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APPENDIX C
BULK VITRIFICATION TEST AND DEMONSTRATION
FACILITY CONTINGENCY PLAN

May 2004

1 This Contingency Plan covers activities of the Bulk Vitrification Test and Demonstration Facility
 2 located west of the 241-S Tank Farm.

3 This Contingency Plan also serves to satisfy a broad range of requirements (e.g., *Washington*
 4 *Administrative Code* 173-303, Occupational Safety and Health Administration standards
 5 [29 CFR 1910], *Toxic Substances Control Act* [40 CFR 761] and U.S. Department of Energy
 6 Orders). Any revisions made to portions of this Contingency Plan document that are not
 7 governed by the requirements of WAC 173-303 will not be considered as a modification subject
 8 to WAC 173-303-830.

9

10 Approved:

11

12

13 _____
Facility Management

_____ Date

14

15

16 _____
Environmental Compliance Officer

_____ Date

17

18

19 _____
Emergency Management

_____ Date

20

21

22 _____
Hanford Fire Department

_____ Date

23

24

25 This Contingency Plan will be reviewed at least annually and updated if necessary by facility
 26 management. The building emergency director has the authority to carry out the provisions of
 27 the Contingency Plan.

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TABLES

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ACRONYMS

1		
2	ALARA	as low as reasonably achievable
3	BED	building emergency director
4	CFR	<i>Code of Federal Regulations</i>
5	DBVS	demonstration bulk vitrification system
6	DOE	U.S. Department of Energy
7	DOE-RL	DOE Richland Operations Office
8	Ecology	Washington State Department of Ecology
9	EOC	Emergency Operations Center
10	HAZOP	Hazard and Operability Study
11	IC	Incident Commander
12	ICP	Incident Command Post
13	L	liter
14	MSDS	material safety data sheet
15	PHA	preliminary hazards analysis
16	POC	Patrol Operations Center
17	TBD	to be determined
18	WAC	<i>Washington Administrative Code</i>
19		

1 **C.1.0 GENERAL INFORMATION**

2 This Contingency Plan describes the facility hazards and the basic responses to upset and/or
3 emergency conditions within the Test and Demonstration Facility. Waste treatment activities
4 using the Demonstration Bulk Vitrification System (DBVS) will be conducted under a research,
5 development, and demonstration project. The Test and Demonstration Facility is owned and
6 operated by the U.S. Department of Energy (DOE), Office of River Protection. It is located west
7 of the 241-S Tank Farm in the 200 West Area within the Hanford Site, a 560-square mile
8 (1,450-square kilometer) DOE site in southeastern Washington State.

9 The Contingency Plan describes responses to events that may include spills or releases as a result
10 of processing, fires and explosions, transportation activities, movement of materials, packaging,
11 storage of hazardous materials, and natural phenomena. When used in conjunction with
12 DOE/RL-94-02, *Hanford Emergency Management Plan*, this Contingency Plan meets the
13 requirements for contingency planning as required by *Washington Administrative Code*
14 (WAC) 173-303.

15 **FACILITY NAME**

16 Bulk Vitrification Test and Demonstration Facility
17 U.S. Department of Energy Hanford Site
18 River Protection Project, Tank Farms

