

## **Categorical Exclusion for Deactivation of the 209-E Building 200 East Area, Hanford Site, Richland, Washington**

### **Proposed Action**

The U.S. Department of Energy (DOE), Richland Operations Office (RL) proposes to deactivate the Critical Mass Laboratory (209-E Building). Deactivation of the 209-E Building will prepare the structure for future demolition under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). The availability of *American Recovery and Reinvestment Act* (ARRA) funding has provided DOE with an opportunity to accelerate this deactivation pending final disposition under CERCLA.

### **Location of Action**

200 East Area, Hanford Site, Benton County, Washington (Figure 1).

### **Description of Proposed Action**

The 209-E Building, constructed in 1960, is an L-shaped reinforced concrete structure that includes offices, control room, shops, equipment room, change room, mix room, and the critical assembly room (CAR). The facility was designed to provide a heavily shielded reactor room, the CAR, where quantities of plutonium or uranium could be brought into critical configurations under carefully controlled and monitored conditions. The rooms that contain contaminated equipment and material include the CAR, mix room, and a portion of the change room.

In the late 1980s, the Pacific Northwest National Laboratory (as a contractor) was directed by DOE to prepare the facility for an unoccupied status. At that time, the facility underwent stabilization and deactivation activities that included removal of bulk fissile material, flushing tanks, stabilizing contamination within glove boxes and hoods, and packaging and removing waste. The 209-E facility has residual plutonium and uranium primarily within inactive process tanks and equipment inside glove boxes and/or hoods in the mix room and CAR. The radiological side of the 209-E Building currently is nonoperational, stabilized, with selected systems deactivated, and undergoing long term surveillance and maintenance (S&M) until decontamination and demolition commences. The residual radiological material is predominantly plutonium-239/240, with some plutonium-238, -241, -242, and americium-241 also present.

Nonradiological areas of the 209-E Building were used as offices into calendar year 2000. Presently, the 209-E Building is unoccupied.

The action includes deactivation activities or activities to meet "end point" criteria; that is, to place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program that is protective of the workers, the public, and the environment until final disposition (i.e., demolition) under CERCLA occurs. These deactivation activities generally include those actions such as waste removal and disposal, associated transportation, and award of grants and contracts. The specific activities typically fall into one of the following basic clean-out processes: stabilization, deactivation, surveillance, maintenance, and decontamination. These could include:

- Draining and/or de-energizing systems, as appropriate;
- Characterizing/stabilizing contaminated areas (e.g., with fixatives, sealants, paint);
- Stabilizing or removing glove boxes and fume hoods;
- Removing fencing and paved parking areas adjacent to facilities;
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required;
- Removing stored radioactive and hazardous materials and wastes;
- Removing equipment and system components;
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume;
- Excessing controlled property or "excessing in place";
- Removing excess combustible material;
- Disconnecting utilities, piping, and network service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems);
- Ensuring adequate freeze and heat protection;
- Stabilizing, consolidating, or removing outside contaminated areas adjacent to facilities;
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs;
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing, heating, chemical or electrochemical action, mechanical cleaning, or other techniques;
- Designing and executing modifications to facility operating systems and/or structures necessary to place a facility in standby status;
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning vessels, pits and trenches; operation of small evaporators; flushing piping systems; removal or replacement of filters; and other close-out actions.

The proposed activity initially would include any necessary decontamination of the structure in a manner sufficient to allow safe demolition (i.e., remove radioactive/hazardous materials such that demolition would not pose a substantial threat of release). For example, deactivation activities would target material at risk reduction to less than 25 grams. Additionally, friable asbestos would be dispositioned in accordance with applicable requirements. Any potentially usable or recyclable items or structures would be removed for other uses.

It is expected that transuranic waste would be transported to the existing Central Waste Complex (CWC) for storage pending final disposition. Low-level and low-level mixed wastes would be disposed of in the existing Environmental Restoration Disposal Facility or the low-level burial grounds, as appropriate.

