ADDENDUM F
PREPAREDNESS AND PREVENTION

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F PREPAREDNESS AND PREVENTION

This Addendum discusses preparedness and prevention requirements; preventive procedures, structures, and equipment; and prevention of reaction of ignitable and reactive waste stored at the Waste Receiving and Processing Facility (WRAP) Operating Unit Group.

F.1 Preparedness and Prevention Requirements

The following sections document the preparedness and prevention measures taken at the WRAP Operating Unit Group.

F.1.1 Equipment Requirements

The following sections describe the internal and external communications systems and the emergency equipment required that could be activated by the WRAP Operating Unit Group Building Emergency Director (BED).

F.1.1.1 Internal Communications

The WRAP Operating Unit Group will be equipped with an internal communication system to provide immediate emergency instruction to personnel. The internal communication system includes telephones, radios, a public address system, closed-circuit television monitoring, and alarm systems. The telephone and radio systems provide for intra operations communication. Provisions will be made to respond appropriately to various emergencies, including the following alarm-activated emergencies: building evacuations, fire and/or explosion, loss of essential services, loss of ventilation, chemical releases, discharges, and high-airborne contamination.

Immediate emergency instruction to personnel will be provided by a public address system by speaker horns and ceiling-mounted speakers located throughout the WRAP Operating Unit Group. The public address system will be coupled to the building telephone system to provide telephone accessed voice paging. The alarms will be independent of the public address. The WRAP Operating Unit Group's telephone system will be linked to the Hanford Site voice data telecommunications system.

The essential communication systems for the WRAP Operating Unit Group will be fed from the emergency distribution system (uninterruptible power supply). The fire alarm and fire detection system includes a fire alarm control panel, heat detectors, smoke detectors, incipient fire detectors, tamper sensors, and manual pull stations. The entire system will be backed up with emergency battery power. The main fire alarm panel monitors input from various sources and indicates trouble or alarm status. The main fire alarm panel repeats these indications to master radio boxes for transmission to the Hanford Fire Department.

Heat detectors are located throughout the building including glove boxes. The only exceptions are in the supply ventilation ducts where photoelectric smoke detectors are employed for early detection of external fires approaching WRAP, and in the second level control/computer area where smoke detection is used for early detection of electrical fires.

F.1.1.2 External Communications

The WRAP Operating Unit Group will be equipped with devices for summoning emergency assistance from the Hanford Fire Department and/or emergency response teams as necessary. External communication will be made via fire alarms, a telephone communication system, or two-way radios (hand-held and vehicle-mounted radios) as described in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02). A telephone communication system and two-way radios can be used to access a supervisor, who contacts the Hanford Site emergency network if assistance is needed (refer to Addendum J, Contingency Plan for communication equipment requirements).

F.1.1.3 Emergency Equipment

Emergency equipment will be available for use at the WRAP Operating Unit Group as required by WAC 173-303-340(1). A list of equipment will be included in Addendum J, Contingency Plan.

F.1.1.4 Water for Fire Control

The primary water supply for fire protection will be supplied from the 200 West Area water system. Water will be pumped to the WRAP Operating Unit Group through an underground pipeline that ties into existing water mains. All underground installations will be in accordance with NFPA. In the event that water pressure is lost, the Hanford Fire Department provides equipment as described in Permit Attachment 4, *Hanford Emergency Management Plan* (DOE/RL-94-02).

F.1.2 Aisle Space Requirement

Rows of containers will be placed no more than two containers wide in accordance with WAC 173-303-630(5)(c). A minimum 30-inch aisle space will be maintained between rows of containers as required by WAC 173-303-630(5)(c). Aisle spacing at the WRAP Operating Unit Group will be sufficient to allow the movement of personnel and fire protection equipment in and around the containers and meets the requirements of the NFPA and the Life Safety Code for the protection of personnel and the equipment. The 14 pack configuration used for shipping does not constitute a row, therefore the 14 pack is not subject to the 30-inch aisle space requirements in accordance with WAC 173-303-630(5)(c).

