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**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

**MAR 17 1997**

97-EAP-321



Mr. Michael A. Wilson  
Program Manager  
Nuclear Waste Program  
State of Washington  
P.O. Box 47600  
Olympia, Washington 98504-7600

Dear Mr. Wilson:

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY (ECOLOGY) INVESTIGATION OF THE 324, 325, AND 327 BUILDINGS, DECEMBER 19, 1997

The U.S. Department of Energy, Richland Operations Office (RL) acknowledges the receipt of the Ecology letter to J. Rasmussen, RL; K. Brog, Pacific Northwest National Laboratory (PNNL); and C. Sorensen, B&W Hanford Company (BWHC) from R. Wilson, "Re: Debris Waste Returned To The 324, 325, and 327 Buildings," dated February 12, 1997. Ecology has expressed concern that the problem of incomplete segregation of waste constituents that may designate as dangerous waste be corrected.

RL, PNNL, and BWHC are in the process of accurately designating the waste according to Washington Administrative Code (WAC) 173-170 and WAC 173-303-070. A status report describing steps taken to designate and segregate the debris waste streams from the 324, 325, and 327 Buildings is enclosed.

Enclosure 1 is the report for 324 and 327 Buildings and Enclosure 2 is the report for the 325 Building.

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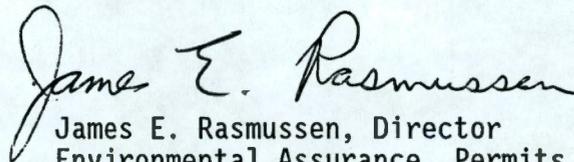
MAR 17 1997

Mr. Michael A. Wilson  
97-EAP-321

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Should you have any questions, please contact Gloria A. Williams, of my staff,  
at 372-0586.

Sincerely,



James E. Rasmussen, Director  
Environmental Assurance, Permits,  
and Policy Division

EAP:GAW

Enclosures:

1. Status of 324 and 327 Buildings
2. Status of 325 Building

cc w/encl:

EDMC, H6-08

R. Jim, YIN

G. Hayner, BWHC

G. McNair, PNNL

S. Moore, Ecology

L. Olguin, FDH

D. Powaukee, NPT

S. Price, FDH

D. Rasmussen, BWHC

S. Szendre, FDH

J. Wallace, Ecology

J. Wilkinson, CTUIR

R. Wilson, Ecology

cc w/o encl:

W. Adair, FDH

K. Brog, PNNL

C. Sorensen, B&W

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**ENCLOSURE 1**

**324/327 Buildings Information**

## 324/327 Buildings Information

This attachment addresses the 324 and 327 facilities which have been operated by B&W Hanford Company (BWHC) since November 1, 1996, when the facilities were turned over from the Pacific Northwest National Laboratory (PNNL).

The subject waste drums returned to the 324/327 facilities refers to the low-level waste (LLW) drums which were packaged and generated at the 324 and 327 Buildings by PNNL prior to facility turnover. These drums were returned from the Hanford waste complex during June 1996. The subject LLW drums were returned due to the presence of prohibited or suspect items such as light bulbs, batteries, fuses, pencil dosimeters, potential lead-containing material, and potential free liquid as determined by real-time radiography (RTR) inspection. The current status of the drums is described in more detail below.

Waste drum management and waste container storage issues pertaining to the returned drums and other similar drums packaged from the same waste stream were addressed in meetings with Ecology and DOE Richland Operations Office (RL) on December 12, 1996, and January 9, 1997. The following corrective actions have been taken to improve waste management controls and to assure waste is accurately designated and segregated at the 324/327 Buildings.

1. Facility-specific refresher training was performed for staff who work in facility areas which generate LLW. Emphasis was placed on waste management lessons learned from the returned drums.  
  
(Completed August 9, 1996)
2. High visibility postings were placed in work areas at the point where LLW is placed into the waste containers. The postings identify prohibited wastes which are not to be placed in the waste containers (e.g., light bulbs, batteries, and other items which could designate as dangerous or mixed waste).  
  
(Completed August 16, 1996)
3. Translucent or clear plastic bags were employed for waste collection points instead of opaque yellow bags to facilitate visual examination of waste by contents prior to final waste packaging and compaction.  
  
(Completed September 19, 1996)
4. Waste contents inventory sheet documentation forms were reviewed and revised to facilitate better description and documentation of drum contents.  
  
(Completed September 19, 1996)

5. Facility-specific briefings/recommendations were completed with applicable facility staff to instruct personnel to control/manage/store any specific drum as dangerous waste if that waste drum contains any prohibited or suspect items which would designate as dangerous waste.

(Completed January 2, 1997)

6. Waste stream constituents documentation was reviewed and updated to assure waste stream constituents are accurately described and to assure waste container contents are consistent with the appropriate designation/classification for that waste stream.

(Completed February 28, 1997)

7. The facility-specific LLW compaction procedures are undergoing review and revision to provide additional guidance/instructions to assure that prohibited items are segregated and designated as dangerous waste. The updated procedures incorporated the use of hand-held metal detectors (wands) to facilitate the detection, removal, and segregation of metal-bearing items such as light bulbs, batteries, or lead. Although metal waste will be segregated at the point of generation, the metal detector provides a convenient and efficient method of verifying waste bags prior to waste compaction.

(324 Building status: initial procedure changes were incorporated December 30, 1996; additional procedure revision is in progress with approval and implementation, including retraining expected by target completion date of March 31, 1997)

(327 Building status: procedure revision, approval, and retraining were completed February 20, 1997)

8. Facility-specific waste management administrative procedures/documentation are undergoing review and upgrading to enhance waste management operations, including waste designation and waste segregation.

