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ADDENDUM J
CONTINGENCY PLAN

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ADDENDUM J
CONTINGENCY PLAN

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1 **J. CONTINGENCY PLAN**

2 **J.1 General Information**

3 The Plutonium-Uranium Extraction 218-E-14 and 218-E-15 (PUREX Storage Tunnels) are located in the
4 200 East Area of the 1,450-square kilometer U.S. Department of Energy, Richland Operations Office
5 (DOE-RL) operated Hanford Site in southeastern Washington State. The Hanford Site Emergency
6 Preparedness Program is based upon the incident command system, which allows a graded approach for
7 responses to emergency events. This plan contains a description of facility specific planning and
8 response. It is used in conjunction with Permit Attachment 4, *Hanford Emergency Management Plan*
9 (DOE/RL-94-02). Response to events is performed using facility specific and/or Site level emergency
10 procedures.

11 **J.1.1 Facility Name**

12 U.S. Department of Energy
13 Hanford Site
14 PUREX Storage Tunnels

15 **J.1.2 Facility Location**

16 Benton County, Washington; within the 200 East Area. Structures covered by this plan are:

17 218-E-14 Tunnel Number 1

18 218-E-15 Tunnel Number 2

19 **J.1.3 Owner**

20 Doug S. Shoop, Manager
21 U.S. Department of Energy
22 Richland Operations Office
23 P.O. Box 550
24 Richland, Washington 99352

25 **J.1.4 Facility Manager**

26 CH2MHill Plateau Remediation Company
27 P.O. Box 1600
28 Richland, Washington 99352-1600

29 **J.1.5 Description of Facility and Operations**

30 The PUREX Storage Tunnels consist of two structures, 218-E-14 (Tunnel Number 1) and 218-E-15
31 (Tunnel Number 2). The PUREX Storage Tunnels are permitted as miscellaneous units under
32 Washington Administrative Code (WAC) 173-303-680 and comprise Closing Unit Group ~~1925~~. The
33 tunnels are used for the storage of material from the PUREX Plant and from other onsite sources. The
34 material stored in the tunnels contains dangerous waste and varying amounts of mixed waste
35 contamination; therefore, the stored material is managed as mixed waste. The tunnels are no longer in
36 active operation.

37 In May 2017, workers discovered a portion of Tunnel Number 1 had collapsed, prompting an immediate
38 response action to protect workers and the environment. A structural evaluation revealed the threat of
39 further failure of Tunnel Number 1. An interim stabilization measure to fill Tunnel Number 1 with
40 engineered grout was taken under Section J.4.5 of this contingency plan and Permit Condition
41 ~~HHV.25.A.1~~ of the Hanford Facility RCRA Permit. Grouting in Tunnel Number 1 was completed in
42 November 2017. Filling the tunnel void spaces with grout improved tunnel stability, provided additional
43 radiological protection, and increased durability while not precluding final closure actions. Tunnel
44 Number 1 will receive no new waste and will continue to store the existing encapsulated waste until final
45 closure.

At the same time, a structural evaluation also revealed the threat of future failure of Tunnel Number 2. To protect stored waste containers from potential damage caused by a tunnel failure event (e.g., puncture of a container by a falling structural member) and to prevent any associated release of dangerous waste constituents to the environment, an interim closure action to cover the stored waste and fill Tunnel Number 2 void spaces around the waste with engineered grout is being taken. No waste has been added to Tunnel Number 2 since 1996 and no waste will be added or removed, nor will personnel entry be permitted prior to grouting because of the threat of structural failure. Personnel entry will not be possible after grouting is completed.

J.1.6 Building Evacuation Route

The PUREX Storage Tunnels evacuation route is shown in Figure J.1.

J.2 Emergency Coordinators/Building Emergency Director (EC/BED)

Table J.1. Emergency Coordinator/Building Emergency Director^a

<u>Designation</u>	<u>Job title</u>	<u>Work location</u>	<u>Work phone</u>
<u>Primary</u>	<u>Facility Operations</u>	<u>MO-294</u>	<u>373-1355</u>

^aThe names and home phone numbers of all Emergency Coordinators/Building Emergency Directors are maintained at the single point-of-contact (the Hanford Patrol Operations Center) telephone number 373-3800 in accordance with the Hanford Facility RCRA Permit Condition II.A.4.

Emergency response will be directed by the EC/BED until the Incident Commander arrives. The incident command structure and staff with supporting on-call personnel fulfill the responsibilities of the EC/BED as discussed in WAC 173-303-360.