F.2 Preventive Procedures, Structures, and Equipment

The following sections describe preventive procedures, structures, and equipment.

F.2.1 Unloading Operations

Methods will be used to minimize the potential for puncturing or opening containers during waste unloading and are followed during packaging of the waste as well as during unloading. The methods employed will be as follows.

- Containers will be inspected for damage before being unloaded.
- Containers will be handled by appropriate equipment such as a forklift or crane during unloading. Onsite generating units or offsite generators will be required to provide rigging and instructions for unloading packages requiring special handling.
- Qualified operators will ensure that inspections are carried out before waste is unloaded at the WRAP Operating Unit Group.
- Waste will not be unloaded without the approval of operations supervision during inclement weather.
- Path to storage area will be clear of obstructions.

F.2.2 Runoff

Addendum C, Process Information, contains information on run-off and run-on of liquid at the WRAP Operating Unit Group.

F.2.3 Water Supplies

Water will be supplied to the WRAP Operating Unit Group from the Columbia River via the Hanford Site potable water system. All hose connections to the potable water line have a one-way check valve installed to prevent backflow. These check valves prevent contamination from entering the water supply lines from within the WRAP Operating Unit Group.

The water supply system (potable and fire sprinkler supply) for the WRAP Operating Unit Group is routed from two supply lines. The fire supply system is addressed in Section F.1.1.4. The drinking water

system was designed and is being operated to meet the State of Washington standards for potable drinking water systems.

F.2.4 Equipment and Power Failure

The procedures, structures, and equipment used to mitigate the effects of equipment failure and power outage are described in the following sections. The WRAP 2336W Building dangerous waste management units systems and structures will be inherently safe during power failures.

A combination of reliability, redundancy, maintenance, and repair features are used in the design of the WRAP 2336W Building dangerous waste management units equipment and systems. Preventive maintenance and surveillance will be performed to minimize random failure of equipment. Redundant equipment and systems will be provided for crucial systems required to run continuously during process operations. For essential production and safety equipment, spare parts will be maintained. In addition, the design and layout of process systems enhance physical access for operation and maintenance.

Most of the operations within the WRAP Process Area dangerous waste management unit glove boxes consist of hands on manual activities. Shutdown consists of simply stopping the activity in progress. There are several automatic container movement and handling functions controlled by computer. These functions will be shutdown by pressing emergency stop buttons located throughout the WRAP Process Area dangerous waste management unit.

Loss of electrical power does not constitute an emergency. The WRAP Process Area dangerous waste management unit alarms will be supplied with a battery backup system that automatically engages when there is a failure of the normal power supply. Therefore, the storage buildings will not be occupied during power outages without adequate alternate substitutes for those systems except for personnel providing a fire watch. Rechargeable battery powered lighting units provide emergency illumination. In the event of a power failure, uninterruptible power supply will be provided. The uninterruptible power supply allocates power to critical computers and instrumentation for a minimum of 55 minutes following loss of power.

As described in Section F.1.1.2, emergency communication equipment will be available to summon emergency assistance in the event of a power loss.

F.2.5 Personnel Protection Equipment

The WRAP Operating Unit Groups procedures, structures, and equipment will be used to prevent undue exposure of personnel to dangerous waste and hazardous chemicals. Protective clothing and equipment are prescribed for personnel handling chemicals or dangerous waste. Whenever possible, exposures to hazards will be controlled by accepted engineering and/or administrative controls. Protective gear will be used where effective engineering or administrative controls are not feasible. In addition to providing employees with adequate protective clothing to prevent exposure to dangerous waste, the design of equipment at the WRAP Operating Unit Group minimizes exposure to dangerous waste and hazardous chemicals.

Refer to Addendum J, Contingency Plan for information regarding required personnel protection equipment at the WRAP Operating Unit Group.

F.3 Prevention of Reaction of Ignitable, Reactive, and/or Incompatible Waste

The following section describes prevention of reaction of ignitable, reactive, and/or incompatible waste.