The 209-E Building ventilation system is active; with building air exhausting through the 296-P-31 stack. This is a major, actively ventilated unit identified in the Hanford Site's Air Operating Permit (Emission Unit Identification #210). A revised Notice of Construction would be prepared to address proposed

deactivation activities; deactivation activities would not commence until the State of Washington Department of Health issues a revised radioactive air emissions license. The existing ventilation system would be operational during all deactivation activities conducted inside the 209-E Building. After physical deactivation activities within the structure have been completed, the ventilation system would be shut down.

ARRA funding is available to support initiation of deactivation activities in fiscal year 2010. The proposed deactivation activities would be expected to take less than 10 months.

### **Categorical Exclusion to be Applied**

The following categorical exclusion (CX) is listed in Title 10, Code of Federal Regulations (CFR) 1021, "National Environmental Policy Act Implementing Procedures," Subpart D, Appendix B, published in the Tuesday, July 9, 1996, 61 Federal Register 36222:

B1.28 "Minor activities that are required to place a facility in an environmentally safe condition where there is no proposed use for the facility. These activities would include, but are not limited to, reducing surface contamination, and removing materials, equipment or waste such as final defueling of a reactor, where there are adequate existing facilities for the treatment, storage, or disposal of the materials, equipment or waste. These activities would not include conditioning, treatment or processing of spent nuclear fuel, high-level waste, or special nuclear materials."

### **ELIGIBILITY CRITERIA**

Since there are no extraordinary circumstances that may affect the significance of the environmental effects of the proposal, the proposed activity meets the eligibility criteria of 10 CFR 1021.410(b), as shown in the following table. The proposed activity is not "connected" to other actions with potentially significant impacts (40 CFR 1508.25[a][1]), or with cumulatively significant impacts (40 CFR 1508.25[a][2]), and is not precluded by 10 CFR 1021.211.

<b>INTEGRAL ELEMENTS 10 CFR 1021, SUBPART D, APPENDIX B</b>	
Would the Proposed Action:	Comment or explanation:
Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders?	No applicable laws, regulations, or orders would be violated by the proposed actions.
Require siting and construction or major expansion of waste storage, disposal, recovery or treatment facilities (including incinerators)? The proposal may include categorically excluded waste storage, disposal, recovery or treatment actions.	Wastes generated during the proposed action would not require expansion/modification of existing waste management facilities.
Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases?	No preexisting hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products would be disturbed in a manner that would result in an uncontrolled or unpermitted release.
<p>Adversely affect environmentally sensitive resources including but not limited to:</p> <ul style="list-style-type: none"> <li>(i) Property (e.g., sites, buildings, structures, objects) of historic, archeological, or architectural significance designated by Federal, state, or local governments or property eligible for listing on the National Register of Historic Places</li> <li>(ii) Federally-listed threatened or endangered species or their habitat (including critical habitat), Federally-proposed or candidate species or their habitat or state-listed endangered or threatened species or their habitat</li> <li>(iii) Wetlands regulated under the Clean Water Act (33 U.S.C. 1344) and floodplains</li> <li>(iv) Federally- and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries</li> <li>(v) Prime agricultural lands</li> <li>(vi) Special sources of water (such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region)</li> <li>(vii) Tundra, coral reefs, or rainforests?</li> </ul>	<p>No adverse cultural or ecological impacts are anticipated as a result of the proposed action.</p> <p>Standard controls to mitigate ecological impacts (e.g., minimal activities during nesting season) would be implemented.</p>

## CULTURAL AND BIOLOGICAL RESOURCES REVIEWS

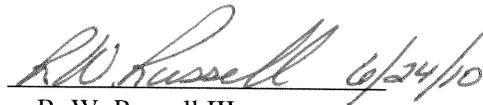
The proposed activity considered cultural and ecological impacts.