During events, facility personnel perform response duties under the direction of the EC/BED. The Incident Command Post (ICP) is managed by either the senior Hanford Fire Department member present on the scene or senior Hanford Patrol member present on the scene (security events only). These individuals are designated as the Incident Commander (IC) and as such have the authority to request and obtain any resources necessary for protecting people and the environment. The EC/BED becomes a member of the ICP and functions under the direction of the IC. In this role, the EC/BED continues to manage and direct facility operations.

A listing of the primary and alternate EC/BEDs by title, work location and work telephone numbers is identified in the Table J.1. The EC/BED is on the premises or is available through an “on-call” list 24 hours a day.

J.3 Implementation of the Plan

In accordance with WAC 173-303-360(2)(b), the BED ensures that trained personnel identify the character, source, amount, and areal extent of the release, fire, or explosion to the extent possible. Identification of waste can be made by activities that can include, but are not limited to, visual inspection of involved containers, sampling activities in the field, reference to inventory records, or by consulting with facility personnel. Samples of materials involved in an emergency might be taken by qualified personnel and analyzed as appropriate. These activities must be performed with a sense of immediacy and shall include available information.

The BED shall use the following guidelines to determine if an event has met the requirements of WAC 173-303-360(2)(d):

1. The event involved an unplanned spill, release, fire, or explosion,

AND

2.a The unplanned spill or release involved a dangerous waste, or the material involved became a dangerous waste as a result of the event (e.g., product that is not recoverable), or

1 2.b The unplanned fire or explosion occurred at the PUREX Storage Tunnels or transportation
2 activity subject to RCRA contingency planning requirements,

3 AND

4 3. Time-urgent response from an emergency services organization was required to mitigate the
5 event, or a threat to human health or the environment exists.

6 As soon as possible, after stabilizing event conditions, the BED shall determine, in consultation with the
7 Site contractor environmental single-point-of-contact, if notification to the Washington State Department
8 of Ecology is needed to meet WAC-173-303-360(2)(d) reporting requirements. If all of the conditions
9 under 1, 2, and 3 are met, notifications are to be made to Ecology. Additional information is found in
10 Attachment 4, Hanford Emergency Management Plan (DOE/RL-94-02), Section 4.2.

11 If review of all available information does not yield a definitive assessment of the danger posed by the
12 incident, a worst case condition will be presumed and appropriate protective actions and notifications will
13 be initiated. The BED is responsible for initiating any protective actions based on their best judgment of
14 the incident.

15 The BED must assess each incident to determine the response necessary to protect the personnel, facility,
16 and the environment. If assistance from Hanford Patrol, Hanford Fire Department, or ambulance units is
17 required, the Hanford Emergency Response Number (911 from offsite telephones or 373-0911 from
18 cellular telephones) must be used to contact the POC and request the desired assistance. To request other
19 resources or assistance from outside the Surveillance and Maintenance facilities, the POC business
20 number is used (373-3800).

21 **J.3.1 Dangerous and/or Mixed Waste**

22 A seismic event, explosion, tornado, structural failure, or an aircraft crash could cause damage to the
23 storage tunnels and could involve environmental exposure to mixed waste. These events are considered
24 the only credible sources of a release as the PUREX Storage Tunnels are unoccupied structures and there
25 are no continuous processes associated with waste storage. Following the failure of Tunnel Number 1
26 discovered in May 2017, the tunnel was filled with engineered grout. Tunnel Number 2 will undergo
27 interim closure and be stabilized with engineered grout. The grout encapsulates the stored waste and
28 reduces the potential for environmental exposure to mixed waste from the events described above to
29 occur. Grouting also removes the potential for further structural failure of the tunnels because the grout
30 totally encapsulates the waste and fills the tunnel to within a short distance from the interior roof. Grout
31 filled Tunnel Number 1 to within approximately 6 inches from the roof timbers. Similar conditions will
32 exist after grouting of Tunnel Number 2. In the event that damage to the exterior of either tunnel were to
33 occur, the soil overburden would fill the remaining gap and preclude the release of dangerous or mixed
34 waste to the environment.

35 Emergency responses for credible dangerous and/or mixed waste releases can be found in the following
36 sections.

37 **J.3.2 Fire or Explosion**

38 The fire or explosion hazard associated with the PUREX Storage Tunnels is considered to be very low
39 because of the minimal amount of combustibles stored within the tunnels and the lack of an ignition
40 source.

