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CP3-EP-1007 **FRev. 2**	**TITLE**: Oil and Hazardous Materials Spills and Releases	Page **1** of **33**
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REVISION/CHANGE LOG

Revision/Change Letter	Description of Changes	Pages Affected	Date of Revision/Change
FR0	Bluesheet	All	10/18/17
FR1	Non-intent change bluesheet incorporated	All	01/04/18
FR1A	Remove GEN-003 requirements. Included DUF_6 NCSE Source Reference. Revised assay from 0.9% to 1.0%.	4, 9, 12, 16-20	04/16/18
FR2	General Revision. Partial implementation of CAS-101.	All	08/22/19

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides direction to United States (U.S.) Department of Energy (DOE) Paducah Site personnel to protect the employees, public, and environment when responding to incidental spills and releases of oil, hazardous materials (HAZMAT), hazardous wastes, and unknowns; and responding to over pressurized (bulging) drums.

1.2 Scope

This procedure applies to all HAZMAT emergencies at the DOE Paducah site.

2.0 REFERENCES

2.1 Use References

- 29 *CFR* Part 1910.120, *Hazardous Waste Operations and Emergency Response*
- *Contingency Plan Part G of the Hazardous Waste Management Permit Application for the U.S. Department of Energy, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (KY8-890-008-982)
- CP3-EP-1006, *Emergency Classification*
- CP3-EP-1010, *Termination and Recovery After Emergencies*
- CP3-EP-1011, *Medical Emergencies*
- CP3-EP-1012, *Off-site Emergency Response Assistance*
- CP3-EP-1014, *Emergency Operations Center*
- CP3-EP-1019, *Emergency Notification*
- CP3-ES-0003, *Environmental Incident Reporting*
- CP3-NS-1033, *Enrichment and Exempt Waste Verification*
- CP3-QA-3008, *Fact Finding*
- CP3-RP-1117, *Accidents and Emergencies*
- CP3-SM-0004, *Operation of 1000 and 2000 CFM Negative Air Machines*
- CP3-WM-1017, *Safe Handling and Opening of Sealed Containers*
- CP3-WM-1036, *Nuclear Criticality Safety Implementation Requirements for Handling and Storage of Fissile and Potentially Fissile Waste*
- CP3-WM-1037, *Generation and Temporary Storage of Waste Materials*
- CP3-WM-2110, *Waste Container Handling, Overpacking, and Transportation*
- CP4-OP-0428, *Field Decontamination*
- PAD-REG-1005, *Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site*
- U.S. Department of Energy, *Paducah Site Extremely Hazardous Substance Facility Plan*

2.2 Source References

- 40 *CFR* Part 300, Appendix E, Section 2.0, *National Response System*
- 40 *CFR* 302, *Designation, Reportable Quantities, and Notification*
- 49 *CFR* Subchapter C - Hazardous Materials Regulations, Part 171, *General Information, Regulations, and Definitions*
- 49 *CFR* Subchapter C - Hazardous Materials Regulations, Part 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements*
- Commonwealth of Kentucky, *Emergency Operations Plan*
- CP1-NS-3001, *Technical Safety Requirements for the Department of Energy Paducah Site Deactivation Project, Sections 5.6.1 and 5.7.3.4.*
- CP2-HS-2000, *Worker Safety and Health Program*
- CP3-EP-1000, *Personnel Accountability*
- DOE Order 151.1D, *Comprehensive Emergency Management System*
- NFPA 471, *Recommended Practice for Responding to Hazardous Materials Incidents*
- NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*
- U.S. Department of Health and Human Services, NIOSH, *Pocket Guide to Chemical Hazards*

3.0 COMMITMENTS

- CP1-NS-3001, *Technical Safety Requirements for the Department of Energy Paducah Site Deactivation Project,* Sections 5.6.1 and 5.7.3.4
- National Fire Protection Association 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*
- Nuclear Criticality Safety Approval (NCSA) CAS-021, *Operation and Shutdown of the Diffusion Cascade*
- NCSA GEN-009, *Operation and Maintenance of Negative Air Machines*
- NCSA GEN-043, *Operation and Maintenance of Autoclave Facility Process Piping, Evacuation Drums, and Relief Drums*
- Nuclear Criticality Safety Evaluation (NCSE) 088, *NCS Exemption of Items*
- NCSE 095, *Operation and Shutdown of the Diffusion Cascade*
- NCSE 113, *Cell Servicing*
- NCSE CAS-101, *Nuclear Criticality Safety Evaluation for 00 and 000 Cascade Facilities*
- NCSE-RM-SITE-0011, *Storage, Handling, Maintenance, and Inspection of UF_6 Cylinders*

4.0 RESPONSIBILITIES

4.1 Plant Shift Superintendent /Nuclear Facility Manager

4.1.1 Dispatches Incident Commander (IC) to the scene.

4.1.2 Supports IC with resources.

4.1.3 Determines when and how to implement Technical Safety Requirements (TSR) Section 5.7.3.4, *Conditions Outside TSR*.

4.1.4 Ensures any needed supplies, such as food and water are available in a protracted event.

4.2 Shift Coordinator

4.2.1 Makes and/or directs emergency notifications as directed by IC.

4.2.2 Makes emergency announcements over the ALL CALL system.

4.2.3 Initiates the call-in of a qualified Incident Safety Officer (ISO) through Send Word Now in the event of a non-incidental spill or release.

4.2.4 Maintains communications with IC.

4.3 Crisis Manager

4.3.1 Directs policy and decision making activities in the Emergency Operations Center (EOC) during an Operational Emergency (OE), Alert, or Site Area Emergency.

4.3.2 Reports directly to Plant Shift Superintendent (PSS)/IC and operates within the Incident Command System (ICS).

4.4 Incident Commander

4.4.1 Establishes the command post.

4.4.2 Responds and/or dispatches qualified individuals.

4.4.3 Makes all on-scene management decisions.

4.4.4 Develops an overall emergency response strategy.

4.4.5 Establishes Level I or Level II staging sectors, as needed.

4.4.6 Establishes the Incident Management System (IMS) at the emergency scene according to 29 *CFR* 1910.120, paragraph (q) including, but **NOT** limited to, the following responsibilities:

- Functions as the individual in charge and in control of the incident scene.
- Ensures monitoring is performed for hazardous substances and Immediately Dangerous to Life and Health (IDLH) conditions.
- Ensures the use of the appropriate personal protective equipment (PPE).
- Limits personnel access to the area of the incident scene.
- Ensures the availability of an adequate number of backup personnel for the entry team.
- Designates and/or appoints an ISO.
- Ensures equipment is available for decontaminating responders and equipment.

4.4.7 Determines if event should be categorized as an OE or further classified as an Alert or Site Area Emergency in accordance with CP3-EP-1006, *Emergency Classification*.