19 **FACILITY LOCATION**

20 Benton County, Washington; within the 200 Area of the Hanford Site

21 **OWNER/OPERATOR**

22 U.S. Department of Energy
23 Office of River Protection
24 P.O. Box 450
25 Richland, Washington 99352

26 **FACILITY MANAGER/CO-OPERATOR**

27 CH2M HILL Hanford Group, Incorporated
28 P.O. Box 1500
29 Richland, Washington 99352

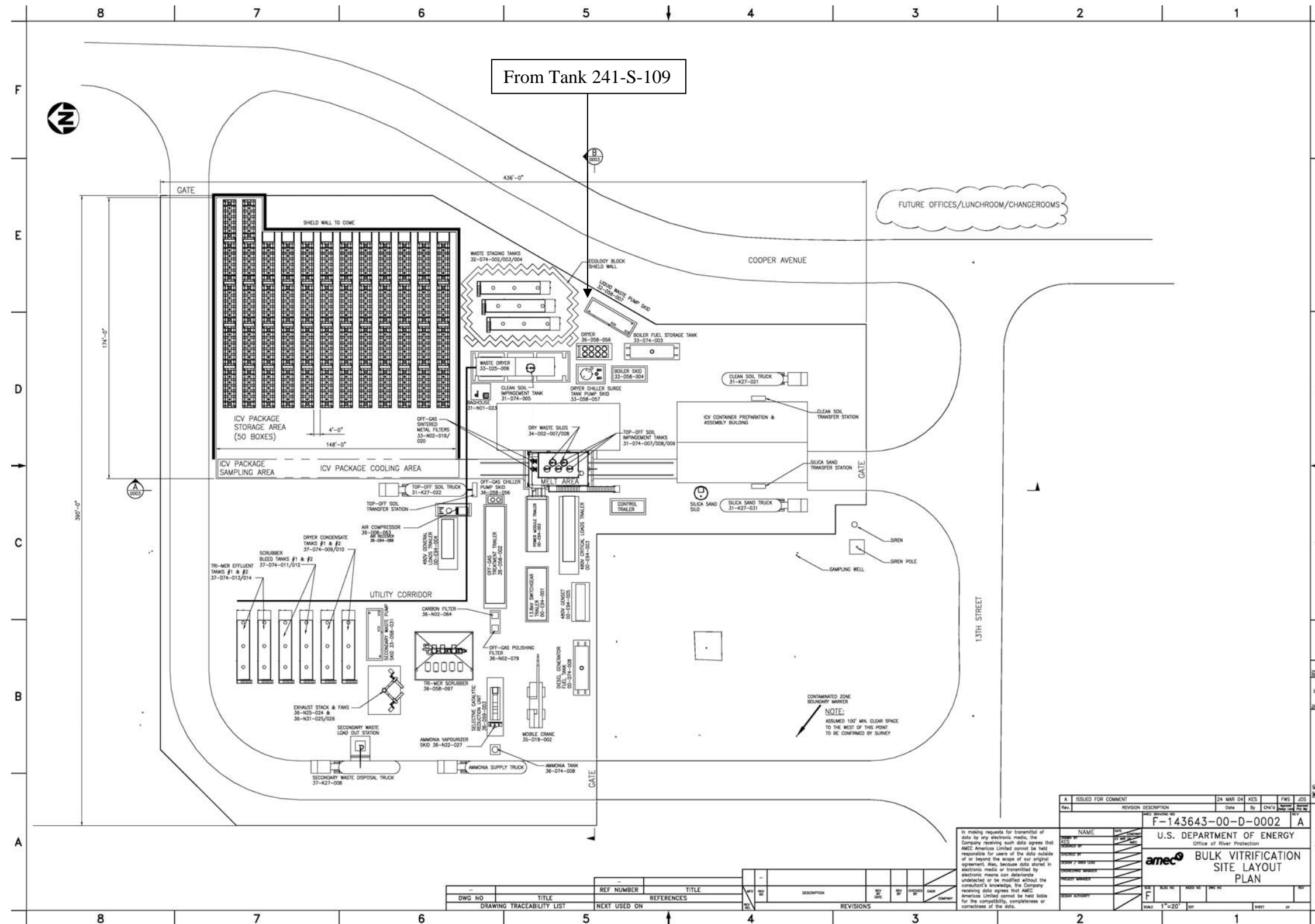
30 **C.2.0 DESCRIPTION OF THE UNITS AND OPERATIONS**

31 The location of the planned site for the Test and Demonstration Facility is shown in Figure C-1.
32 The wastes planned for treatment are currently stored in Tank 241-S-109, a 2,839,050-liter (L)
33 (750,000-gal) single-shell tank located in the 200 West Area. Pretreated waste from Tank
34 241-S-109 will be transferred directly to the planned facility.

1 The DBVS will receive a salt solution at the waste receipt tanks. The salt solution will be mixed
2 with appropriate glass formers, and excess water will be removed from the mixture by a
3 mixer/dryer unit. The mixture will be distributed into a prepared waste container, where
4 electrodes that penetrate the waste mixture will vitrify the waste via resistive heating. The
5 vitrified mass will be allowed to cool before being moved to a storage area within the Test and
6 Demonstration Facility for waste product testing.

7

Figure C-1. Planned Site Location of the Test and Demonstration Facility
OFFICIAL USE ONLY



1 **C.3.0 IMPLEMENTATION OF THE PLAN**

2 **C.3.1 BUILDING EMERGENCY DIRECTOR**

3 Emergency response will be directed by the building emergency director (BED) until the
4 incident commander arrives. The BED position will be staffed 24 hours a day by the Shift
5 Manager. The BED will utilize the Incident Command System supplemented by the Test and
6 Demonstration Facility-specific emergency response procedures described herein. The Incident
7 Command System and trained staff will be used in conjunction with on-call personnel to fulfill
8 the responsibilities of the Emergency Coordinator as described in WAC 173-303-360. The BED
9 becomes a member of the Incident Command Post and functions under the incident commander.
10 In this role, the BED continues to manage and direct operations at the Test and Demonstration
11 Facility.

12 A listing of BEDs by title, work location and work telephone number is contained in Table C-1
13 of this plan. The BED is on the premises or is available through an “on-call” list 24 hours a day.
14 Names and home telephone numbers of the BEDs are available from the Patrol Operations
15 Center.

