WASTE ENCAPSULTION AND STORAGE FACILITY
ADDENDUM F
PREPAREDNESS AND PREVENTION

CHANGE CONTROL LOG

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have its own change control log with a modification history table. The "**Modification Number**" represents Ecology's method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Modification History Table

Modification Date	Modification Number
11/16/2020	8C.2020.10F

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TABLE OF CONTENTS

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F.1 Preparedness and Prevention

This addendum addresses preparedness and prevention measures at the Waste Encapsulation and Storage Facility (WESF) Operating Unit Group (OUG) and demonstrates compliance with requirements set forth in Washington Administrative Code (WAC) 173-303-340, Dangerous Waste Regulations, *Preparedness and prevention* and WAC 173-303-806(4)(a)(viii), *Final facility permits*.

WESF is located in the western portion of the 200 East Area of the Hanford Facility, with the main 225-B Building adjoining B Plant on the west end. The 225-B Building houses the WESF Dangerous Waste Management Units (DWMUs), three of which are operating: Hot Cell G, Pool Cells, and Truckport.

WESF operations provide for continued safe storage, maintenance, and transfer operations for 1,936 capsules containing cesium and strontium radioactive mixed waste. The double-encapsulated cesium and strontium salts are stored underwater in various pool cells. WESF operations are designed to protect human health and the environment (HHE) from the encapsulated mixed waste.

For further details on WESF DWMUs and storage, maintenance, transfer operations, and design information, refer to WESF Addendum C, "Process Information."

F.2 Equipment Requirements

WESF is designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any other unplanned natural phenomenon or manmade incident that could cause unintentional release of dangerous waste or dangerous waste constituents to the air, soil, surface water, or groundwater, which could threaten HHE. The following subsections describe preparedness and prevention measures to be taken at WESF, which help avoid or mitigate such situations.

The following communications equipment and fire suppression systems and equipment are available for use at WESF in accordance with the requirements of WAC 173-303-340(1). All communications, alarms and notifications, and fire protection equipment and detection systems are tested and maintained to assure proper operation in time of emergency [WAC 173-303-340(1)(d)].

F.2.1 Internal Communication

WESF is equipped with internal communications devices used to provide immediate emergency instruction to on-site personnel. Communications devices described in this section meet the internal communications requirements of WAC 173-303-340(1)(a), (1)(b), and (2)(a).

On-site internal communication systems consist of alarms and notification systems, telephones, hand-held two-way radios, and a public address system interfaced for voice paging throughout the facility [WAC 173-303-340(1)(a)].

The following audible alarm systems are available to provide warnings to WESF personnel:

- A fire detection system with audible alarms is located throughout the 225-B Building providing personnel notification to evacuate. For further details on fire detection systems refer to Section F.2.3.1.
- Manual fire alarm pull boxes are located throughout WESF. Activation of manual fire alarm pull boxes trigger an audible fire alarm.
- Manually actuated take cover alarms are located in the Operations Base (225-B Building) as well as the Incident Command Post (MO232). Such alarms provide personnel notification to take cover and are audible throughout WESF.
- Manually actuated evacuate alarms are located in the Operations Base (225-B Building) as well as the Incident Command Post (MO232). Such alarms provide personnel notification to evacuate and are audible throughout WESF.

Whenever mixed waste (capsule) handling operations occur at WESF, all personnel involved are required to have immediate access to an emergency communication device (e.g., a hand-held two-way radio or telephone) capable of directing emergency communications with another employee [WAC 173-303-340(2)(a)].

F.2.2 External Communications

As required by WAC 173-303-340(1)(b), the communications equipment described in Section F.2.1 must have the capability for contacting the Hanford Patrol Operations Center and Hanford Fire Department to request the assistance of local emergency response organizations.

When activated, the fire detection system and manual fire alarm pull boxes will automatically transmit a fire alarm signal to the 200 Area Central Fire Station.

In the instance that just one employee is at WESF during operations, the individual is required to have immediate access to a hand-held two-way radio capable of summoning external emergency assistance [WAC 173-303-340(2)(b)].

The Hanford Patrol Operations Center Point Of Contact can be contacted for 24-hour emergency communications and for information relays by landline telephone or two-way radio.

State and local response organizations are contacted through the Hanford Patrol Operations Center by dialing emergency number 911 from site telephones or 509-373-0911 from cellular phones; for nonemergencies, dial the main contact number for the Hanford Patrol Operations Center at 509-373-3800. On-site responders are notified and/or dispatched through the Hanford Patrol Operations Center.

F.2.3 Emergency Equipment

Portable fire extinguishers and fire control equipment are available for use throughout WESF [WAC 173-303-340(1)(c)]. For a list of emergency equipment, refer to WESF Addendum J, "Contingency Plan." For inspections on emergency equipment, refer to WESF Addendum I, "Inspection Plan." WESF operations personnel are trained in the use of such emergency equipment. For details on personnel emergency training requirements, refer to WESF Addendum G, "Personnel Training."

F.2.3.1 Fire Detection Systems

Two kinds of fire detectors are used either alone or in combination in the 225-B Building: ionization type elements responsive to products of combustion and fixed temperature, rate compensated elements. Electrical signals from the fire detectors are transmitted to a central fire alarm panel located in the main entrance corridor. The central panel will initiate an audible alarm system throughout the building. The alarm system can also be activated by flow alarm switches installed in the sprinkler system piping. The fire alarm signals are transmitted to the 200 Area Central Fire Station. The fire detection and alarm system is capable of electronically monitoring its own operation and providing trouble signals for loss of electrical power, open circuits, or other problems that could affect the operation of the system. The system provides battery power for approximately 60 hours of operation upon loss of electrical power. After 60 hours, a fire watch will be implemented.