4.4.8 Determines the need to activate the EOC.

4.4.9 Obtains off-site assistance, if necessary.

4.4.10 Ensures all off-site responders have the appropriate dosimetry, if required.

4.4.11 Coordinates transition to termination and recovery.

4.4.12 Designates Officers.

4.5 Operations Officer

4.5.1 Reports directly to the IC.

4.5.2 Assesses the on-scene fire hazard or potential fire hazard and advises IC on the implementation of appropriate fire suppression actions.

4.5.3 Implements the incident action and safety plan.

4.5.4 Coordinates all tactical activities with IC.

4.5.5 Assigns resources to tactical level areas based upon tactical objectives and priorities.

4.5.6 Establishes, ensures, and maintains the implementation of all tactical objectives.

4.5.7 Ensures the organization, mobilization, and supervision of the Entry Team, Backup Entry Team, and Decontamination Team.

4.5.8 Briefs and advises IC on all aspects of the implementation of on-scene response strategic and tactical activities.

4.5.9 Determines scene needs and requests additional resources through the IC.

4.5.10 Coordinates all operational activities, such as entry and decontamination, with the other sector officers.

4.5.11 Maintains communication with all sectors within the span of control and briefs IC on the status of tactical objectives.

4.6 Incident Safety Officer

NOTE:
The response may require more than one ISO and may require establishment of a safety sector.
The Operations Officer may act in a dual role until an additional ISO can be established or arrives on scene.

4.6.1 Reports directly to the IC and operates within the framework of the ICS as established by IC.

4.6.2 Monitors conditions, activities, and on-scene operations to recognize hazards, establish hazard zones (Hot, Warm, Cold), and other designated hazard areas, as necessary.

4.6.3 Ensures the Entry Team, Backup Entry Team, and Decontamination Team are outfitted with the appropriate PPE.

4.6.4 Ensures the establishment of medical and rehabilitation sectors for treating stressed and fatigued responders.

4.6.5 Ensures the accountability of all emergency responders on the ground and inside the involved Facility or area.

4.6.6 Reviews the incident action and safety plan and provides IC with a risk assessment of the response operation.

4.6.7 Coordinates the establishment of on-scene security control including roadblocks and accesses control measures with the Protective Force Lieutenant (PFLT).

4.6.8 Evaluates the movement and placement of emergency response vehicles and equipment to ensure safe operations.

4.6.9 Monitors radio transmissions to detect any missed, unclear, or incomplete communications and any signs of emergency responder distress.

4.6.10 Advises IC of any expansion of the safety sector and the resulting need for additional safety officers.

4.6.11 If the event involves an actual or potential hazardous material release, then make a copy of U.S. Department of Energy, *Paducah Site Extremely Hazardous Substance Facility Plan* available, if requested.

4.7 Protective Force Lieutenant

4.7.1 Reports directly to PSS/IC.

4.7.2 Assesses the on-scene security needs and advises IC on the implementation of appropriate security actions.

4.7.3 Supervises PF and/or other security on-scene personnel.

4.7.4 Ensures responding mutual aid organizations and other off-site emergency assistance agencies have site access.

4.7.5 Provides direction to PF on appropriate measures for scene control.

4.8 Staging Officer

4.8.1 Assists IC in supervising and managing the Level II staging area and keeps IC informed of the number and functional status of staged apparatus and resources.

4.8.2 Provides a copy of the U.S. Department of Energy, *Paducah Site Extremely Hazardous Substance Facility Plan*, if requested.

4.8.3 Replenishes staged resources, as necessary.

4.8.4 Terminates staging sector activities **and** reallocates assigned resources as directed.

4.9 Medical Officer

Assists the Operations Sector Officer in coordinating the delivery of triage, treatment, and medical transportation services, and overseeing the activities of on-scene medical personnel in accordance with CP3-EP-1011, *Medical Emergencies*.

4.10 Rehabilitation Officer

Assists IC by providing post-entry medical evaluation and treatment including food and fluid replenishment, a rest area, relief from extreme environmental conditions, and/or other circumstances for the rehabilitation of emergency responders in accordance with CP3-EP-1011.

4.11 Radiation Protection

4.11.1 Provides radiological support, as necessary.

4.11.2 Monitors response personnel and equipment, as required.

4.12 Industrial Hygiene

Provides IH monitoring support and technical guidance, as required.

4.13 Regulatory Compliance

Provides technical assistance on the impact of the spill or release on the environment.

4.14 Nuclear Criticality Safety Engineer

Evaluates and provides guidance for criticality concerns during releases involving fissile material.

4.15 Facility Manager/Local Emergency Director

4.15.1 Assists facility personnel in taking protective actions and initiation of the local accountability, as directed by the IC.

4.15.2 Briefs IC upon arrival at the scene.

5.0 GENERAL INFORMATION

5.1 The DOE Paducah Site Deactivation and Remediation Contractor is committed to its Integrated Safety Management System (ISMS) program, which provides a safe and healthy workplace for all workers with the belief that all accidents, injuries, and accidents are preventable. FRNP incorporates ISMS into all aspects of work planning and execution, to include integration within the Emergency Management program and all its associated policies, plans and procedures.

5.2 The DOE Paducah Site Emergency Response Organization is structured utilizing elements of the National Incident Management System (NIMS), to include the ICS. When emergency conditions at the Paducah site require support from offsite response agencies (mutual aid elements), the ICS structure operates under a unified command hierarchy, with responding units reporting to the IC at the scene. The individual responding units are directly managed by their immediate supervisors while under the full command and control of the IC. The IC ensures a manageable span of control is maintained throughout the response, with no more than three to seven direct reports, with five being optimal, depending on circumstances and conditions.

CAS-101
NCSE 095
NCSE-RM-SITE -001
TSR 5.6.1

5.3 Avoid the introduction of water into open or breached fissile equipment/cylinder

5.4 Unless approval is obtained from PSS or Nuclear Criticality Safety (NCS), do **NOT** spray water on a UF_6 release.

5.5 Avoid the direct introduction of water to openings in the UF_6 containment boundary.

CAS-101
NCSE 088

5.6 CP3-NS-1033, *Enrichment and Exempt Waste Verification,* can be used to provide instructions for identifying maximum assay gradients (Attachment G), independent assay verification, NCS-Exempt waste stream verifications, and exemption of equipment items from NCS requirements when encountering fissile or potentially fissile conditions.

5.7 Incidental spills will be handled in accordance with CP3-ES-0003*, Environmental Incident Reporting.*

6.0 INSTRUCTIONS

NOTE:

Section **6.1** does **NOT** apply to over pressurized (bulging) drum responses. Over pressurized drums are addressed in Section **6.6**.

Lifesaving entry may be made without a qualified ISO on scene.

6.1 Initial Scene Response for a Non-Incidental Spill or Release of HAZMAT

FM/LED

6.1.1 Upon discovery or notification of a non-incidental spill or release of HAZMAT, **and** until relieved by the IC, consider performing the following:

A. **If** actions can be performed safely, **then** ensure immediate actions specified in site procedures for spill or releases are performed.