Table C-1. BED Contact Information

Name	Title	Site Telephone Number(s)	Home Telephone Number(s)
To be provided prior to start of operation.			

16
17 **C.3.2 DETERMINATION OF EVENT**

18 The BED ensures that trained personnel identify the character, source, amount, and areal extent
19 of the release, fire, or explosion to the extent possible. Identification of waste can be made by
20 activities that can include, but are not limited to, visual inspection of involved containers,
21 sampling activities in the field, reference to inventory records, or by consulting with facility
22 personnel. Samples of materials involved in an emergency might be taken by qualified
23 personnel and analyzed as appropriate. These activities must be performed with a sense of
24 immediacy and shall include available information.

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

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

28 AND

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

32 OR

1 2.b The unplanned fire or explosion occurred at the waste processing equipment or
2 storage area or transportation activity subject to RCRA contingency planning
3 requirements

4 AND

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

7 As soon as possible, after stabilizing event conditions, the BED shall determine, in consultation
8 with the tank farm site contractor environmental point-of-contact, if notification to Ecology is
9 needed to meet WAC-173-303-360 (2)(d) reporting requirements. If all of the conditions under
10 1, 2, and 3 above are met, notifications are to be made to Ecology. Additional information
11 concerning emergency response reporting requirements is found in *Hanford Emergency*
12 *Management Plan*, Section 4.2 (DOE/RL-94-02). Any release above the “reportable quantity”
13 must also be reported to the National Response Center. If review of all available information
14 does not yield a definitive assessment of the danger posed by the incident, a worst-case condition
15 will be presumed and appropriate protective actions and notifications will be initiated. The BED
16 is responsible for initiating any protective actions based on his or her best judgment of the
17 incident.

18 The BED will assess each incident to determine the response necessary to protect personnel, the
19 facility, and the environment. If assistance from Hanford Patrol, Hanford Fire Department, or
20 ambulance units is required, the Hanford Emergency Response Number (9-1-1) must be used to
21 contact the Patrol Operations Center and request the desired assistance. To request other
22 resources or assistance from outside the Test and Demonstration Facility, the Patrol Operations
23 Center business number is used (373-3800).

24 **C.3.3 EMERGENCY RESPONSE INTEGRATION AND COORDINATION**

25 The emergency response approach, procedures, and implementation of the Contingency Plan will
26 typically depend on the assessment provided by onsite, trained personnel. However, it is the
27 Shift Manager (acting as the BED) that will, depending on the extent and nature of the incident,
28 identify the need for additional support services from other onsite operations and/or
29 200 Area-wide emergency resources. Effective integration and coordination between the
30 operations occurring at the Test and Demonstration Facility and other operations being
31 conducted in the 200-Area will be essential to maximize response speed and efficiency in dealing
32 with possible emergency response incidents. This coordinated response will be in place to
33 respond to emergency incidents directed to:

- 34 • Saving human lives
- 35 • Preservation of the environment
- 36 • Protection of property
- 37 • Prevention of operation disruption and incident escalation
- 38 • Restoring normal conditions as soon as possible
- 39 • Assessing the effectiveness of the response for future incidents.

1 It will be the responsibility of the Shift Manager to develop, at the operational level, the
2 necessary steps and measures required to assess the emergency incident and determine the
3 command, control, and coordination requirements with other entities working nearby that can
4 respond to an incident occurring at the Test and Demonstration Facility. Conversely, a hazard or
5 incident that could impact the Test and Demonstration Facility operations will require integration
6 and coordination by other BEDs with the Facility BED.

7 **C.4.0 FACILITY HAZARD IDENTIFICATION**

8 The operational strategy for the Test and Demonstration Facility activities consists of a design
9 concept and operational approach that has as the primary goal of safety to the on-site workers
10 and general public. The design and operations approach will be developed in accordance with
11 Hanford Site practices to ease transition from design and system testing to operations. Chemical
12 and radiological constituent hazards that could occur during Test and Demonstration Facility
13 project activities will be identified in a preliminary hazards analysis (PHA) using information
14 developed from the Hazard and Operability Study (HAZOP) sessions. The PHA and HAZOP
15 sessions will be conducted based on DBVS treatment equipment design following guidance
16 provided in the *Implementation Guide for Use in Developing Documented Safety Analysis to*
17 *Meet Subpart B of 10 CFR 830* (DOE G 421.1-2). In addition, a hazards assessment evaluation
18 is also required by Section 1.3.3.2 of DOE-RL-94-02. The PHA and hazards assessment analysis
19 will be conducted to:

- 20 • Identify the key configuration and operating assumptions needed to evaluate
21 radiological, toxicological, and other impacts to the public and workers relative to
22 activities associated with Test and Demonstration Facility activities.
- 23 • Determine facility hazard classification as defined in DOE-STD-1027-92.
- 24 • Verify that the design identifies and addresses fundamental hazards of the process.
- 25 • Evaluate hazards and identify available controls and control strategies for safe
26 handling of the mixed waste materials and equipment to be used.
- 27 • Identify accident scenarios including typical and representative scenarios for this type
28 of waste treatment and storage use as well as scenarios specifically related to Test and
29 Demonstration Facility activities.
- 30 • Identify all safety structures, systems, and components.