- 41 • Because of the potential for mixed waste to leach, water is not the preferred choice for fire
42 control. Filling the tunnels with grout during the response action for Tunnel Number 1 and
43 interim closure for Tunnel Number 2 further isolates the waste from ignition sources and
44 essentially eliminates the air supply required to sustain a fire inside the tunnels. Should the fire
45 continue to spread, heavy equipment and cranes will be called to the scene to cover burning
46 segments of the tunnels. In addition, the following actions are taken in the event of a fire or
47 explosion:

- 1 - The single point-of-contact (911 from site office phones or 373-0911 from cellular phones) is
2 notified immediately.
- 3 - The EC/BED proceeds directly to the ICP and sends a representative to meet the Hanford Fire
4 Department.
- 5 - The EC/BED obtains all necessary information pertaining to the incident
- 6 - Depending on the severity of the event, the EC/BED or his/her designee may be required to
7 provide notifications to the site contractor environmental single point of contact, which in
8 turn notifies offsite agencies and/or the occurrence notification center informing them as to
9 the extent of the emergency (including estimates of mixed waste quantities released to the
10 environment) and any actions necessary to protect nearby buildings and/or structures.
- 11 - Depending on the severity, the EC/BED requests activation of the affected area ICP to
12 establish organizations to provide assistance from DOE-RL, other Hanford site contractors,
13 and outside agencies (if 911 from site office phones or 373-0911 from cellular phones is
14 called, the ICP will automatically be activated).
- 15 - The Hanford Patrol establishes roadblocks within the area to route traffic away from the
16 emergency scene.
- 17 - If necessary, Hanford Fire Department medical personnel remove injured personnel to a safe
18 location, apply first aid, and prepare the injured for transport to medical aid stations or to
19 local hospitals.
- 20 • Depending on the magnitude of a natural phenomena event, fire, or an explosion, damage to the
21 storage tunnels is possible. The hazards could involve personnel and environmental exposure to
22 mixed waste. In the event of such an occurrence, a recovery plan will be developed.

23 **J.3.3 Seismic Event/Tornado**

24 Depending on the magnitude of the seismic event or tornado, damage to the storage tunnels is possible.
25 The hazards could involve personnel and environmental exposure to mixed waste.

26 Emergency responses for seismic events and tornadoes would be the same as those for a fire or explosion.
27 Refer to Section J.3.2.

28 **J.3.4 Aircraft Crash**

29 In addition to the potential for serious injuries or fatalities involved with an aircraft crash, damage to the
30 storage tunnels is possible, which could result in a fire, explosion, or a mixed waste release. The hazards
31 could involve personnel and environmental exposure to mixed waste.

32 Refer to Section J.3.2 for emergency responses for fires and explosions.

33 **J.3.5 Bomb Threat/Explosive Device**

34 Depending on the magnitude of an explosion, damage to the storage tunnels is possible. The hazards
35 could involve personnel and environmental exposure to mixed waste. For emergency responses, refer to
36 Section J.3.2 for explosions.

37 **J.3.6 Damaged Dangerous and/or Mixed Waste Shipment**

38 The PUREX Storage Tunnels no longer receive waste; therefore, no response to damaged shipments is
39 required.

40 **J.4 Unit/Building Emergency Response Procedures**

41 The initial response to any emergency is to immediately protect the health and safety of persons in the
42 area. Identification of released material is essential to determine appropriate protective actions.
43 Containment, treatment, and disposal assessment are secondary responses.

Emergency action levels associated with event classifications applicable to the PUREX Storage Tunnels include the following. A Site Area Emergency can be declared for a hazardous material release resulting from a fire, explosion, operational accident involving a sufficient quantity of hazardous material, natural hazards (i.e., seismic event and/or tornado/high winds), aircraft crash, discovery or detonation of an explosive device, hostage situation or armed intruders, or catastrophic loss of confinement. An Alert can be declared for a fire, explosion, operational accident involving a sufficient quantity of hazardous material, natural hazards (i.e., seismic event and/or tornado/high winds), aircraft crash, or accident resulting in facility damage that threatens a confinement structure. The preceding sections describe the process for implementing basic protective actions as well as descriptions of response actions for events.

J.4.1 Notification

Notification will be made in accordance with the requirements of WAC 173-303-145 and WAC 173-303-360.

J.4.2 Identification of Released/Spilled Materials

Methods for identifying the character, source, amount, and areal extent of any materials when there has been a release or spill to the environment, a fire, or an explosion are outlined in, Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02), Section 4.2.