B. Ensure personnel are evacuated from the area and local personnel accountability is initiated.

IC/PSS

6.1.2 **If** the incident involves a non-incidental spill in an area deemed to be a fire, safety, or environmental hazard requiring immediate mitigation, **and** potentially affecting personnel in the surrounding area, **then** consider taking the following actions:

A. Sound the High/Low tones followed by an immediate Public Address (PA) announcement to notify site personnel working in the potentially affected area to stay clear of the area.

B. **If** the location of the incidental spill or release is outside, **then** advise site personnel in the potentially affected area to either shelter-in-place or evacuate upwind.

C. Request PFLT establishes roadblocks to prevent personnel from inadvertently entering the potentially affected area of an apparent incidental spill or release.

D. Upon arriving at the scene of a reported incidental spill or release, conduct a rapid assessment of the affected area to determine the presence of any site personnel in the affected area.

E. **If** the assessment reveals personnel located in the affected area**, then** direct these personnel to evacuate upwind of the affected area.

F. **If** the event results in the potential for personnel to have chemical or radiological exposure, **then** notify the Medical Services Provider (on the day shift) or the shift medic (on the back off shift) to conduct a medical screening of personnel involved in the event.

Shift Coordinator

6.1.3 Notify site personnel of the incident using the ALL CALL system on the PA system **and** radio system, including information on the HAZMAT release or spill, if known.

6.1.4 Initiate the call-in of a qualified ISO through Send Word Now in the event of a non-incidental spill or release.

PSS/IC

6.1.5 Respond to the incident scene or dispatch other qualified individual in that capacity.

6.1.6 If two or more emergency events occur simultaneously **and** cannot be effectively managed as a single incident, then designate one or more ICs to manage these events, as appropriate.

6.1.7 Establish a command post at the scene.

Operations Officer

6.1.8 **If** a HAZMAT incident has occurred**, then** respond to mitigate the spill or release with personnel decontamination equipment **and** appropriate materials.

PSS/IC

6.1.9 **If** additional scene access control is required, **then** contact the McCracken County Sheriff for support according to Section **6.7**.

6.1.10 **If** the HAZMAT incident involves oil or a combination of hazardous substances **and** oil, **then** perform the following:

A. Implement PAD-REG-1005, *Spill Prevention, Control, and Countermeasure Plan for the U.S. Department of Energy Paducah Site* for on-site **and**/**or** off-site releases.

B. **If** a release involves a permitted facility (for example, C-733, C-746-Q, C-752-A) or an established 90-day accumulation area, **then** implement *Contingency Plan Part G of the Hazardous Waste Management Permit Application for the U.S. Department of Energy, Paducah Gaseous Diffusion Plant, Paducah, Kentucky (KY8-890-008-982)*, as required by the plan.

6.1.11 Confirm the activation of emergency sounds **and**/**or** signals in affected facilities, when applicable.

6.1.12 Provide an on-scene report that establishes incident command **and** includes event status, locked-in alarms, and assessment of emergency conditions.

6.1.13 Assess conditions **and** determine event classification according to CP3-EP-1006, *Emergency Classification*.

6.1.14 Until the EOC is activated, assume the role of acting crisis manager (CM) until relieved by the senior manager in the executive line of succession.

6.1.15 Categorize Emergency Action Levels provided in CP3-EP-1006.

WARNING:

If a HAZMAT release occurs with little or no advance notice, evacuation of personnel could result in personnel evacuating the area through excessive concentrations of HAZMAT. In this case, sheltering-in-place in a structure that provides adequate integrity and closure may provide the best means to limit personnel exposure.

A. Direct evacuation or sheltering-in-place for downwind areas on the DOE Paducah Site affected by the release.

WARNING:

Damming **and/or** diking runoff from areas involving uranium bearing material that is equal to or greater than 1.0 wt. % assay ^{235}U may cause the achievement of a slab height that could lead to a criticality event.

B. Direct emergency confinement **and/or** containment of spills.

C. **If** uranium bearing material is involved that is equal to or greater than 1.0 wt. % assay U-235, **then** do **NOT** attempt to confine the spill or release by using damming **and/or** diking methods.

D. **If** conditions change resulting in additional areas being affected by release, **then** direct evacuation or sheltering-in-place for additional areas, as necessary.

E. **If** necessary, **then** direct an emergency medical response according to CP3-EP-1011.

F. **If** the HAZMAT is known **and** the hazards understood, **then** may direct a lifesaving entry or emergency decontamination according to Section **6.3**.

G. Ensure notifications to off-site agencies are made according to CP3-EP-1019, *Emergency Notification*.

H. **If** required, **then** ensure notifications are made according to CP3-ES-0003.

NOTE:

Emergency response actions may impact TSRs. Appendix B, *TSR Section 5.7.3.4 (Deactivation), Conditions Outside TSR*, provides IC with guidance for determining if TSR Section 5.7.3.4 should be implemented.

Only the PSS/NFM has the authority to enter TSR 5.7.3.4. **If** the IC is **NOT** a PSS, **then** they do **NOT** have this authority.

6.1.16 Consider TSR requirements during emergency response using the guidelines provided in Appendix B.

WARNING:

Shutting off power to a facility may cause a criticality reaction to continue.

6.1.17 Consider the need to modify the ventilation system status of affected facilities due to the presence of smoke, radionuclides, **and/or** HAZMAT.

6.1.18 **If** emergency purge, **then**, when applicable, remove filter room covers.

Incident Safety Officer

6.1.19 Consider performing the following, as necessary:

A. Identify, analyze the hazard, **and** advise IC.

B. Ensure evacuations, as directed by IC, are performed.

C. Recommend to IC an on-scene monitoring and sampling strategy **and** oversee its implementation to ensure the safety of all personnel.

D. **If** reasonably possible, **then** include a sampling location approximately 100 meters (328 feet) from the release point to facilitate determination for the IC to declare an ALERT.

E. Advise the IC on PPE required for the Entry Team, Backup Entry Team and the Decontamination Team.

F. Ensure personnel entering areas of unknown, IDLH, or suspected IDLH concentrations use positive pressure self-contained breathing apparatus.

G. Before recommending ending the use of respiratory protection to the IC, evaluate airborne HAZMAT concentrations.

H. Advise IC on the use of personal monitoring devices for the Entry Team, Backup Entry Team and Decontamination Team.

I. Evaluate the hazard **and** recommend to IC the location and any relocation of Hot, Warm, and Cold work zones.

J. Ensure the establishment of controlled access Hot and Warm zone boundaries.

K. Review the effectiveness of scene access control methods along the security perimeter.

L. Ensure safety briefing is given to the Entry Team, Backup Entry Team, Decontamination Team, and other personnel, as needed.

M. Evaluate the need for a medical sector with qualified personnel **and** a transportation capability.

N. Coordinate with the Rehabilitation Officer, as required.

O. Ensure the completion of CP3-EP-1007-F01, *Hazardous Materials Emergency Response Site Safety Plan*.

P. Monitor the Entry Team and/or Backup Entry Team, as applicable, while they occupy the Hot zone for any safety or health problems including exhaustion according to CP3-EP-1007-F03, *Safety Officer Entry Control Sheet*.