31 The objective of this section is to describe, in general terms, the hazards that pose significant risk
32 to human health and the environment. Prior to the introduction of mixed waste to the Test and
33 Demonstration Facility, this Plan will be reviewed and updated based on findings from the
34 hazards analysis and review of the 100% completed design package.

35 **C.4.1 MIXED WASTE HANDLING**

36 The basis for safe handling of mixed tank waste being treated, stored, and tested in the Test and
37 Demonstration Facility will be the design, PHA findings, requirements of 29 *Code of Federal*
38 *Regulations* (CFR) 1910 related to construction and occupational safety and health, and the
39 environmental safety and regulatory requirements in accordance with WAC 173-303. As low as

1 reasonably achievable (ALARA) concepts for radiation exposure control will be used for design
2 in accordance with 10 CFR 835 and will be consistent with practices called out in DOE-STD-
3 1128-98 for radiological protection. In conjunction with the requirements stated in WAC 173-
4 303, ALARA principles will be used as a guide for the procedures that address the management
5 of mixed waste and will be fully developed prior to the commencement of operations. The Test
6 and Demonstration Facility will be designed as a contact handled facility in accordance with
7 expected dose rates.

8 **C.4.2 INDUSTRIAL HAZARDS**

9 The basis for safe use of the systems, components, and equipment for the treatment and storage
10 of mixed waste will be the design package, PHA findings, occupational safety and health
11 requirements stated in 29 CFR 1910, provisions of WAC 173-303, and material safety data
12 sheets (MSDSs). The procedures that address these hazards will be in place prior to
13 implementation of this Plan. Site operators and workers will be trained in the safe use and
14 handling of equipment and systems provided.

15 **C.4.3 PERSONNEL EXPOSURE**

16 As applicable, radiation shielding will be incorporated into the design where a large mass of
17 waste creates a potential hazard to personnel.

18 **C.4.4 HAZARDOUS MATERIALS**

19 Potentially hazardous materials will be used during normal operations, maintenance, and support
20 of Test and Demonstration Facility activities. These materials include diesel fuels, oils, solvents,
21 acids, caustics, and sorbents. MSDSs will be available on-site for review and use by the
22 operators and workers.

23 In conjunction with the MSDSs, safe design of the plant, PHA findings using the HAZOP
24 sessions, 29 CFR 1910, and WAC 173-303 provisions will be the basis for safe use of the
25 materials on-site. Procedures will be in place and applicable training conducted to address the
26 handling and use of hazardous materials before the introduction of these materials.

27 **C.5.0 NATURAL PHENOMENA**

28 The following information presents a very basic standard approach to the potential hazards of
29 natural phenomena type events.

30 **C.5.1 SEISMIC EVENT**

31 Depending on the magnitude of the event, severe structural damage can occur resulting in serious
32 injuries or fatalities and the release of dangerous and/or radioactive materials to the environment.
33 Individuals should remain calm and stay away from windows, steam lines, and hazardous
34 material storage locations and onsite container storage areas. Once the ground acceleration has
35 subsided, individuals should evacuate carefully and assist personnel needing help. The location
36 of any trapped individuals should be reported to the BED or to 9-1-1 (or 509-373-3800 if using a

1 cell phone). The BED will take whatever actions are necessary to minimize damage and
2 personnel injuries. Responsibilities include:

- 3 • Coordinating searches for personnel and potential hazard conditions (e.g., fires, spills)
- 4 • Conducting accountability of personnel
- 5 • Securing utility and facility operations
- 6 • Arranging rescue efforts and notifying 9-1-1 for assistance
- 7 • Determining if hazardous materials were released
- 8 • Warning other facilities and implementing protective actions if release of hazardous
9 materials pose an immediate danger
- 10 • Providing personnel and resource assistance to other facilities, if required and
11 possible.

12 **C.5.2 HIGH WINDS/TORNADOES**

13 High winds or tornadoes may cause structural damage to systems containing dangerous waste
14 and/or radioactive materials resulting in a release to the environment. High winds or tornadoes
15 impact personnel as a respiratory hazard; by reducing visibility; by causing doors, gates to
16 open/close unexpectedly; and from flying objects. Upon notification of impending high winds,
17 the BED will take steps necessary to secure all outdoor waste and dangerous material containers
18 and storage locations. Ventilation, utilities, and operations will be shut down as appropriate to
19 lessen the severity of impact.