J.4.3 Prevention of Recurrence or Spread of Fires, Explosions, Releases

The EC/BED, as part of the incident command structure, takes the steps necessary to ensure that a secondary release, fire, or explosion does not occur. The following actions are taken:

- Isolate the area of the initial incident by shutting off power, closing off ventilation systems, if still operating, etc., to minimize the spread of a release and/or the potential for a fire or explosion
- Inspect surface of the tunnels for leaks, cracks, or other damage
- Contain and isolate residual mixed waste material
- Cover or otherwise stabilize areas where residual released mixed waste remains to prevent migration or spread from wind or precipitation run-off
- Install new structures, systems, or equipment to enable better management of mixed waste
- Reactivate adjacent operations in affected areas only after cleanup of residual mixed waste is achieved.

J.4.4 Termination of Event

For events where the Hanford Emergency Operations Center (Hanford-EOC) is activated, the RL Emergency Manager has the authority to declare event termination. This decision is based on input from the EC/BED, Incident Commander, and other emergency response organization members. For events where the Hanford-EOC is not activated, the Incident Command structure and staff will declare event termination.

J.4.5 Incident Recovery and Restart of Operations

A recovery plan is developed when necessary. A recovery plan is needed following an event where further risk could be introduced to personnel, the facility, or the environment through recovery action and/or to maximize the preservation of evidence. Depending on the magnitude of the event and the effort required to recover from it, recovery planning may involve personnel from RL and other contractors. If a recovery plan is required, it is reviewed by appropriate personnel and approved by a Recovery Manager before restart. Restart of operations is performed in accordance with the approved plan. While no active operations occur at the PUREX Storage Tunnels, approval may be required to restart activities in adjacent facilities.

1 If this plan was implemented for a WAC emergency (refer to Section J.3), the Washington State
2 Department of Ecology must be notified before operations can resume. Attachment 4, Hanford
3 Emergency Management Plan (DOE/RL-94-02), Section 5.1, discusses different reports to outside
4 agencies. This notification is in addition to other required reports and must include information
5 documenting the following conditions:

- 6 • There are no incompatibility issues with the waste and released materials from the incident.
- 7 • All the equipment has been clean, fit for its intended use, and placed back into service.

8 Additional information that Ecology requests regarding these restart conditions may be included in the
9 required 15-day report identified in WAC 173-303-360(2)(k).

10 For emergencies not involving activation of the Hanford-EOC, the EC/BED ensures that conditions are
11 restored to normal before operations are resumed. An onsite Recovery Manager could be appointed at the
12 discretion of RL to restore conditions to normal. This process is detailed in Attachment 4, Hanford
13 Emergency Management Plan (DOE/RL-94-02), Section 9.0. The makeup of this organization depends
14 on the extent of the damage and its effects. The onsite recovery organization will be appointed by the
15 appropriate contractor's management.

16 **J.4.6 Incompatible Waste**

17 After an event, the EC/BED or the onsite recovery organization ensures that no waste that might be
18 incompatible with the released material is treated, stored, and/or disposed of until cleanup is completed.
19 Cleanup actions are taken by facility personnel or other assigned personnel. Attachment 4, Hanford
20 Emergency Management Plan (DOE/RL-94-02), Section 9.2.3, describes actions to be taken.

21 Waste from cleanup activities is designated and managed as newly generated waste. A field check for
22 compatibility before storage is performed, as necessary. Incompatible wastes are not placed in the same
23 container. Containers of waste are placed in storage areas appropriate for their compatibility class.

24 If incompatibility of waste was a factor in the incident, the EC/BED or the onsite recovery organization
25 ensures that the cause is corrected.

26 **J.4.7 Post Emergency Equipment Maintenance and Decontamination**

27 All equipment used during an incident is decontaminated (if practicable) or disposed of as spill debris.
28 Decontaminated equipment is checked for proper operation before storage for subsequent use.
29 Consumables and disposed materials are restocked. Fire extinguishers are recharged or replaced.

30 The EC/BED ensures that all equipment is cleaned and fit for its intended use before operations are
31 resumed. Depleted stocks of neutralizing and absorbing materials are replenished, self-contained
32 breathing apparatus are cleaned and refilled, protective clothing is cleaned or disposed of and restocked,
33 etc.

34 **J.5 Emergency Equipment**

35 Because no personnel entry is permitted into the storage tunnels, no permanent emergency equipment,
36 communications equipment, warning systems, personal protective equipment, or spill control and
37 containment supplies are located in the tunnels.

38 During an emergency response event, personnel use portable emergency equipment, which could include
39 heavy equipment and cranes (Section J.3.2). Also, for such operations, work plans are followed and
40 pre-job safety meetings take place.