Q. Monitor the Decontamination Team while they occupy the warm zone for any safety or health problems including exhaustion according to CP3-EP-1007-F03.

R. Monitor the Entry Team and/or Backup Entry Team, as applicable, Self-Contained Breathing Apparatus (SCBA) breathing air levels while they occupy the Hot zone according to CP3-EP-1007-F05, *SCBA Air Level Control Sheet for Emergency Incident*.

S. Monitor the Decontamination Team SCBA breathing air levels while they occupy the warm zone according to CP3-EP-1007-F05.

T. Ensure adequate hydration of the Entry Team, Backup Entry Team and Decontamination Team based upon environmental conditions and/or work task demands.

U. **When** required, due to adverse environmental conditions and/or work task demands (i.e., traversing long distances or performing multiple complex tasks), rotate entry teams on a frequent basis.

V. Evaluate air, soil, **and/or** water monitoring data **and** advise IC on their impact on response activities.

W. Assist IC in making the decision to terminate on-scene emergency response operations.

X. Assist IC in the conducting of the post-emergency response critique.

PSS/IC

6.1.20 Ensure the development of a Site Safety Plan according to CP3-EP-1007-F01.

6.1.21 Identify each Site Safety Plan with a unique number consisting of the date followed by the number of plans executed that day (Example: 120315-1).

6.1.22 Create a new addendum to the Site Safety Plan for each entry referencing the number of the initial Site Safety Plan alphabetically (example: 120315-1 A, 120315-1 B).

Operations Officer

6.1.23 Consider performing the following, as necessary:

A. Assess the on-scene fire hazard or potential fire hazard **and** advise IC on the implementation of appropriate fire suppression actions.

B. Supervise Fire Services on-scene personnel.

C. Brief **and** advise IC on all aspects of the implementation of on-scene response strategic and tactical activities.

D. Establish **and** ensure the implementation of all tactical objectives.

E. Ensure the organization **and** mobilization of the Entry Team, Backup Entry Team, and Decontamination Team.

F. Supervise Entry Team, Backup Entry Team, and Decontamination Team activities.

G. Coordinate all operational activities, such as entry and decontamination, with the other officers.

H. Assist IC in making the decision to terminate on-scene emergency response operations.

I. Assist IC in the conducting of the post-emergency response critique.

PF LT

6.1.24 Consider performing the following, as necessary:

A. Assess the on-scene security needs **and** advise IC on the implementation of appropriate security actions.

B. Oversee all on-scene security activities.

C. Supervise PF **and/or** other security on-scene personnel.

Medical Officer

6.1.25 Consider performing the following, as necessary:

A. Assist IC in coordinating the delivery of triage, treatment, and medical transportation services **and** in overseeing the activities of on-scene medical personnel according to CP3-EP-1011.

B. Determine any additional medical resource needs **and** communicate them to the ISO.

C. Provide pre-entry and post-decontamination medical evaluation and treatment.

Incident Safety Officer/Designee

6.1.26 Consider performing the following, as necessary:

A. Provide food and fluid replenishment.

B. Provide a rest area.

C. Provide a relief area from extreme environmental conditions **and/or** other circumstances.

IC

6.1.27 **If** entry is for other than lifesaving, **then** before permitting entries into the Hot or Warm control zone, direct emergency response personnel to perform the actions of Section **6.4**.

PSS/IC

6.1.28 **If** on-scene monitoring assistance is needed, **then** perform the following:

A. **If** EOC is activated, **then** request monitoring assistance from the Technical Assessment Group coordinator.

B. **If** EOC is **NOT** activated, **then** request monitoring assistance from Radiation Protection (RP), IH, and Environmental Monitoring, as necessary.

6.2 Additional Actions for a UF_6/HAZMAT Release

WARNING:

A Uranium Hexafluoride (UF_6) release results in Hydrofluoric Acid (HF) and airborne radioactivity in the form of UF_6 and Uranyl Fluoride (UO_2F_2) particulate. These substances may be present even if there are no visual indications. The distribution of these compounds depends on weather conditions and the release conditions such as liquid UF_6, gaseous UF_6, and system temperature and/or pressure.

PSS/IC

6.2.1 **If** a release of UF_6 occurs, **then** ensure emergency response forces make an immediate, timely, and urgent response to the scene of the release **and** perform the following:

A. Ensure NCS is notified.

B. **If** the incident involved UF_6 that is equal to or greater than 1.0 wt. % assay ^{235}U **and** is located in an area that is without Criticality Accident Alarm System (CAAS) coverage, **then** ensure the performance of criticality accident monitoring to detect a possible criticality accident, by requiring each Entry Team member to wear an EPD.

> WARNING:
>
> Water entering a ruptured UF_6 cylinder with material that is equal to or greater than 1.0 wt.% assay ^{235}U is a potential criticality hazard.

Fire Services

6.2.2 Analyze **and** provide guidance for any criticality concerns resulting from the release.

PSS/IC

6.2.3 Direct use of a water fog downwind of the release to attempt to knock down the plume, as appropriate.

6.2.4 Direct any personnel who were exposed, or may have been exposed, to report to the Medical Officer to be processed for evaluation of uranium uptake by urinalysis.

6.2.5 Notify RP of the personnel involved in a UF_6 release according to CP3-RP-1117, *Accidents and Emergencies*.

6.2.6 Deploy an Entry Team into the Hot zone as soon as possible according to Section **6.44**, to ensure containment and isolation of UF_6 cylinder contents. Consider shielding cylinder with a tarpaulin or other means to protect against rain, snow, or other moderating material.

6.2.7 **If** the release occurred inside an enclosed structure, **then** assess the situation **and** perform either the following, based upon the specific tactical need:

A. Ensure the ventilation fans are operated to clear the facility,

Or,

B. Ensure the ventilation fans are shut down to slow the release of UF_6 from the facility.

> WARNING:
>
> Cylinders exposed to significant heat are susceptible to hydraulic rupture.
>
> **If** the cylinders are heated evenly and ruptures, **then** it is most likely to rupture at the end(s) of the cylinder. Otherwise, the cylinder is most likely to rupture at the point of flame impingement.

GEN-043
CAS-101

6.2.8 **If** a release in C-337A occurs from leaks or breaks in process piping, **then** ensure affected drums are isolated from leak or break as soon as possible to prevent the introduction of moderating material by deploying an Entry Team into the Hot zone according to Section **6.4**.

6.2.9 **If** a major fire occurs near cylinders, **then** perform the following:

A. Ensure personnel stay away from the ends of the cylinder **or** other areas where possible cylinder rupture may occur.

B. Direct the application of cooling water; using unmanned cooling streams if possible, to the sides of unbreached cylinders exposed to the flames, as appropriate.