20 **C.5.3 FLOOD**

21 The 200 West Area is well above the projected flood elevations for the Columbia and Yakima
22 Rivers.

23 **C.5.4 RANGE FIRE**

24 The hazards associated with a range fire are the same as those associated with a building fire plus
25 potential site restrictions and travel hazards such as poor visibility. Response to range fires is
26 handled by preventive measures (i.e., keeping hazardous materials and waste accumulation areas
27 free of combustible materials such as weeds and brush). If a range fire should come within the
28 vicinity of the Test and Demonstration Facility the response will be as described in Section
29 C.6.4.4.

30 **C.5.5 AIRCRAFT CRASH**

31 The response to an aircraft crash is the same as for a fire and/or explosion (Section C.6.4.4).

32 **C.6.0 INCIDENT RESPONSE**

33 The steps identified in the following description of actions do not have to be performed in the
34 sequence presented, because the sequence of actual incident events cannot be anticipated.

1 **C.6.1 EVACUATION OF THE TEST AND DEMONSTRATION FACILITY**

2 If an evacuation is ordered or the evacuation siren sounds at the Test and Demonstration Facility
3 personnel shall proceed to the staging areas as depicted in Figure C-2. The Test and
4 Demonstration Facility may need to be evacuated when conditions warrant (such as fire,
5 explosion, release of mixed waste). Evacuation will be initiated by automatic alarms or directed
6 by the BED. The evacuation alarm is a steady siren signal. The BED will use the Test and
7 Demonstration Facility emergency response procedures, experience, and training to determine
8 when conditions warrant evacuation.

9 The BED or staging area manager will direct the evacuation; however, to ensure that evacuations
10 will be conducted promptly and safely, all personnel shall be familiar with the correct evacuation
11 procedure. The BED will initiate the evacuation of the Test and Demonstration Facility area
12 with a verbal announcement or by manually initiating an evacuation alarm. As conditions
13 warrant, telephoning the Patrol Operation Center (POC), using either 9-1-1 (preferred) or
14 509-373-3800 will activate the 200 Area evacuation alarms. The BED will ascertain if an
15 alternate staging area should be used based on the location of the emergency condition, wind
16 direction, and tank farm emergency procedures.

17 Area evacuations are either rapid or controlled, as detailed in the following steps. Operators and
18 other site workers at the Test and Demonstration Facility will be trained on evacuation routes
19 and procedures. Routes will be clearly marked and maintained clear of all obstructions. The
20 BED will determine the operating configuration of the Test and Demonstration Facility and
21 identify any additional protective actions needed for limiting exposure of personnel to the
22 hazard.

23 Staging areas will be designated when the site layouts have been finalized. Staging areas will be
24 based on prevailing wind direction, gate locations, and roadways leading to and from the sites.
25 Alternate staging areas will be made available for use if the wind direction or other
26 circumstances dictate.

27

1 For any evacuation, accountability will be performed at the staging area using personnel given
2 standing assignments and having training in the Test and Demonstration Facility emergency
3 response procedures. These personnel will report to the BED via radio communication after
4 conducting a head count. When personnel cannot be accounted for, personnel properly trained in
5 emergency response operations will conduct active searches. When possible, the following steps
6 must be conducted concurrently.

7 **C.6.2 AREA EVACUATION PROCEDURE**

8 The area evacuation procedure includes the following:

- 9 • Halt any operations or work and place the equipment and structures in a safe condition.
10 Use emergency shutdown procedures for rapid evacuation.
- 11 • Use whatever means are available (bullhorns, runners, etc.) to pass the evacuation
12 information to personnel.
- 13 • Evacuate personnel to the staging area; group personnel as follows: potentially
14 contaminated protective clothing, keys immediately available for vehicles, those needing
15 rides. Assist personnel that are temporary/permanently disabled.
- 16 • Conduct personnel accountability. If unable to account for personnel, report personnel
17 accountability results to the Hanford-Emergency Operations Center (Hanford-EOC)
18 (373-1786, 373-3876, 376-8612, 376-4712).
- 19 • Inform Incident Commander (IC) of any potentially affected personnel (i.e., injured,
20 contaminated, exposed, etc.) once the IC arrives at the Incident Command Post (ICP).
- 21 • Relay pertinent evacuation information (routes, destination, etc.) to drivers.
- 22 • Dispatch vehicles as soon as the vehicles are loaded.
- 23 • Report status to the Hanford-EOC, request additional transportation if required, and
24 report if any personnel remain who are performing late shutdown duties.

