

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 040-07604/94001(DRSS)

Docket No. 040-07604

License No. SUB-908

Licensee: BP Chemicals America, Inc.
Fort Amanda and Adgate Roads
Lima, OH 45802

Inspection Conducted: February 24, 1994

Inspector: *Kenneth J. Lambert*
Kenneth J. Lambert
Radiation Specialist

4/15/94
Date

Approved By: *George M. McCann*
George M. McCann, Chief
Fuel Facilities and Decommissioning
Section

4/15/94
Date

Inspection Summary

Inspection on February 24, 1994 (Report No. 040-07604/94001(DRSS))

Areas Inspected: This was a special announced inspection of the licensee's decommissioning activities. The areas inspected were organization, restricted areas and posting, and the licensee's deep well injection program. The NRC inspector also accompanied ORISE during the confirmatory survey of the V-1 Pond.

Results: Within the scope of this inspection no violations of NRC regulations were identified. The ORISE survey progressed as planned with preliminary data indicating residual radioactive materials below NRC's unrestricted use release criteria.

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DETAILS

1. Persons Contacted

*W. Rupert, Technical Specialist-Environmental
R. Chretien, Radiological Control Supervisor, Halliburton/NUS

* Indicates person present during the exit meeting.

2. Facility History

BP Chemicals currently owns and operates the Chemical Production Facility in Lima, Ohio. This site contains buildings and outside areas contaminated with depleted uranium from the production and use of a catalyst material in the production of Acrylonitrile from 1963 to 1971.

In 1978 to 1980 an attempt was made to remediate the facility, with a confirmatory survey indicating that several areas of contamination in excess of unrestricted use criteria remained. In 1985 to 1988 a second attempt at remediation was conducted with several areas of the facility released for unrestricted use. In addition, the confirmatory survey identified other areas where further remediation was needed.

In October 1989 the licensee conducted a site characterization with the submittal of a decommissioning plan in August 1990. Remediation of the facility began in June 1991 and is currently in progress. In December 1991 the NRC authorized phase one in the remediation of four ponds containing depleted uranium contaminated sludge. In 1993 the licensee removed the mixed waste sludge and contaminated soil from the V-1 pond. The sludge was added to another pond and the soil stockpiled until the pond closure plan is approved.

BP Chemical submitted its latest license amendment application in February 1994. This application requests authorization to conduct the mixed waste pond closure project. This project entails the stabilization of the mixed waste sludge and soils in three disposal cells onsite.

3. Organization

The licensee's Technical Specialist-Environmental is the project manager for the decommissioning activities. The project manager reports to the Manager-Health, Safety and Environment, who in turn reports to the Plant Manager. In addition, the licensee currently contracts with Halliburton/NUS to perform the pond closure project decommissioning activities. The contractor has an onsite project manager and a radiation control supervisor to oversee the decommissioning activities.

No violations of NRC requirements were identified.

4. Materials and Facilities

NRC Source Material License No. SUB-908 authorizes the possession of depleted uranium incident to decommissioning activities. Depleted uranium is found in soils surrounding the Acrylonitrile I Facility and in the sludge of four ponds in concentrations greater than 35 picocuries per gram (pCi/g) (1.3 Becquerels per gram (Bq/g)). Depleted uranium is also present in approximately 1700 drums of sandblast media waiting to be disposed. In addition, a solid waste disposal area has been identified with levels of depleted uranium activity greater than 35 pCi/g (1.3 Bq/g). Hazardous waste has been identified in this area, with the possibility of mixed waste being present. The licensee has not fully characterized this area, but is developing a plan to do so. The unrestricted use release criteria for depleted uranium is 35 pCi/g (1.3 Bq/g) and is found in NRC's Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium from Past Operations," 1981.

No violations of NRC requirements were identified.

5. Confirmatory Survey

Oak Ridge Institute for Science and Education (ORISE) performed a confirmatory survey of the bottom and the accessible sides of the excavated V-1 Pond. The survey consisted of walk over surface scans using sodium-iodide (NaI) gamma radiation detectors; exposure rate measurements, one meter above the surface, at 18 locations using a pressurized ionization chamber (PIC); and collection of soil samples from 29 randomly selected grids blocks. The sides of the pond were surface scanned, but limited exposure rate measurements were conducted due to the steepness of the slopes. Two areas in the bottom of the pond contained water and were not surveyed or sampled. These were a drainage trench around a compacted clay test pad and a dewatering sump. The preliminary data collected by ORISE did not indicate the presence of elevated areas of activity.

6. Restricted Areas and Posting

From a tour of the facility, the inspector determined that the areas containing radioactive contamination in soil and the four ponds containing contaminated sludge were restricted and posted with "Caution Radioactive Materials." In addition, the solid waste management unit identified with depleted uranium activity was secured from unauthorized access.

The licensee is controlling access to the remediated pond until NRC reviews the confirmatory survey report and determines the residual radioactive materials are below NRC's unrestricted use release criteria. All individuals entering this area must wear disposable coveralls and survey themselves prior to exiting the restricted area. All heavy equipment is power washed prior to entering the restricted area. In addition, the equipment is power washed and surveyed prior to release for unrestricted use.

No violations of NRC requirements were identified.

7. Deep Well Injection

License Condition 23 authorizes disposal of pond water from the mixed waste pond closure project into its system of underground injection wells. The uranium concentration must be less than 30 picocuries per liter (pCi/l) (1.1 Becquerels per liter (Bq/l)) for the water to be released. The procedure is to transfer pond water to holding tanks, where the water is sampled and held until the results of radiochemical analysis are received. If analysis results indicate that the water is releasable, it is blended with other onsite water and injected into one of three deep wells. The licensee began deep well injection of pond water in September 1992. The licensee has processed 647 loads totalling 9.7 million gallons (36.7 million liters) of water as of February 18, 1994. During pumping of pond water, it was noted that the total uranium concentration was increasing as the water level dropped in the pond. However, concentrations remained below the 30 pCi/l (1.1 Bq/l) level. The increased concentration was believed due to stirring up the pond sludge by the movement of water during the pumping operation. The licensee added a chemical mixture to precipitate out the suspended solids. In addition to precipitating out the suspended solids, the chemical mixture provided a cover over the pond sludge several inches thick. This resulted in lowering the concentration of uranium in the pond water.

A review of the pond water disposal records was conducted with no discrepancies identified. The concentration of total uranium averaged less than 10 percent of the 30 pCi/l (1.1 Bq/l) license condition limit for releasing water to the deep well injection system.

No violations of NRC requirements were identified.

8. Exit Meeting

An exit meeting was held with the individual indicated in Section 1 of this report at the conclusion of the inspection on February 24, 1994. The preliminary results of the inspection and the ORISE confirmatory survey were discussed. The licensee representative did not identify any information as being proprietary.