C. Firefighters should use as fine a spray as is practical to fight the fire.

Shift Coordinator

> CAUTION:
>
> The sudden shutdown of the C-620 air plant could adversely impact site air pressure.

6.2.10 **If** a release is from C-315 affecting C-620 air plant, **then** request the C-620 air plant be shut down.

> CAUTION:
>
> The sudden shutdown of the C-335 air plant could adversely impact site air pressure.

6.2.11 **If** a release in C-335 affecting the C-335 air plant, **then** request the C-335 air plant be shut down.

6.3 Emergency Lifesaving Entry and Personnel Decontamination

PSS/IC

6.3.1 **If** the HAZMAT is known and the hazards understood, **then** perform the following steps, as necessary:

A. Brief the Entry Team on the specific mission of the entry, routes of ingress and egress, areas of danger, proper PPE, and stay-time limitations.

B. Ensure proper PPE including EPDs (EPDs are required if UF_6 involved that is equal to or greater than 1.0 wt. % assay ^{235}U **AND** located in an area without CAAS coverage).

C. Ensure decontamination facilities are available to perform emergency decontamination.

D. **If** emergency lifesaving entry is performed, **then** ensure the requirements for Section 6.3 are performed concurrently with this entry.

E. **If** emergency decontamination is performed, **then** direct the potentially contaminated area and equipment where the decontamination occurred, to be isolated in preparation for monitoring and clean up after emergency is terminated.

> NOTE:
>
> **If** lifesaving entry must be performed before Steps **6.4.1** through **6.4.3** can be performed, **then** Steps **6.4.1** through **6.4.3** are performed concurrently with the entry.

6.4 Entry into Hot Zone

PSS/IC

6.4.1 Identify each Entry Team with a numerical designation (example: Teams 1, 2, 3) **and** use the numerical designation in CP3-EP-1007-F01, *Hazardous Materials Emergency Response Site Safety Plan* or addendum, and CP3-EP-1007-F02, *Hazardous Materials Incident Safety Briefing Checklist*.

6.4.2 **If** entry is for other than lifesaving, **then** before permitting entries into the Hot or Warm Control Zone, ensure the following:

A. The Site Safety Plan **or** addendum is approved.

B. Entry Team and Backup Entry Team are trained and briefed.

C. **If** UF_6 is involved and is equal to or greater than 1.0 wt. % assay ^{235}U **and if** located in an area without CAAS coverage, **then** entry and Backup teams are equipped with EPDs.

D. Decontamination facilities are in place.

E. Decontamination Team consisting of qualified personnel are briefed and wearing correct PPE.

NOTE:

Lifesaving entry may be made without a qualified ISO on scene.

ISO

6.4.3 Before permitting entry into the Hot or Warm control zones, perform the following:

A. **If** other than victim rescue, **then** ensure Entry Team, Backup Entry Team and Decontamination Team members receive a medical evaluation and the results are recorded on CP3-EP-1007-F03.

B. Ensure initial Entry Team has a properly equipped and ready Backup Entry Team.

C. Ensure team members are briefed according to each entry, **and** the briefing is documented on CP3-EP-1007-F02.

D. Ensure the "buddy system" is used and no solo entries are made.

E. Ensure properly equipped back-up personnel are in place.

F. Ensure SCBA air level is monitored on CP3-EP-1007-F05.

G. Review decontamination plan with the Decontamination Officer **and** ensure decontamination line is established before entry.

H. Ensure rehabilitation sector is established.

NOTE:

Step **6.4.4** does **NOT** apply to UF_6 incidents involving material that is equal to or greater than 1.0 wt. % assay ^{235}U. See Step **6.4.5** for actions on material that is equal to or greater than 1.0 wt. % assay ^{235}U.

Entry Team

6.4.4 Enter the Hot zone **and** perform mitigation actions, such as the following:

WARNING:

Damming and/or diking runoff from areas involving UF_6 that is equal to or greater than 1.0 wt. % assay ^{235}U may cause the achievement of a slab height that could lead to a criticality event.

A. Spill confinement (example: damming, diking).

B. Spill **or** release containment (example: valving, plugging, and patching).

C. Incident evaluation as defined in briefings.

6.4.5 **If** the release involves UF_6 that is equal to or greater than 1.0 wt. % assay ^{235}U, **then** enter the Hot Zone **and** perform mitigated actions such as the following:

A. Spill **or** release containment (example: valving, plugging, patching, or covering).

B. Incident evaluation as defined in briefings.

ISO

6.4.6 Record team information, as applicable, on CP3-EP-1007-F03.

6.4.7 **If** entry teams perform monitoring, **then** ensure the monitoring results are recorded on CP3-EP-1007-F04, *On-Scene Sampling/Monitoring Strategy*.

Entry Team

NOTE:

Refer to CP3-WM-1037, *Generation and Temporary Storage of Waste Materials* for handling requirements for non-fissile waste.

6.4.8 **When** exiting the Hot zone, perform the following:

A. Conduct deliberate checks for visible uranium contamination on PPE, waste materials and miscellaneous items involved with a UF6 release, and being removed from the Hot and Warm zones to determine if they need to be placed in a 5.5 gallon container and follow fissile/potential fissile controls in accordance with CP3-WM-1036, *Nuclear Criticality Safety Implementation Requirements For Handling And Storage Of Fissile And Potentially Fissile Waste.*

B. Report to the decontamination station for decontamination.

C. Receive a medical evaluation and rehabilitation.

D. Attend debriefing by the safety officer **or** the person directing the assigned task.

Medical Officer/Rehabilitation Officer

6.4.9 Record before-and-after data for each Entry Team, Backup Entry Team and Decontamination Team member, as applicable, on CP3-EP-1007-F03.

PSS/IC

6.4.10 **If** a protracted event is anticipated, **then** ensure any needed supplies are available.

ISO

6.4.11 Consider performing the following:

A. Ensure post-operations medical surveillance is performed on Entry Team, Backup Entry Team, and Decontamination Team members, as applicable.

B. Ensure interviews are conducted with exiting team members **and** review health and safety conditions in the Hot Zone, as applicable.

6.5 Emergency Monitoring/Sampling Strategies for Releases in Process Facilities

NOTE:
Emergency monitoring and sampling in the Hot Zone is conducted after the release has been mitigated to provide the basis for declaring an "All Clear" for the event. A significant release may require increasing the area and number of samples before an "All Clear" can be determined. Consider the need to take samples (for example, smear, swipe) to expedite termination and/or re-entry.

IC/ISO/IH

6.5.1 Determine sampling strategy to support event termination and an "All Clear" determination.

RP

6.5.2 Determine on-scene sampling and surveying strategies, including the need for any of the following:

A. Smear/swipe samples

B. Contamination measurements

C. Radiation dose measurements

D. High-volume air sampling locations

E. Facility air-flow analysis, as required

F. Existing locations of facility low-volume air samplers, as required

Entry Team

6.5.3 Enter the Hot Zone with the following sampling equipment, as needed:

A. HF detector tube/sampling pump, real-time HF detector, as needed.

B. High-volume air samplers, if required.

C. Smear/swipe samples, if required.

D. Dose rate and contamination monitoring instruments, if required.

6.5.4 Take measurements for HF near the source of the release and in locations where high-volume air samples may be taken.