25 **C.6.3 TAKE COVER PROCEDURES**

26 The BED will initiate a local take cover notice for the RD&D project area using the facility
27 communications systems. In the 200 Area, the BED will initiate the take cover alarm by
28 telephoning the POC, using either 9-1-1 (preferred) or 509-373-3800. The take cover alarm is a
29 wavering siren signal. A take cover order will be based on the operating configuration, weather
30 conditions, type and duration of release and other conditions, as applicable to the event and the
31 associated hazard. The intent of the take cover order is to minimize personnel exposure to
32 hazardous materials and move personnel to locations where additional instructions can be
33 provided.

34 When the take cover alarm is activated, personnel will stop work, place operating equipment in a
35 safe condition, and take cover in the nearest building capable of providing shelter from an
36 airborne hazard. Exterior doors and windows will be closed; and heating, ventilation, and air
37 conditioning systems will be secured.

1 **C.6.4 RESPONSE TO TEST AND DEMONSTRATION FACILITY OPERATIONS**
2 **EMERGENCIES**

3 Depending on the severity of the event, the BED reviews site-wide and Test and Demonstration
4 Facility emergency response procedure(s), and as required, categorizes and/or classifies the
5 event. If necessary, the BED initiates area protective actions and Hanford Site Emergency
6 Response Organization activation. The steps identified in the following description of actions do
7 not have to be performed in sequence because of the unanticipated sequence of incident events.

8 **C.6.4.1 Loss of Utilities**

9 A case-by-case evaluation is required for each event to determine loss of utility impacts. When a
10 BED determines a loss of utility impact, actions are taken to ensure dangerous and/or mixed
11 waste is being properly managed, to the extent possible, given event circumstances.
12 As necessary, the BED will stop operations and take appropriate actions until the utility is
13 restored.

14 Should there be a partial or total loss of electrical power to the Test and Demonstration Facility,
15 automatic measures and features as designed will ensure the treatment units and support systems
16 are in a safe operational configuration (defined as a shutdown to minimal operations that will
17 prevent releases and prevent unnecessary damage to the equipment). Upon loss of power, the
18 backup power system will automatically be engaged.

19 With any loss of the raw water system, operations will be restricted until adequate process water
20 is available.

21 The BED, in conjunction with the emergency response or incident command personnel, will
22 undertake the following actions in the event of a ventilation system failure:

- 23 • Locate the source of the problem and take necessary steps to control the event
- 24 • Ensure appropriate areas have been evacuated
- 25 • Monitor contamination levels in the plant
- 26 • Restore ventilation system.

27 **C.6.4.2 Major Process Disruption or Loss of Plant Control**

28 If there is a major process disruption, the BED will be notified while an attempt is made to return
29 the affected Test and Demonstration Facility activities to service. The BED will compare the
30 situation to criteria provided in the facility categorization/classification procedure to determine
31 whether an operational emergency is occurring. If it is determined that an operational
32 emergency is in progress, the BED will make the appropriate categorization/classification,
33 initiate protective actions, begin the notification process, and request that the emergency
34 response action be activated. The system condition will be addressed, and mitigative/corrective
35 actions will be implemented.

1 **C.6.4.3 Pressure Release**

2 On discovery of an existing or potential pressure hazard at the Test and Demonstration Facility
3 activities area, ensure the following response:

- 4 • Notify personnel to leave the area of the hazard
- 5 • Inform the BED
- 6 • Evacuate affected areas.

7 Perform sampling or testing in accordance with recommendations from engineering and
8 industrial safety, and (if indicated) repackaging any containers with pressure buildup.

9 **C.6.4.4 Fire and/or Explosion**

10 In the event of a fire, the discoverer activates a fire alarm (pull box); calls 9-1-1 (373-3800 if
11 using a cellular phone) or verifies that 9-1-1 has been called. Automatic initiation of a fire alarm
12 (through the smoke detectors and sprinkler systems) is also possible.

- 13 • Unless otherwise instructed, personnel shall evacuate the area by the nearest safe exit
14 and proceed to the designated staging area for accountability.
- 15 • On actuation of the fire alarm, ONLY if time permits and depending on the location
16 and severity of the fire, trained and certified operations personnel may initiate
17 equipment shutdown, secure waste, and lock up classified materials (or hand-carry
18 them out). The alarm automatically signals the Hanford Fire Department.
- 19 • The BED proceeds directly to the ICP, obtains all necessary information pertaining to
20 the incident, and sends a representative to meet Hanford Fire Department.
- 21 • The BED provides a formal turnover to the IC, when the IC arrives at the ICP.
- 22 • The BED informs the Hanford Site Emergency Response Organization as to the
23 extent of the emergency (including estimates of dangerous waste, mixed waste, or
24 radioactive material quantities released to the environment).
- 25 • If operations are stopped in response to the fire, the BED ensures that systems are
26 monitored for leaks, pressure buildup, gas generation, and ruptures.