F.3.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

The WRAP Operating Unit Group is not authorized to receive shock sensitive or Class 4 oxidizers (international fire code) waste. Nevertheless, should this type of waste be identified through the sorting or characterization process, the Hanford Fire Department will be notified. The management of this type

of waste will be conducted under the direction of the Hanford Fire Department in addition to requirements of this Hanford Dangerous Waste Permit.

The WRAP Operating Unit Group 2336W and 2404WC buildings will be heated with no ignition sources. Smoking will be prohibited within WRAP Operating Unit Group. *NO SMOKING* signs are posted and are visible at 25 feet.

F.3.2 Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste

Based on the waste characteristics identified by the onsite generating unit or offsite generator, specific packaging instructions will be provided by the WRAP operating organization. Liquids will be transferred to the CWC Operating Unit Group for storage until treatment is available at the WRAP Operating Unit Group. Incompatible waste will not be packaged within the same container.

The following general precautions will be taken at the WRAP Operating Unit Group for handling ignitable or reactive waste and mixing of incompatible waste.

- No smoking will be allowed in the WRAP Operating Unit Group.
- No open flames, sparking devices, cutting or welding, hot surfaces, or heat sparks will be allowed while ignitable or reactive waste is present, unless a hot work permit has been approved.
- Compatibility testing will be conducted before mixing any two wastes (refer to, Addendum C, Process Information for details).
- Incompatible waste will be segregated by dikes, walls, berms or other Ecology approved device. (refer to Addendum B, Waste Analysis Plan).
- At least yearly, the areas where ignitable or reactive waste is stored shall be inspected in accordance with WAC 173-303-395(1)(d) by facility personnel in the presence of a professional person who is familiar with the International Fire Code or in the presence of the Hanford Fire Marshal.
- Containers with ignitable or reactive waste will be stored in covered dangerous waste management units.

Known data on each waste package will be forwarded to WRAP Operating Unit Group operators along with the waste package itself. The information will be added to the waste tracking computer system along with a bar-code label for identifying and tracking the waste container through the WRAP Operating Unit Group. As additional information is gained through nondestructive assay and nondestructive examination and waste sampling, the information will be added to the waste tracking computer system.

Reactive waste is not anticipated to arrive at the WRAP Operating Unit Group. If data on a waste package indicate that reactive waste is present within a container, the container can be accepted at the WRAP Operating Unit Group but processing is controlled administratively. If reactive waste is received or identified, the waste will be segregated, deactivated (if possible), and repackaged. If the waste cannot be safety deactivated, the waste will be repackaged and returned to storage to await further treatment.

Deactivation of reactive waste will be performed in the glove boxes. Sampling and testing will be performed to ensure that no reactions will occur during aggregation and to ensure complete deactivation. Alkali metals received at the glove boxes will be treated to render the metals nonreactive. Methods will be employed to handle safely any reactive waste identified.

Information on ignitable waste, if known, will be provided to WRAP Operating Unit Group operators to facilitate scheduling for processing, sampling, and solidification of this waste. Flammable and/or ignitable liquid waste will be immobilized using flammable or combustible absorbent, as appropriate, to facilitate future treatment by incineration.

The WRAP 2336W Building dangerous waste management units will be designed and constructed to meet NFPA codes and is equipped with heat and smoke detectors along with a fire sprinkler system and an automatic ventilation shutdown system.

Mixed waste will be required to have vents on the waste containers or over pack containers from the time the containers are filled. Waste will be required to be segregated, and certified by the generator before shipment such that no reaction could occur during storage or transportation.

All waste containers used for repackaging mixed waste within the WRAP Process Area dangerous waste management unit gloveboxes will be vented with filters to preclude buildup of gasses within the waste container.

Incompatible waste will be segregated at the time of sorting inside the glove boxes. Compatible waste, which does not require further treatment within the gloveboxes, will be repackaged. Containerized liquids removed from waste packages will be sampled for characterization and tested for compatibility before any aggregation takes place in the glove boxes.

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