F.2.3.2 Fire Suppression Systems

Numerous areas of the 225-B Building are protected with a wet pipe automatic sprinkler system that alarms when activated through the fire alarm panel to the Hanford Fire Department. These areas include:

- Support area.
- Heating, ventilation, and air conditioning room.
- Operating gallery.
- Service gallery.

- Manipulator shops.
- Aqueous Makeup Unit area.
- Truckport.

The Hot Cell G and Pool Cells DWMUs are not equipped with an automatic sprinkler system. However, fire hazards are minimized in both areas by limiting combustible materials. Also, portable fire extinguishers are located throughout the building as well.

F.2.3.3 Water for Fire Control

The raw water system provides water at adequate volume and pressure to supply WESF fire needs [WAC 173-303-340(1)(d)]. In the event of loss of raw water pressure to WESF, a fire watch will be implemented. Alternative water source equipment from the Hanford Fire Department may be deployed for fire control. An underground fire water line also supplies water to the local fire hydrant.

F.3 Preventive Procedures, Structures, and Equipment

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

F.3.1 Loading and Unloading Operations

WESF stores 1,936 double-walled capsules containing cesium chloride and strontium fluoride salts. WESF does not receive waste from another on-site or off-site facility; therefore, unloading operations are not applicable.

To minimize potential for accidental release of mixed waste during loading activities for capsule transfer operations, the following preventive measures are observed by WESF personnel:

- Capsules, canisters, and casks are handled by equipment appropriate for loading and movement operations.
- Management approval must be obtained prior to conducting capsule transport operations.
- Pathways for loading operations must remain clear of obstructions.
- Transport vehicles are positioned in a manner that provides an unobstructed workspace to load casks.

F.3.2 Aisle Spacing Requirements

During storage in the Pool Cells DWMU, the capsules are underwater in a designated pool cell storage rack location. A capsule(s) may be transferred to Hot Cell G for temporary storage as deemed necessary. During capsule transfer operations, capsules are transferred to Hot Cell G for packaging. The capsules will then be moved to the Truckport DWMU for placement in a Cask Storage System. While in the Truckport, only one vertical concrete cask will be accommodated. See WESF Addendum C and Appendix C-A for further details on WESF operations and configuration. Aisle spacing requirements in WAC 173-303-630(5)(c), *Use and management of containers*, are not needed for WESF storage, maintenance, and transfer operations. However, the mixed waste capsules are stored in a manner that allows for unobstructed movement of personnel and emergency equipment to any area of the operating facility in the event of an emergency.

F.3.3 Prevention of Run-On, Run-Off, and Contamination to Water Supplies

Mixed waste capsules are stored underwater in pool cells within the 225-B Building and pool cell water levels are controlled as described in WESF Addendum C. Run-on is not considered a relevant factor in evaluating the protectiveness of waste storage activities in the Pool Cells DWMU. However, normal building design and construction practices at WESF, as described in Addendum C, address precipitation control. The WESF roof, walls, and foundation prevent precipitation run-on from entering the pool cells, hot cell, and truckport area. In addition, only the Truckport DWMU is equipped with a sprinkler system.

During transfer of capsules, the Cask Storage System prevents run-on from entering the capsules. Based on WESF design, no precipitation can contact the waste. Because no precipitation can enter the building to contact the waste, no run-off can occur.

F.3.4 Equipment and Power Failure

A temporary loss of electrical power does not constitute an emergency and would not result in a release of mixed waste. The Bonneville Power Administration grid is the primary power source which supplies WESF. Upon loss of power, alternate actions are taken. Water level will be visually checked by manual gauge. Raw water will be added to the pool cells, as necessary.

In the event of power loss during capsule loading operations, equipment will remain in a safe configuration. The WESF OUG will not be occupied during power outages except for personnel providing a response action. Rechargeable battery powered lighting units will provide illumination. Communication equipment will be available to summon assistance in the event of power loss.

F.3.5 Personal Protection Equipment

WESF minimizes personnel exposure to occupational injury, dangerous wastes, and hazardous chemicals by ensuring the availability and use of adequate personal protective equipment (PPE) during normal operations and emergencies. All personnel are required to wear PPE specified by work authorization documentation and in accordance with training, posted requirements, and administrative instructions. PPE requirements will vary depending on the form, content, and waste handling activities. When possible, engineering and/or administrative controls are first implemented to minimize the possibility of exposure.

F.3.6 Ventilation

The prevention of radioactive atmospheric releases are managed by means of engineered controls through the design and operation of WESF. As WESF does not contain or require the associated components of WAC 173-303-690, *Air emission standards for process vents*, through WAC 173-303-692, *Air emission standards for tanks, surface impoundments, and containers*, the dangerous waste air emission requirements do not apply. For details on ventilation controls and requirements, see Addendum C.

F.4 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste

WESF does not and will not store ignitable waste, reactive waste, or waste found incompatible with the mixed waste capsules.

F.5 Arrangements with Local Authorities

Written emergency assistance agreements exist with local authorities that include arrangements to familiarize and furnish local hospitals, police departments, fire departments, and city and county emergency response teams with Hanford Facility information [WAC 173-303-340(4)(a) through (c)]. Refer to WA7890008967, Hanford Facility Resource Conservation and Recovery Act Permit (hereinafter referred to as the Hanford RCRA Permit), Attachment 4, *Hanford Emergency Management Plan*, for a description of coordination agreements. The response agreements designate primary emergency authority [WAC 173-303-340(4)(d)]. If state or local authorities decline to enter into a response agreement or familiarization arrangement with the Hanford Facility, the Permittees will record the refusal in the WESF portion of the Hanford Facility Operating Record as required by the Hanford RCRA Permit Condition II.I.1.g [WAC 173-303-340(5)].