6.5.5 Initiate sampling **and** retrieve samples unless another entry team is available to retrieve samples.

NOTE:

High-volume air sampling, if required, is to be performed after the release has been mitigated.

High-volume air sampling equipment, if required, is **NOT** to be taken into the Hot Zone until release has been mitigated.

WARNING:

Due to the motor moving large amounts of air, the high-volume air sampling equipment can cause severe burns if handled without the proper PPE.

6.5.6 Conduct air sampling, if required, using the following guidelines:

A. Set-up high-volume air sampler at or near the source of the release and a minimum of one other location determined by IC with assistance from RP.

B. Ensure high-volume air samplers have power supply (an extension cord may be necessary) and are turned on.

C. Report sample start-time and flow rate for each high-volume air sampler on CP3-EP-1007-F04.

D. Turn high-volume air samplers off upon completion of sampling time.

E. Change the collecting media after each sampling period.

F. Report sample stop-times **and** flow rates for each high-volume air sample location on CP3-EP-1007-F04.

G. **If** directed, **then** take samples (for example, smear, swipe, contamination measurements, dose rate measurements) at selected distances from release point to determine area to be posted.

H. Containerize collecting media (for example, filters, and smears) prior to leaving area to maintain sample integrity during removal from the Hot Zone.

RP

6.5.7 Perform the following, if required:

A. Conduct sampling and measurement as directed by IC.

B. Advise PSS/IC on the level and meaning of sampling results and measurements.

C. Retain samples for further analysis.

PSS/IC

6.5.8 After consultation with RP on sampling results, take the following actions, as appropriate:

- Determine any areas of limited access and post signage or otherwise secure the area.

- Obtain additional sampling, if required.
- Issue an "All Clear" at the incident scene, **or** additional sampling.

Regulatory Compliance

6.5.9 Advise IC on environmental issues upon request.

PSS/IC

NCSA GEN-009

6.5.10 **If** an emergency requires the use of Negative Air Machines (NAMs), **then** ensure the operation of the NAM is in accordance with CP3-SM-0004, *Operation of 1000 and 2000 CFM Negative Air Machines* as summarized in Appendix C, *Guidance on the Operation of the NAM*.

6.6 High-Risk Drums

WARNING:

Containers with contents that have the potential to be pressurized can pose hazards (for example, fire or explosions) that may require immediate action, refer to CP3-WM-1017, *Safe Handling and Opening of Sealed Containers,* for guidance for all containers that reside in FRNP space. Refer to CP3-WM-2110, *Waste Container Handling, Overpacking, and Transportation,* for all containers in other locations.

Containers may rupture without any warning and result in personnel injury, equipment or facility damage, or environmental contamination.

Waste containers observed to be leaking or over pressurized require the PSS notification upon detection.

PSS/IC

6.6.1 Upon notification of a suspect high-risk drum (e.g., over pressurization, bulging), contact the drum owner and the Facility Manager to obtain any additional information on the drum contents.

6.6.2 **If** conditions exist that could adversely affect criticality safety, **then** notify NCS.

6.6.3 **If** isolation of the area can be performed safely, **then** notify the drum owner to isolate the area to prevent unauthorized personnel from approaching the drum.

6.6.4 **If** specialized assistance is required, **then** request assistance from organizations such as Health and Safety, NCS, or RP.

6.6.5 Notify HAZMAT Officer (Fire Services) and PFLT, as appropriate.

6.6.6 Respond to the scene to provide oversight.

HAZMAT Officer

6.6.7 Respond to the scene with necessary apparatus, personnel, and equipment.

PF

6.6.8 Provide scene access control, as directed by the PFLT.

PSS/IC

6.6.9 Direct actions to stabilize the situation **and** place the drum in a safe condition using HAZMAT resources.

HAZMAT Officer

6.6.10 Direct Entry Team to take actions to mitigate the hazard (for example, relieve the pressure).

PSS/IC

6.6.11 Notify the drum owner **and** transfer responsibility for further cleanup, remediation, and scene maintenance to the drum owner after the drum has been placed in a safe condition.

6.6.12 **If** the incident did **NOT** require interface with off-site emergency response agencies, **then** go to Section **6.8**.

6.7 Off-Site Emergency Response Agencies Interface

PSS/IC

6.7.1 **If** necessary to support site response, **then** request assistance from off-site emergency response agencies including mutual aid organizations according to CP3-EP-1012, *Off-Site Emergency Response Assistance*.

PF

6.7.2 Ensure off-site emergency response agencies enter the site according to Safeguards and Security PF Post orders.

PSS/IC

NOTE:

Personal dosimeters are located in a storage box in the inspection area of Post 15.

6.7.3 Ensure off-site emergency response agency's personnel receive personal dosimeters upon entering Limited Area.

Staging Officer

NOTE:

Some off-site emergency response agencies such as emergency medical service organizations may need to make rapid egress from the site due to urgent patient transport and care duties or other extraordinary obligations. Personnel from these agencies shall be able to exit the site without immediately returning their personal dosimeter to a drop-off box. The PSS shall ensure dosimeters are returned to the site immediately after the emergency event.

6.7.4 Upon direction from PSS/IC, direct responding off-site emergency response organizations to the Level I or II staging areas as appropriate.

6.7.5 Advise IC on the number and functional status of the staged off-site emergency response organization apparatus and resources.

PSS/IC

NOTE:

IC shall provide briefings to responding off-site agency representatives at appropriate and convenient times. Briefings to external agencies should **NOT** impair, impede, or interrupt on-scene emergency operations activities.

Working within the National Incident Management System, the federal government's National Response System may coordinate federal agency response activities at the scene of a site emergency. The National Response System may respond to the scene with representatives from the National Response Team, the Regional Response Team, and/or special teams.

6.7.6 **If** the U.S. Environmental Protection Agency (EPA), Kentucky Emergency Response Team, or Regional Response Team responds to the emergency scene, **then** provide a comprehensive oral briefing on the incident to the EPA's on-scene coordinator.

6.7.7 Provide the National Response Team on-scene coordinator and/or the Regional Response Team on-scene coordinator and/or special team leaders with a comprehensive oral briefing on the status of emergency scene activities. The National Response Team or Regional Response Team may include representatives from the following agencies:

A. U.S. Department of Agriculture

B. U.S. Coast Guard

C. U.S. Department of Commerce

D. U.S. Department of Defense

E. U.S. DOE

F. U.S. EPA

G. U.S. Federal Emergency Management Agency

H. U.S. General Services Administration

I. U.S. Department of Health and Human Services

J. U. S. Department of Homeland Security

K. U.S. Department of the Interior

L. U.S. Department of Justice

M. U.S. Department of Labor

N. U.S. Department of State

O. U.S. Department of Transportation

NOTE:

The Commonwealth of Kentucky's Division of Emergency Management may coordinate state agency response activities at the scene of a site emergency. State agencies may respond to the scene according to the commonwealth's Emergency Operations Plan's hazardous materials guidelines.