(Status for both 324 and 327 Buildings: in progress; completion expected by target completion date of April 30, 1997)

#### Current Status of Waste Drums

The aforementioned corrective actions have focused on correcting and improving waste control and management. Other activities have involved drum disposition for the subject drums which were returned to 324 and 327 and other drums from the same waste stream packaged prior to November 1, 1996. These drums disposition activities are summarized below.

#### 324 Building Drum Disposition Activities:

1. Forty-nine drums were shipped on January 9, 1997, to T-Plant for repackaging to remove any prohibited items detected by RTR inspection or suspected of containing prohibited items based on waste drum contents inventory documentation.
2. Twenty-eight drums were shipped to the waste complex on February 14, 1997, for verification inspections. (These 28 drums did not contain any prohibited items.)
3. Real-time radiography was completed on all of the remaining LLW drums from the same waste stream to check for potential prohibited items. Any drums which contain prohibited items are being managed as dangerous waste and are being prepared for shipment to T-Plant for repackaging.
4. Nondestructive assay has been completed on all of the remaining LLW drums from the same waste stream to prepare the drums for shipment to the 200 Area. Waste certification and preshipping documentation are in progress, with shipping expected by March 31, 1997.

#### 327 Building Drum Disposition Activities:

1. Twenty-nine drums were shipped on January 7, 1997, to T-Plant for repackaging to remove any prohibited items detected by RTR inspection or suspected of containing prohibited items based on waste drum contents inventory documentation.
2. One drum was unpackaged on January 10, 1997, and one drum was unpackaged on January 24, 1997, at the 327 Building to remove light bulbs. (Unpackaging confirmed the presence of light bulbs, which were removed and segregated).
3. Nondestructive assay has been completed on all of the remaining LLW drums from the same waste stream to prepare the drums for shipment to T-Plant for RTR inspection and repackaging as appropriate. Waste certification and preshipping documentation are in progress, with shipping expected by March 31, 1997.

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ENCLOSURE 2

325 Building Information

### 325 Buildings Information

Pacific Northwest has taken a number of significant actions to prevent future addition of dangerous waste to low-level waste (LLW) containers. These actions include the following:

#### 325 Building Drum Disposition Activities:

- Clear plastic bags are now used for collection of LLW in place of the opaque yellow bags previously used. These bags allow easier and more efficient visual examination of the waste prior to compaction and packaging.
- Waste Management staff provide oversight for waste generation activities, including verification/approval of waste prior to disposal. This oversight is assisted by the use of seals on waste containers to prevent unauthorized additions.
- A "Prohibited Article" posting is placed near each LLW debris container to remind generators what items are not allowed.
- Pre-verification of LLW debris destined for compaction has been improved. Each bag of compactible waste is visually scrutinized and/or opened for hands on inspection as necessary.
- Instructions to the generator for completing the Waste Inventory Sheet (WIS) have been revised to require more detailed entries and to emphasize the importance of segregation. Commonly observed prohibited articles are also listed as an aid to the generator.
- Special training has been provided to all PNNL waste generators. This training introduces the new waste management program requirements and implementation noted above.

Any waste containers packaged prior to the implementation of these requirements will receive 100% verification prior to shipment either by visual or RTR examination.

Pacific Northwest has also taken steps to examine existing LLW containers suspected of containing dangerous waste constituents. A summary of these actions follows.

- Seven drums of LLW debris were suspected of containing light bulbs and/or batteries following Real-Time Radiography (RTR) examination, and were assigned a 90-day accumulation date based on the date of the RTR examination. All of these drums were opened, visually inspected and repackaged by PNNL Waste Management staff by 2/7/97 (prior to expiration of the 90 day clock). Light bulbs and/or batteries were removed from 6 of the 7 drums. No prohibited articles were found in one of the drums. All seven drums are now managed as LLW pending disposal.
- Thirty-three drums of LLW debris were returned from RTR examination at

the 306-E facility with suspect prohibited articles (primarily suspect lead). They have been managed in a 90-day accumulation area as "waste pending analysis" pursuant to Ecology Technical Information Memorandum 82-5. These drums include those discovered in late 1996 and drums recently sent for RTR as part of PNNL's on-going effort to internally verify this waste stream. Of the 33 drums, 30 were opened, visually inspected and repackaged by PNNL Waste Management staff by 3/6/97. The following summarizes the observations:

- ▶ No prohibited items were found in 26 of the 33 drums. These drums are being managed as LLW pending disposal.
- ▶ Hazardous items (two lead seals from two drums and lead solder from one drum) were removed from three drums and are now managed as mixed waste. The remaining waste from these drums are managed as LLW pending disposal.
- ▶ One drum contained liquids (not debris waste) and was returned to the generator for repackaging. This liquid is still managed as "Waste Pending Analysis"; however, it is not expected to be hazardous.
- ▶ One drum which was not opened due to internal alpha contamination concerns is currently managed as mixed waste (toxic) in a 325 90-day storage area. The accumulation start date on this drum is the date of the RTR examination, 1/14/97.
- ▶ One drum which was not opened due to dose rate concerns (and internal contamination) is being managed in a 90-day area as Waste Pending Analysis. This drum will be inspected when appropriate facilities can be prepared (approximately 2 weeks). Based upon the clarity of the RTR results, PNNL believes the suspect items to be lead.
- ▶ One drum was not opened because the RTR results indicated "suspect lead chips" throughout the drum. A discussion with the waste generator satisfactorily disputed the presence of lead in the waste by establishing that lead is not used in the generator's activities. This drum is currently being managed as LLW pending disposal.