41 **J.6 Coordination Agreements**

42 The DOE-RL has established a number of coordination agreements, or memoranda of understanding
43 (MOU) with various agencies to ensure proper response resource availability for incidents involving the
44 Hanford Site. A description of the agreements is contained in Attachment 4, Hanford Emergency
45 Management Plan (DOE/RL-94-02), Table 3-1.

1 **J.7 Required Reports**

2 Post incident written reports are required for certain incidents on the Hanford Site in accordance with
3 Attachment 4, Hanford Emergency Management Plan (DOE/RL-94-02), Section 5.1.

4

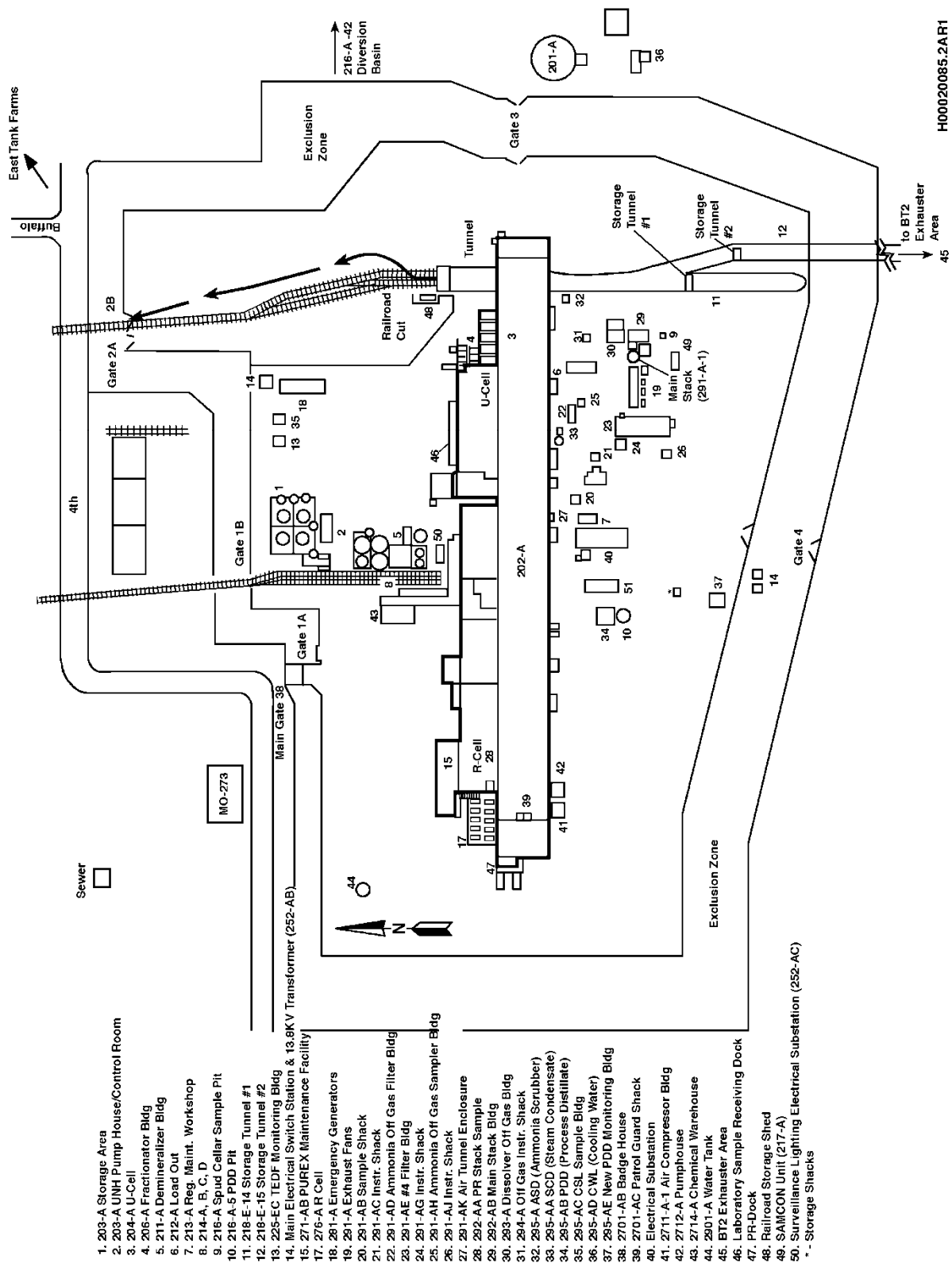


Figure J.1. PUREX Storage Tunnels Evacuation Route

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