6.7.8 Provide the Kentucky on-scene IC with a comprehensive oral briefing on the status of emergency scene activities. The Kentucky response team may include representatives from the following agencies:

A. Division of Emergency Management, Kentucky Department of Military Affairs

B. Kentucky State Police, Justice and Public Safety Cabinet

C. Division of Commercial Vehicle Enforcement, Kentucky State Police, Justice and Public Safety Cabinet

D. Environmental Response Team, Kentucky Department for Environmental Protection, Energy and Environment Cabinet

E. Office of the State Fire Marshal, Kentucky Department of Housing, Buildings and Construction, Public Protection Cabinet

F. Division of Traffic Operations, Kentucky Department of Highways, Transportation Cabinet

G. Division of Environmental Services, Kentucky Department of Agriculture

H. Radiation Health Branch, Kentucky Division of Public Health, Protection and Safety, Cabinet for Health and Family Services

6.7.9 Secure **and** preserve the incident scene for further event investigation activities according to CP3-EP-1010, *Termination and Recovery After Emergencies*.

6.7.10 **If** the emergency scene involves a fatality, **then** notify the McCracken County coroner according to CP3-EP-1011.

6.8 Termination and Recovery

CM

6.8.1 **If** an OE, Alert, **or** Site Area Emergency was declared, **then** terminate the emergency according to CP3-EP-1010.

PSS/IC

6.8.2 **If** an OE, Alert, **or** Site Area Emergency was **NOT** declared, **then** terminate the emergency **and** conduct a formal turnover with the facility manager citing any safety or operations concerns.

Recovery Manager

NOTE:
The FM designated by the CM becomes the recovery manager and is responsible for the safe return of the facility to operation.

6.8.3 Perform the following according to CP3-QA-3008, *Fact Finding*:

A. Conduct a critique of response actions for HAZMAT responders.

B. **If** EOC is activated, **then** conduct a critique for EOC members.

7.0 RECORDS

7.1 Records Generated

The following records may be generated by this procedure:

- CP3-EP-1007-F01, *Hazardous Materials Emergency Response Site Safety Plan* (for actual emergency)
- CP3-EP-l007-F02, *Hazardous Materials Incident Safety Briefing Checklist* (for actual emergency)
- CP3-EP-1007-F03, *Safety Officer Entry Control Sheet* (for actual emergency)
- CP3-EP-1007-F04, *On-Scene Sampling/Monitoring Strategy* (for actual emergency)
- CP3-EP-1007-F05, *SCBA Air Level Control Sheet for Emergency Incident* (for actual emergency)

7.2 Records Disposition

The records are to be maintained in accordance with CP3-RD-0010, *Records Management Process*.

Appendix A – Acronyms/Definitions

ACRONYMS

CAAS – Criticality Accident Alarm System

CFR – Code of Federal Regulations

CM – Crisis Manager

DOE – Department of Energy

EOC – Emergency Operations Center

EPA – Environmental Protection Agency

EPD - Electronic Personnel Dosimeter

FM – Facility Manager

FRNP – Four Rivers Nuclear Partnership

HAZMAT – Hazardous Material

HF – Hydrofluoric Acid

IC - Incident Commander

ICS - Incident Command System

IDLH – Immediately Dangerous to Life or Health

IH – Industrial Hygiene

ISMS – Integrated Safety Management System

ISO – Incident Safety Officer

IMS - Incident Management System

LED – Local Emergency Director

NAM – Negative Air Machine

NFM – Nuclear Facility Manager

NCS - Nuclear Criticality Safety

NCSA - Nuclear Criticality Safety Approval

NCSE - Nuclear Criticality Safety Evaluation

Appendix A – Acronyms/Definitions (Continued)

OE - Operational Emergency

PA – Public Address

PF – Protective Force

PFLT - Protective Force Lieutenant

PPE - Personal Protective Equipment

PPPO - Portsmouth Paducah Project Office

PSS – Plant Shift Superintendent

RP – Radiation Protection

SCBA - Self-Contained Breathing Apparatus

TAG – Technical Assessment Group

TSR - Technical Safety Requirements

UF_6 – Uranium Hexafluoride

UO_2F_2 – Uranyl Fluoride

U.S. – United States

DEFINITIONS

ALL CALL - A broadcast system that overrides the site PA system and normal radio talk groups. This system allows an announcement to be made simultaneously on the PA system and site radio system.

Command Post - A distinctly marked vehicle or specific area equipped with communications capabilities and other resources required to manage an incident, providing the IC and emergency response personnel with a location as close as possible to the actual scene from which they can operate and assess the situation.

Control Zones - Zones established at or near the scene of a HAZMAT incident to permit the mitigation of the spill or release while minimizing exposures to responders and members of the public and preventing the spread of contamination.

- **Hot Zone (Exclusion Zone)** -The area immediately surrounding a HAZMAT incident, extending far enough to prevent adverse effects from hazardous releases to personnel outside the zone.
- **Warm Zone (Contamination Reduction Zone)** - The area where personnel and equipment decontamination and Hot zone support takes place. It includes control points for access corridor and thus assists in reducing the spread of contamination.
- **Cold Zone (Support Zone)** - The area containing the command post and other such support functions as are deemed necessary to control the incident.

Appendix A – Acronyms/Definitions (Continued)

Emergency Decontamination - Decontamination performed without a fully operational decontamination station in order to save a life or prevent serious injury. A method of performing emergency decontamination may be to use a single booster hose from a fire apparatus without the usual precautions of protecting the environment by containing runoff. The area and equipment that may have become contaminated is subsequently roped off or segregated for later clean up.

Emergency Operations Center - An emergency response facility that accommodates personnel acting in support of the command and guidance functions but separate from the incident commander and on-scene command post. Under the guidance of the crisis manager, these personnel supply in-depth strategic and corrective engineering and radiological, hazardous materials, and environmental support assistance to the incident scene.

Hazardous Material - Any substance harmful or injurious to human and animal life, the environment, and/or public or private property.

- **Chemical** - Toxic, corrosive, or injurious substance because of inherent chemical properties and including, but **NOT** limited to, such items as petroleum products, paints, plastics, acids, gases, caustics, industrial chemicals, poisons, solvents, pesticides, and mineral fibers.
- **Biological** - Micro-organisms or associated products which may cause disease in humans, animals, or economic crops and includes pathogenic wastes from medical institutions, slaughterhouses, poultry processing plants, etc.
- **Etiological** - Infectious materials. Substances which contain disease producing micro-organisms, including bacterial viruses and biological preparations of pathogenic organisms affecting humans, animal life, and plants.
- **Radiological** - Any radioactive substance emitting ionizing radiation at a level which could produce a health hazard. Radiopharmaceutical, industrial radiographic equipment and uranium products involved in transportation accidents and nuclear weaponry are a few sources of radiological hazardous materials.
- **Explosive** - Material capable of releasing energy with blast effect immediately upon activation; the released energy usually damages or destroys objects in close proximity to the blast; shrapnel or other projectiles caused by explosives.

