



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES

Post Office Box 2063  
Harrisburg, Pennsylvania 17120

May 11, 1992

Radiation Protection

(717) 787-2163

Mr. Richard W. Cooper, Director  
Division of Radiation Safety and  
Safeguards  
U.S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Gentlemen:

Subject: Pennsylvania LLRW Shipment Inspection Report No.  
50-412/PA-92-01

On May 4, 1992, Mr. R. Janati, Nuclear Engineer, performed an inspection of LLRW shipment no. B-1663 at the Beaver Valley Power Station Unit 2. A copy of the inspection report no. 50-412/PA-92-01 is enclosed with this letter. This report is being forwarded to you for docketing, distribution, and any other action you may deem necessary. This inspection was conducted under the provisions of a Memorandum of Understanding between the Commonwealth of Pennsylvania and the Nuclear Regulatory Commission (NRC). A copy of this letter and our inspection report is being forwarded to the Duquesne Light Company for their information.

Within the scope of this inspection, no violations or deviations were noted.

Your cooperation with our staff and the Commonwealth of Pennsylvania is appreciated.

Sincerely,

*William P. Dornis*  
William P. Dornis, Acting Director  
Bureau of Radiation Protection

Enclosure

cc: Duquesne Light Company

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Pa. Department of Environmental Resources  
Bureau of Radiation Protection  
Division of Nuclear Safety

Report No. 50-412/PA-92-01

Docket No. 50-412

License No. NPF-73

Licensee: Duquesne Light Company  
Post Office Box 4  
Shippingport, PA 15077

Facility: Beaver Valley Power Station, Unit 2

Inspection At: Shippingport, PA

Inspection Date: May 4, 1992

Inspector: R. Danati  
R. Danati, Nuclear Engineer  
Acting Chief, Nuclear Safety Section

5/11/92  
Date

Approved by: W. P. Dornis  
W. Dornis, Acting Director  
Bureau of Radiation Protection

5/12/92  
Date

Inspection Summary: Inspection on May 4, 1992 (Inspection Report No. 50-412/PA-92-01)

Areas Inspected: Announced inspection of the licensee's low level radioactive waste shipment to the burial site including: shipping documentation, package inspection, labeling, marking, placarding, vehicle inspection, radiation and contamination surveys.

Results: No violations or deviations were identified.

## DETAILS

### 1.0 Individuals Contacted

#### 1.1 Licensee Personnel

- \* R. Vento, Director, Radiological Engineering
- \* A. Castagnacci, Sr. Health Physics Specialist
- W. Brady, Health Physics Specialist
- J. Folkens, Sr. Quality Assurance Specialist
- M. Rice, Quality Control Inspector
- J. Welsh, Radiation Technician

#### 1.2 U.S. Nuclear Regulatory Commission

P. Sena, Resident Inspector

- \* Denotes those present at the exit meeting

### 2.0 Scope of the Inspection

This inspection was conducted in accordance with the Memorandum of Understanding (MOU) between the Commonwealth of Pennsylvania and the U.S. Nuclear Regulatory Commission. The State inspector reviewed the licensee's low-level radioactive waste shipment no. B-1663 to the Barnwell Waste Management Facility according to the attached inspection checklist.

The shipment contained 50.09844 curies of Unit 2 dewatered resin and was determined to be Class B Stable Waste. The shipment was packaged in a Model PL8-120FR Polyethylene High Integrity Container (HIC) with a disposal volume of 120.3 cubic feet. The HIC was transported in a Chem-Nuclear Model CNSI 14-215H-6, NRC certified, Type A shipping cask.

The inspector witnessed loading of the HIC into the cask; placement of security seals; cover placement and bolt down with QC verification of bolting pattern and torque. The inspector also examined the cask and determined that it was in satisfactory material condition.

The inspector performed an independent radiological survey of the cask with the HIC inside. The highest reading detected was 164 mR/hr on the bottom of the cask. The highest removable contamination detected from smear samples taken at representative locations around the outer surface of the cask was 3 counts per minute (cpm) above background or approximately 0.1 dpm/cm<sup>2</sup>. The

inspector also witnessed the utility radiological surveys, QC inspection, QA audit, and transfer of shipping papers to the driver. A visual inspection of the vehicle was performed to ensure that the vehicle was in acceptable condition for transport.

