

Temporary Authorization Request
Class 3 Modification
325 Hazardous Waste Treatment Units (HWTUs)

Purpose of This Document

This document contains the information supporting a temporary authorization request required pursuant to WAC 173-303-830(4)(e)(ii).

Meeting Temporary Authorization Request Criteria [WAC 173-303-830(4)(e)(ii)(B)(I)]

A temporary authorization is requested in this package in order to treat and prepare to dispose of the waste discussed below with existing funding during the current Federal fiscal year. A Class 3 modification must meet the criteria given in WAC 173-303-830(4)(e)(iii)(B). Criteria in WAC 173-303-830(4)(e)(iii)(B)(III) through (V), if used, must provide improved management or treatment of a waste already listed in the permit. The justification for the temporary authorization is

- WAC 173-303-830(4)(e)(iii)(B)(II), treatment or storage in containers in accordance with 40 CFR Part 268 (meeting requirements given in the site-specific variance issued by Ecology)
- WAC 173-303-830(4)(e)(iii)(B)(III), to prevent disruption of ongoing waste management activities (attempts to manage this waste as specified by requirements are not practicable and, if attempted, would be highly disruptive.)
- WAC 173-303-830(4)(e)(iii)(B)(V), to facilitate other changes to protect human health and the environment (treatment and disposal of the waste is preferable to indefinite storage, and use of a permitted facility is needed in order to process the waste for disposal.)

This temporary authorization request thus demonstrates compliance with the request criteria in the regulation cited.

Description of Activities to be Conducted Under the Temporary Authorization [WAC 173-303-830(4)(e)(ii)(B)(I)]

PNNL plans to prepare two one-gallon paint cans of grouted waste for disposal. These paint cans are presently stored in the SAL hot cells permitted unit. The waste is a solidified solution of radium containing levels of barium in excess of the applicable treatment standard. Pursuant to the Ecology site-specific variance granted for this waste, it must be placed in a specially modified 55-gallon drum with a polyethylene liner and then the lid sealed onto the drum. (Details of the waste and the process of bonding the lid to the drum are given in the application for the site-specific variance.) This activity will take place in the existing permitted units.

Once the drum is prepared, it must be prepared for shipment to the Low-Level Burial Grounds (LLBG) for disposal, as required by the site-specific variance. The drum must be shielded due to the radiation level of the mixed waste, so it will be quite heavy. Waste acceptance criteria for the LLBG do not allow the modified drum used for encapsulation to be accepted due to requirements to manage subsidence in the landfill. As a result, the encapsulated drum must be placed in a box and filled with grout (concrete) in order to meet LLBG waste acceptance criteria. In order to place it in a box with a bottom layer of concrete already in place, the Cask Handling Area (CHA) will be utilized, as it has the materials handling

and floor loading capability to do this. The drum will be lifted with the crane in the CHA and placed into the box, appropriately braced. The box can then be moved to the Truck Lock.

Once at the Truck Lock, a concrete pumping truck will be secured and concrete delivered to finish filling the box void space. The concrete must be allowed to cure for at least 28 days prior to a final acceptance inspection by LLBG representatives. The box is not sealed until acceptance is documented.

The sealed waste box will either be retained at the Truck Lock or (more likely) moved to the 3714 Pad for storage while the arrangements are completed for pickup and disposal of the box. Storage will take place until pickup of the waste for transport to the 200 Area.

PNNL may also utilize the units being added for container storage during the temporary authorization period. Any such storage would meet the criteria for same described in the proposed changes to Addendum C.

Explanation of Why Temporary Authorization is Necessary [WAC 173-303-830(4)(e)(ii)(B)(II)]

The temporary authorization is needed in order to treat the radium/barium waste and prepare it for disposal before September 30, 2014. Funding has been allocated in this fiscal year to perform this activity.

This waste is the oldest waste stored in the 325 HWTUs, because the path to disposal is complex, as noted previously. PNNL desires to get it on its way to disposal rather than continue to store it indefinitely. Delay could cause funding to be constrained.

Review and approval of the Class 3 modification request being presented may not be expeditious due to Ecology resource constraints. Ecology is making significant efforts to issue a new Hanford Facility RCRA Permit to replace the existing permit, which expired in 2004. These efforts may constrain Ecology's ability to approve the Class 3 modification in time to allow the radium/barium waste to be treated expeditiously in accordance with the requirements of the Dangerous Waste Regulations, the Hanford RCRA Permit, and the site-specific variance for this waste stream.

Information to Ensure Compliance with WAC 173-303-280 through 173-303-395 and 173-303-600 through 173-303-680 [WAC 173-303-830(4)(e)(ii)(B)(III)]

The activities proposed under the temporary authorization would take place under the same operational procedures currently utilized at the 325 HWTUs including, but not limited to, the requirements of the Dangerous Waste Regulations and the Hanford RCRA Permit. The added requirements proposed in this permit modification will also be followed. The activities will be performed by staff trained pursuant to the 325 HWTUs training plan (see Addendum G for description). Assistance and oversight from trained Solid Waste Operations Complex (SWOC) personnel at Hanford will also be utilized during this process.

The activities proposed is similar to activities already performed at the 325 HWTUs with radioactive and mixed wastes. The activities can be performed safely and compliantly without significant changes to existing waste management procedures. The sealing of the polyethylene-lined drum is performed with

equipment already on hand and in accordance with manufacturer's instructions by staff trained by the manufacturer.

The radium/barium waste is already a cast solid monolith within the closed one-gallon paint cans, so the likelihood of spills or release of dangerous waste is extremely low. The cans will not be opened, simply placed in the lined drum and the drum lid bonded onto the drum by melting the polyethylene at the interface between the drum and the lid. The sealed drum will then be placed in box and the box filled with concrete.

Notice [WAC 173-303-830(4)(e)(ii)(C)]

A notice of this temporary authorization request will be sent to the Hanford mailing list maintained by Ecology and RL within seven days of submittal of this request.