27 The following is representative of the type of information that the BED may be called on to
28 provide to the incident command structure or other response agencies:

- 29 • Location and health of personnel, including missing personnel and possible locations
30 for fire fighters to search for them.
- 31 • Location and severity of fire, including character, exact source, and the amount, area,
32 and extent of any released materials.
- 33 • Known hazardous conditions (such as radiological, non-radiological, electrical,
34 thermal, flammable materials, pressurized cylinders, toxic gas, pressure systems,
35 batteries, radiation areas).
- 36 • Test and Demonstration Facility operating status.

- 1 • Utility systems status.
- 2 • Layout of the Test and Demonstration Facility.

3 The BED may be called upon to assist with certain activities, including the following:

- 4 • Conduct radiological monitoring, surveys, sampling and decontamination in concert
5 with Test and Demonstration Facility activities radiological control personnel.
- 6 • Support firefighter activities as required.
- 7 • Notification as required in accordance with plant procedures and DOE/RL-94-02,
8 Section 5.1.1.

9 Following a fire and/or explosion, WAC 173-303-640(7) will be addressed for the Test and
10 Demonstration Facility tank systems that may have been affected regarding fitness for use.

11 **C.6.4.5 Hazardous Materials, Dangerous and/or Mixed Waste Spill or Release**

12 Spills can result from many sources including process leaks, tank and/or container spills or leaks,
13 damaged packages or shipments, liquid waste transfer and transportation, or personnel error.
14 Spills or releases of mixed waste are complicated by the need to deal with the extra hazards
15 posed by the presence of radioactive materials.

16 The discoverer notifies the BED and initiates “SWIMS” response:

- 17 • Stops work
- 18 • Warns others in the vicinity
- 19 • Isolates the area
- 20 • Minimizes the spill if possible
- 21 • Secures ventilation.
- 22 • The BED determines whether emergency conditions exist requiring response from the
23 Hanford Fire Department, based on classification of the spill and injured personnel,
24 and evaluates the need to perform additional protective actions.
- 25 • If the Hanford Fire Department resources are not needed, the spill is mitigated with
26 resources identified in Section 8.0 of this Contingency Plan and proper notifications
27 are made.
- 28 • If the Hanford Fire Department resources are needed, the BED calls 9-1-1 (373-3800
29 if using a cellular telephone).
- 30 • The BED sends a representative to meet the Hanford Fire Department.
- 31 • The BED provides a formal turnover to the IC when the IC arrives at the ICP.
- 32 • The BED informs the Hanford Site Emergency Response Organization of the extent
33 of the emergency (including estimates of dangerous waste, mixed waste, or
34 radioactive material quantities released to the environment).

- 1 • If operations are stopped in response to the spill, the BED ensures that systems are
2 monitored for leaks, pressure buildup, gas generation, and ruptures.
- 3 • The Hanford Fire Department stabilizes the spill.

4 **C.6.4.6 Damaged or Unacceptable Shipments**

5 Waste materials will not be received at the Test and Demonstration Facility in containerized
6 form, therefore, no damaged or unacceptable shipments will be received.

7 **C.6.4.7 Prevention or Recurrence or Spread of Fires, Explosions or Releases**

8 The BED will take the steps necessary to ensure that a secondary release, fire, or explosion does
9 not occur. The BED will take measures, where applicable, to stop processes and operations,
10 collect and contain released wastes, and remove or isolate containers. The BED shall also
11 monitor for leaks, pressure buildups, gas generation, or ruptures in valves, pipes or other
12 equipment, whenever this is appropriate.

13 **C.7.0 INCIDENT RECOVERY AND RESTART OF OPERATIONS**

14 A recovery plan is developed when necessary, in accordance with DOE/RL-94-02, Section 9.2.
15 Following an incident at either treatment unit or in the container storage area, a recovery plan is
16 needed where further risk could be introduced to personnel or the environment through recovery
17 action, and/or to maximize the preservation of evidence.

18 For a recovery plan to be implemented in accordance with this Contingency Plan, Ecology must
19 be notified before operations can resume. The DOE/RL-94-02, Section 5.1, discusses different
20 reports to outside agencies. This notification is in addition to those required reports and must
21 include the following statements:

- 22 • There are no incompatibility issues with the waste and released materials from the
23 incident.
- 24 • All the equipment has been cleaned, is fit for its intended use, and has been placed
25 back into service.

26 The notification required by WAC 173-303-360(2)(j) can be made via telephone conference.
27 Additional information that Ecology requests regarding these restart conditions will be included
28 in the required 15-day report identified in Section C.10 of this Contingency Plan.

29 For emergencies not involving activation of the Hanford-EOC, the BED ensures that conditions
30 are restored to normal before operations are resumed. If the Hanford Site EOC was activated
31 and the emergency phase is complete, a special recovery organization could be appointed at the
32 discretion of the DOE Richland Operations Office (DOE-RL) to restore conditions to normal.
33 This process is detailed in DOE-RL and contractor emergency procedures. The makeup of this
34 organization depends on the extent of the damage and the effects. The onsite recovery
35 organization will be appointed by the appropriate contractor management.