The inspector performed an independent verification of licensee's calculations for waste classification, Low Specific Activity (LSA), Reportable Quantity (RQ) and A2 Quantity determination. The shipping papers were reviewed for completeness and accuracy. No discrepancies were noted.

### 3.7 Exit Meeting

The inspector met with the licensee representatives denoted in Section 1.0 at the conclusion of the inspection on May 4, 1992. The inspector summarized the scope and findings of the inspection.

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF RADIATION PROTECTION  
DIVISION OF NUCLEAR SAFETY  
LOW LEVEL RADIOACTIVE WASTE SHIPMENT  
INSPECTION REPORT

REVISION 1

Report No. 50-412/PA-92-01

A. General Information

1. Date of Inspection May 4, 1992  
2. Name of Shipper Beaver Valley Power Station (BVPS)  
3. Name of Carrier Chem Nuclear Systems, Inc. (CNSI)  
4. Destination Barnwell, S.C.  
5. Verify Advanced Notification to the Consignee NA

[Fissile materials, and Type B or highway route controlled quantities - 49 CFR 173.22(c)]

6. Verify Advanced Notification to the State(s) NA

[(Type B packages only - 10 CFR 71.97)]

7. Package(s) Used

- Cask CNS14-215H-6  
 HIC PL8-120FR  
 Liner  
 Drums  
 Boxes  
 Other (Specify)

8. Number of Packages one

9. Method of Shipment

- A.  Exclusive Use  
B.  Non-Exclusive Use

10. Transport Vehicle

- Open  
 Closed

B. Shipping Documentation Checklist

1.  Shipping papers present [49 CFR 172.200, 201, 202, 203]  
2.  Proper shipping name and hazard class [172.202(a)]  
3.  Proper I.D. number [172.202(a)]  
4.  Waste Description Dewatered Bead Resin and  
total quantity by weight (lbs) [172.202(a)] HIC 5050.0  
volume (cu. ft.) [172.202(a)] 120.3, activity (Ci) [172.203(d)] 50.09844



5.   X   Radionuclides identified [10 CFR 20.311(b) & 49 CFR 172.203(d)]
6.   X   Total quantity of radionuclides H-3, C-14, Tc-99 and I-129 shown [10 CFR 20.311(L)]
7.   X   Waste classified and characterized properly [§1.55, 61.56 and BTP] Class B Stable  
(Perform a review of documentation for classification and characterization to determine if  
classification is correct and reasonable)
8.   X   Description of chemical/physical form [172.203(d)]
9.   X   Category of label applied to each package [172.203(d)]
10.   NA   T.I. assigned to each package bearing Y-II or Y-III [172.203(d)]
11.   X   Shipper's certification [172.204(a)]
12.   X   Instructions to carrier provided [173.441(c), 173.425(b)] (exclusive use only)

C. **Packaging/Package Inspection**

a. **Packaging Compliance**

  NA   Are authorized packages used? [173.415, 173.416]

Package types used:

  NA   LSA-strong tight [173.425(b)]

DOT-7A, Type A

  NA   Performance test records on file? [173.415(a)]

NRC Certified

  X   Current NRC COC's on file? [10 CFR 71.12(c)] COC # USA/9111/A, Revision 6.

  NA   Registered with NRC NMSS as user? [71.12(c)]

(Prior to the licensee's first use of the package)

b. **Security Seals and Package Integrity**

  X   Security seals [173.412(b)] (LSA-Exclusive use, closed vehicle exempt)

  X   Lids secure [173.475(c)]

  X   No visible damage or leakage [173.425(b)]

  X   Packages surveyed for radiation [173.441] and contamination [173.443]