The 209-E Building has been categorized as a contributing historic building or structure within the Hanford Site Manhattan Project and Cold War Era Historic District Treatment Plan recommended for individual documentation. As such, an Expanded Historic Property Inventory Form (ExHPIF) has been prepared. As a follow-on cultural review activity on January 12, 2010, an assessment was made of the 209-E Building to identify artifacts that might have educational or interpretive value as displays for local, regional, or national museums. No artifacts within these areas were selected for retention since none could be successfully decontaminated for clean release or public access (e-mail, T. Marceau, MSA, to E. Prendergast-Kennedy, PNNL, "Artifact Walkdown of the 209-E Building, dated January 13, 2010).

No adverse ecological impacts are expected as a result of the proposed action. No specific ecological review will be conducted for this activity. Operations will be conducted preferentially during the non-nesting season (July 15 through March 15). Workers will watch for birds/nests during project activities. If any nesting birds or birds displaying defensive behaviors (feigning injury, vocalizing persistently, flying at workers, or refusing to leave the area) are observed, workers will initiate appropriate consultation to identify necessary mitigation.

Compliance Action: I have determined that the proposed action meets the requirements for the referenced Categorical Exclusion. Therefore, using the authority delegated to me by DOE Order 451.1B, Change 1. I have determined that the proposed activities may be categorically excluded from further *National Environmental Policy Act of 1969* (NEPA) review and documentation.

Signature/Date:



R. W. Russell III  
Hanford Site NEPA Compliance Officer

cc:

M. T. Jansky, CHPRC  
E. P. Kennedy, PNNL  
D. L. Norman, CHPRC  
A. L. Rodriguez, RL  
M. R. Sackschewsky, PNNL  
R. S. Weeks, PNNL  
W. C. Woolery, RL

The following checklist summarizes environmental impacts that were considered

#### Impact to Air

	Would the proposed action:	YES	NO
1.	Result in more than minor and temporary gaseous discharges to the environment?	X	
2.	Release other than nominal and temporary particulates or drops to the atmosphere?		X
3.	Result in more than minor thermal discharges?		X
4.	Increase offsite radiation dose to >0.1 mrem (40 CFR 61 Subpart H)?		X

#### Impact to Water

	Would the proposed action:	YES	NO
5.	Discharge any liquids to the environment?		X
6.	Discharge heat to surface or subsurface water?		X
7.	Release soluble solids to natural waters?		X
8.	Provide Interconnection between aquifers?		X
9.	Require installation of wells?		X
10.	Require a Spill Prevention Countermeasure and Control Plan (40 CFR 112 and 761).		X
11.	Violate water quality standards (WAC 173-200, Table 1)		X

#### Impact to Land

	Would the proposed action:	YES	NO
12.	Conflict with existing zoning or land use?		X
13.	Involve hazardous, radioactive, PCB, or asbestos waste?	X	
14.	Cause erosion?		X
15.	Require an excavation permit?	X	
16.	Disturb an undeveloped area?		X

#### General

	Would the proposed action:	YES	NO
17.	Disturb Arid Lands Ecology or Wahluke Slope Reserves		X
18.	Cause other than a minor increase in noise level?		X
19.	Make a long-term commitment of large quantities of nonrenewable resources?		X
20.	Require new utilities or modifications to utilities?	X	
21.	Use pesticides, carcinogens, or toxic chemicals?		X
22.	Require a radiation work permit?	X	

Items marked "yes" in the Environmental Impact Checklist located above, are addressed in the following paragraphs:

1. Appropriate air permitting documentation would be prepared to address potential radioactive air emissions.
13. Asbestos is an example of a hazardous material that may be encountered during deactivation activities.
15. Excavation permit(s) would be obtained, as appropriate, to accommodate deactivation.
20. Existing utilities would be modified, as appropriate, for the proposed activities (examples include disconnects, temporary electrical tie-ins).
22. A radiation work permit would be required to support deactivation activities.