1 **C.7.1 INCOMPATIBLE WASTE**

2 After an event, the BED or the onsite recovery organization ensures that no waste that might be
3 incompatible with the released material is treated, packaged, stored, and/or disposed of until
4 cleanup is completed. Cleanup actions are taken by personnel at the Test and Demonstration
5 Facility or other assigned personnel. DOE/RL-94-02, Section 9.2.3, describes actions to be
6 taken. If incompatibility of waste was a factor in the incident, the BED or the onsite recovery
7 organization ensures that the cause is corrected before operations resume.

8 **C.7.2 POST EMERGENCY EQUIPMENT MAINTENANCE AND**
9 **DECONTAMINATION**

10 All equipment used during an incident will be decontaminated (if practicable) or disposed of as
11 spill debris. Decontaminated equipment will be checked for proper operation before storage for
12 later use. Consumables and disposable materials will be restocked and discharged fire
13 extinguishers replaced.

14 The BED ensures that all equipment is cleaned and fit for its intended use before operations
15 resume. Depleted stocks of neutralizing and absorbing materials will be replenished and
16 protective clothing cleaned or disposed of and restocked.

17 **C.8.0 EMERGENCY EQUIPMENT**

18 Hanford Site emergency resources and equipment are described and listed in DOE/RL-94-02,
19 Appendix C. Emergency resources specific to the Test and Demonstration Facility are identified
20 in this section.

21 **C.8.1 FIXED EMERGENCY EQUIPMENT**

Type	Location	Capability
TBD	TBD	TBD

23 **C.8.2 PORTABLE EMERGENCY EQUIPMENT**

Type	Location	Capability
Fire extinguishers	TBD	Fire control
Dry chemical	TBD	Class A, B, and C fires

25 **C.8.3 COMMUNICATION EQUIPMENT/WARNING SYSTEMS**

Type	Location	Capability
Hand-held radios	Portable	Communications

1 **C.8.4 PERSONAL PROTECTIVE EQUIPMENT**

Type	Location	Capability
Full-face respirator	TBD	Protection from respiratory hazards
PPE clothing	TBD	Protection from specific exposure hazards

2
3 **C.8.5 SPILL CONTROL AND CONTAINMENT SUPPLIES**

Type	Location	Capability
Spill control kit	Throughout the facility	Cleanup organic solvents, inorganic solvents, acids, caustics, oxidizers; radiation rope and signs

4
5 **C.9.0 INCIDENT COMMAND POST**

6 The ICP for the Test and Demonstration Facility is in Building (to be determined). Emergency
7 resource materials are stored at each location. The Hanford Fire Department Mobile Command
8 Unit could be activated if necessary.

9 **C.10.0 REQUIRED REPORTS**

10 Post-incident written reports are required for certain incidents on the Hanford Site. The reports
11 are described in DOE/RL-94-02, Section 5.1.

12 Facility management must note in the Test and Demonstration Facility activities operating
13 record, the time, date and details of any incident that requires implementation of the Contingency
14 Plan. Within fifteen days after the incident, a written report must be submitted to Ecology. The
15 report must include the elements specified in WAC 173-303-360(2)(k).

16 **C.11.0 CONTINGENCY PLAN LOCATION AND AMENDMENTS**

17 Copies of this Contingency Plan are maintained at the following locations:

- 18 • TBD.

19 This Contingency Plan will be reviewed and immediately amended as necessary, in accordance
20 with DOE/RL-94-02, Section 14.3.1.1.

1 **C.12.0 REFERENCES**

2 10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*, as amended.

3 29 CFR 1910, "Occupational Safety and Health Standards," *Code of Federal Regulations*, as
4 amended.

5 40 CFR 761, "Toxic Substances Control Act," *Code of Federal Regulations*, as amended.

6 DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analysis to*
7 *Meet Subpart B of 10 CFR 830*, U.S. Department of Energy, Washington, D.C.

8 DOE/RL-94-02, *Hanford Emergency Management Plan*, as amended, U.S. Department of
9 Energy, Richland Operations Office, Richland, Washington.

10 DOE-STD-1027-92, 1992, *Preparation Guide for U.S. Department of Energy Nonreactor*
11 *Nuclear Facility Safety Analysis Reports*, U.S. Department of Energy, Washington, D.C.

12 DOE-STD-1128-98, June 1998, *Guide of Good Practices for Occupational Radiological*
13 *Protection in Plutonium Facilities*, U.S. Department of Energy, Washington, D.C.

14 WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, Washington
15 State Department of Ecology, Olympia, Washington, as amended.

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