HAZMAT Response - The generic emergency response to spills or releases of oil, HAZMAT, hazardous wastes, unknowns and off-normal conditions such as bulging drums.

Incident Commander - The person responsible for all decisions relating to the on-scene management of the incident. IC is in charge at the incident. National Fire Protection Association identifies this person as IC or fire ground commander. The Occupational Safety and Health Administration identify this person as the on-scene IC.

Incident Management System - A system instituted by IC of an emergency scene for providing overall coordination and control of the event. The IMS is also known as the incident command system.

National Incident Management System - An emergency incident command system that provides a consistent, flexible, and adjustable national framework within which government and private entities at all levels can work together to manage domestic incidents, regardless of their cause, size, location, or complexity. This flexibility applies across all phases of incident management: prevention, preparedness, response, recovery, and mitigation.

Appendix A – Acronyms/Definitions (Continued)

Incidental Spill/Release - A spill or release that does **NOT** require an emergency response; the spill or release is **NOT** life or injury threatening, does **NOT** create Immediately Dangerous to Life or Health conditions, does **NOT** pose a fire or explosive hazard (does **NOT** exceed or does **NOT** have the potential to exceed 25% of the Lower Explosive Limit), does **NOT** require immediate attention because of danger, and does **NOT** present an oxygen deficient condition.

Non-Incidental Spill/Release - An uncontrolled, uncontained or unconfined spill in a quantity greater than 55 gallons. Conditions may also result in a release that involves a life-threatening injury, creates immediately dangerous to life or health conditions, poses a fire or explosive hazard (exceeds or has the potential to exceed 25% of the Lower Explosive Limit), requires immediate attention because of danger, and presents an oxygen deficient condition.

Over Pressurized (bulging) High Risk Drum - Drums that are deformed due to temperature, chemical, or organic reactions of the contents with either the top or bottom surfaces expanded beyond the rim of the drum due to internal pressure.

Sector - A tactical management unit having responsibility for either a geographic or functional assignment. Designated geographical sectors may include north, south, east, or west divisions of the emergency scene or may include specifically designated facilities. Sectors include the functional areas of operations, fire services, medical services, environmental monitoring activities, rehabilitation services, occupational safety and health activities, and all other functional operational areas considered necessary by IC. The assignment of sectors assists IC in increasing organizational and operational effectiveness for managing personnel and other resources safely and efficiently.

Protective Action – A Physical measure taken, such as evacuation or sheltering, taken to prevent potential health hazards from adversely affecting the on-site or off-site populations.

Appendix B – TSR SECTIONS 5.7.3.4

5.7.3.4 *Conditions Outside TSR*

Emergency actions that depart from an approved TSR may be taken when no actions consistent with the TSR are immediately apparent, and when these actions are needed to protect workers, the public, or the environment from imminent and significant harm. Such actions must be approved by a person in authority as designated in the TSR. This authority is delegated to the Nuclear Facility Manager or the Plant Shift Superintendent.

In an emergency, if a situation develops that is **NOT** addressed by the TSR, the Nuclear Facility Manager or the Plant Shift Superintendent is expected to use his/her training and expertise to take actions to correct or mitigate the situation. Also, the Nuclear Facility Manager or the Plant Shift Superintendent may take actions that depart from a requirement in the TSRs provided that (1) an emergency situation exists; (2) these actions are needed immediately to protect the workers, public, and environment from imminent and significant harm; and (3) no action consistent with the TSR can provide adequate or equivalent protection. If emergency action is taken, a verbal notification shall be made to DOE- Portsmouth Paducah Project Office (PPPO) and a written report shall be made to DOE-PPPO as soon as practical.

FOR INFORMATION ONLY

The IC must consider TSR requirements when responding to an emergency including those emergencies which are classified as "ALERTS" or "SITE AREA EMERGENCY." TSR Section *5.7.3.4 ,Conditions Outside TSR* allows facility operations to depart from the TSRs in specific situations. Application of these conditions during events can require complex analysis of the site's regulatory requirements. The Nuclear Facility Manager or the PSS must decide whether to implement TSR Section *5.7.3.4* and discontinue TSR actions and surveillance.

When confronted with a situation which appears to warrant application of TSR Section 5.7.3.4, the IC should take advantage of available management resources. This request for advice on invoking TSR Section 5.7.3.4 can be relayed through the PSS, if necessary. However, at no time should this consultation result in a deferral of actions which would jeopardize personnel safety**.**

Once conditions permit, the IC should allow resumption of TSR actions and surveillance. This permission to resume may be accomplished prior to termination of the emergency response.

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Appendix C – Guidance on the Operation of the NAM

A. The NAM shall remain in continuous operation until the source of the release is terminated or the NAM is **NOT** needed for emergency response. When a NAM is shutdown, whether intentional or unintentional, that particular NAM shall **NOT** be used/re-used in the emergency response until the inspection and/or filter change is performed.

B. NAMs that contain filters that have been used on systems containing potentially fissile/fissile material shall be used only inside areas protected by a CAAS.

C. NAMs shall be used only as an airborne filtration system. Use of the systems to vacuum materials from the floor or equipment is **NOT** an approved practice.

D. Unless otherwise approved, NAMs shall **NOT** be used on spraying operations where air intake would contain droplets of moisture or oil. No operation shall create wet filters (i.e. enough moisture to cause visible condensation, pooling of liquid inside the NAM, or material to wash off filters).

E. A minimum of two-foot edge-to-edge spacing shall be maintained between NAMs and all other fissile/potentially fissile materials.

F. NAMs shall **NOT** be used in support of operations involving uranium with an assay> 5.5 wt. % ^{235}U unless approved by a case-specific NCSA.

G. A NAM that is out of service shall **NOT** be used in an emergency response.

H. When the source of the release is terminated or the NAM is no longer needed for the emergency response, a NAM inspection and/or filter change shall be performed prior to resuming NAM operation.

I. If, during an emergency response, a non-fissile NAM is used and is exposed to fissile/potentially fissile material, the NAM shall be tagged out of service and posted as a potentially fissile NAM when the source of the release is terminated (e.g. recovery phase of release).

J. Filters from a non-fissile NAM that have been exposed to fissile or potentially fissile material during an emergency response shall be removed and handled as fissile or potentially fissile filters.

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K. If needed, a fissile or potentially fissile NAM shall be decontaminated according to CP4-OP-0428, *Field Decontamination* until it meets the requirements of CP3-NS-1033 for NCS exemption of items.

L. Material removed from the NAM shall be handled according to CP3-WM-1036.