D. Labeling, Marking and Placarding Checklist

a. Labeling

- NA Packages labeled W-I, Y-II, Y-III [172.403(b), (c)]  
(LSA - Exclusive use exempt)
- NA "Contents" and "Activity" entered [172.403(g)]
- NA Transport Index affixed on Y-II, Y-III labels [172.403(g)]

b. Marking

- X Packages marked properly, i.e., proper shipping name, identification number, DOT Spec. number, NRC COC number, consignee or consignor's name and address, etc. [172.301, 304, 306]
- X Type A/type B package marked "Type A" or "Type B" [172.310(a)] Type A Cask
- X Gross weight marked if package exceeds 110 pounds [172.310(a)] HIC 5050 lbs & Cask 43,700 lbs
- X Waste class marked A-B-C stable/unstable [10 CFR 20.311(d)(2)] Class B Stable (HIC only)
- X LSA - Exclusive use package marked "RADIOACTIVE-LSA" [173.425(b)]

c. Placarding

- X Placards on each end and sides of vehicle for Y-III, LSA exclusive use and highway route controlled quantity [172.504(a), 506, 507, 173.425(b)]

E. Vehicle Inspection Checklist

- X Verify that vehicle was monitored and inspected by the licensee upon arrival. DLC/RCM Form 3.4
- X Shipment blocked, braced, tied down in vehicle [173.425(b)]
- X Ensure that the licensee surveys the shipment adequately using proper instruments. Review the licensee's survey map(s) to verify that all the required readings are performed and they are in reasonable agreement with inspector's. DLC/RCM Form 3.4

F. Radiation/Contamination Survey [49 CFR 173.441, 173.443]

a. Exclusive Use Vehicles

- 1.52 Not exceed 2 mR/hr in any occupied position in the vehicle
- 8.1 Not exceed 10 mR/hr at 2 meters (6.6 ft) from the vehicle
- 164 Not exceed 200 mR/hr on outer surface (including upper or lower) of the vehicle
- NA Not exceed 1,000 mR/hr on the external surface of the package (closed transport vehicle)
- 119 Not exceed 200 mR/hr on the external surface of the package (open transport vehicle)

b. Non-Exclusive Use Vehicles

- NA Not exceed 10 mR/hr at 1 meter (3.3 ft) from package
- NA Not exceed 200 mR/hr on the external surface of the package

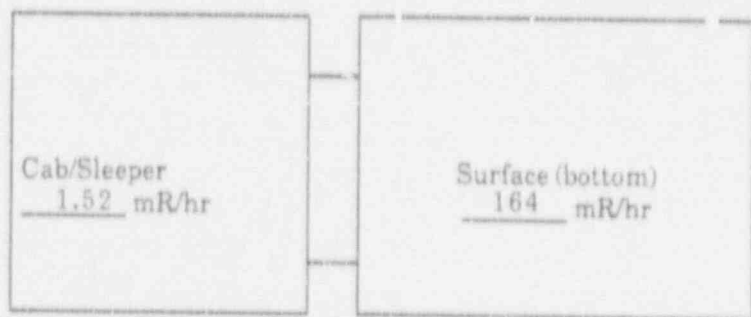
c. Highest Contamination Detected      Approximately 0.1 DPM/CM<sup>2</sup>

Not exceed 22 dpm/cm<sup>2</sup> (beta & gamma)  
 (Wipe sample for 300 cm<sup>2</sup>)

Highest Contamination Detected	<u>21</u>	CPM
Background Reading	<u>18</u>	CPM
Difference/Above Background	<u>3</u>	CPM
Divide by Instrument Efficiency (0.10)	<u>30</u>	
Divide by (300 cm <sup>2</sup> )	<u>0.1</u>	DPM/CM <sup>2</sup>

RADIATION/CONTAMINATION SURVEY (transport vehicle)

Surface      119      mR/hr  
 2 meters      6.74      mR/hr



Surface      119      mR/hr  
 2 meters      0.62      mR/hr

Surface      119      mR/hr  
 2 meters      8.1      mR/hr

Surface - Highest Reading on Cask Surface



G. Results of Inspection

1. Violations/Non-Compliance

Within the scope of this inspection, no violations were observed.

II. Comments

In general, BRP instrument readings were higher than the licensee's. This could be attributed to the use of different instruments. Both readings were within the allowable limits.

Instruments Used

	<u>Instrument(s) Type</u>	<u>Serial No.</u>	<u>Calibration Expiration Date</u>
Dose Rate Instrument	ESP-2 Eberline HP-270	00312	7-13-92
Contamination Instrument	ESP-2 Eberline HP-210	00312	7-13-92

Inspector's Name

Richard R. Janati