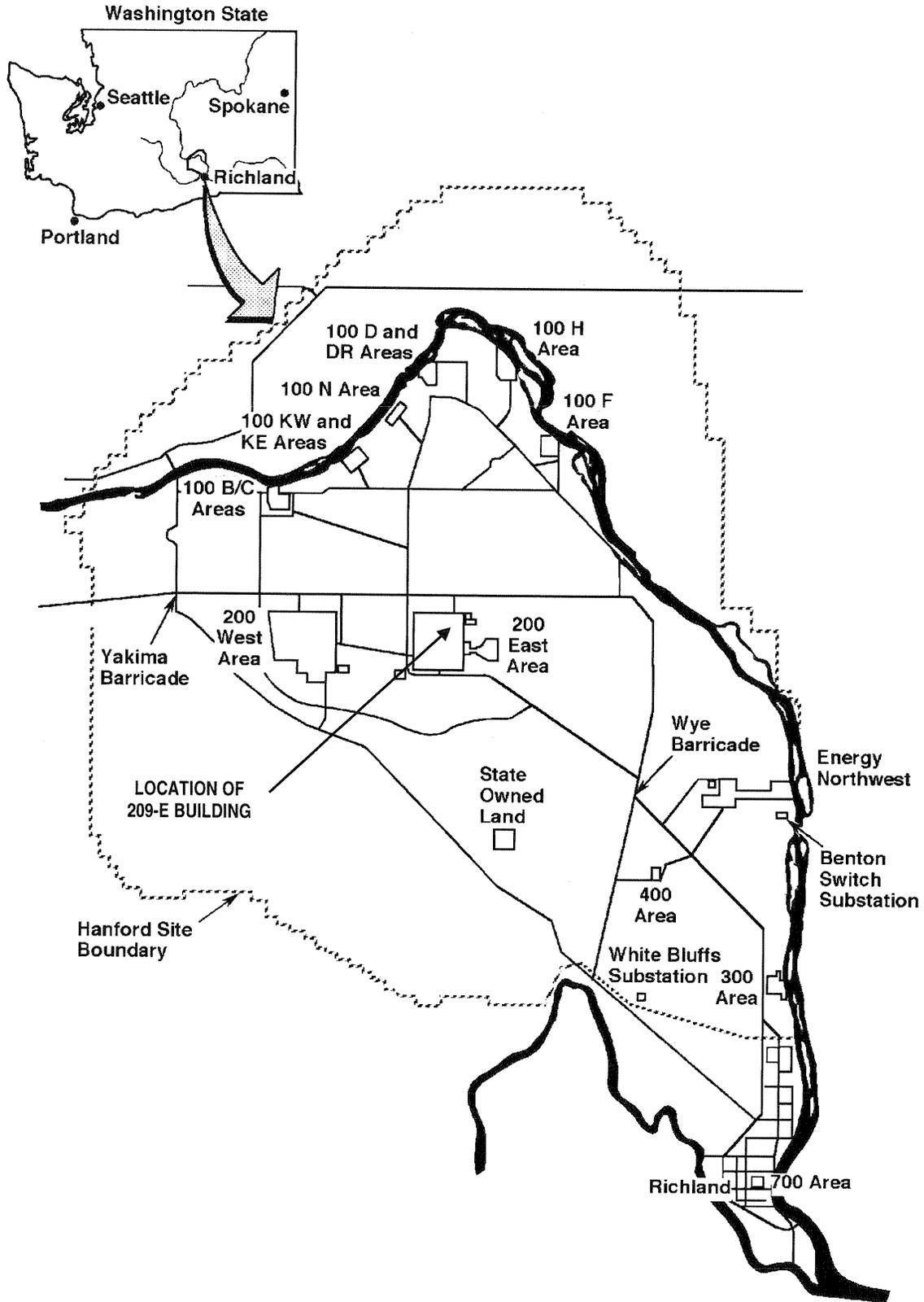


Figure 1. Hanford Site