R01, Rev. 0 (09/12)