



Department of Energy
Washington, DC 20585

January 16, 2002

Dr. Peter Paul, []
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Subject: Enforcement Letter

Dear Dr. Paul:

This letter refers to an evaluation by the Department of Energy (DOE) of three reports of noncompliances with quality assurance and/or occupational radiation protection provisions of DOE's nuclear safety requirements occurring at Brookhaven National Laboratory (BNL). These issues, described below, were reported into the Noncompliance Tracking System (NTS) by your staff and involved procurement and/or control of radioactive sources.

1. On January 19, 2001, BNL reported that an [radioactive] neutron source in an unlabeled package had been moved from a posted High Radiation Area to radiologically controlled area without high radiation postings and left there for 11 months. Personnel worked in the area of the neutron source and they were unaware of the hazard. (NTS-CH-BH-BNL-BNL-2001-0001)
2. BNL reported a repetitive problem on June 22, 2001, after it identified four similar noncompliances with the BNL procedure for purchase, receipt and delivery radioactive sources. (NTS-CH-BH-BNL-BNL-2001-0002)
3. On August 3, 2001, BNL reported that personnel moved a radioactive source to a facility without adequate control, and it subsequently found that the source exceeded the facility threshold limit. (NTS-CH-BH-BNL-BNL-2001-0003)

The neutron source involved in the January 2001 report had been placed into a 55-gallon drum in 1996. In late 1999, the drum was placed into an overpack to prevent deterioration of the radioactive material package. During this activity, BNL failed to label the overpack appropriately. BNL then transported the package to a radiologically controlled area without high radiation area postings. BNL found the problem in November 2000, during characterization and preparation for shipping of a different neutron source.

BNL conducted a dose assessment and radiation exposure investigation to determine neutron exposures during the time that the [radioactive] source was stored in the unposted location. The dose evaluation determined that four workers received a cumulative unplanned neutron exposure of less than 50 millirem and a negligible gamma exposure. Although no individual received a radiation exposure in excess of 100 mrem, DOE is concerned that BNL failed to adhere to the established basic radiological and work control processes, which resulted in an unposted, inadequately controlled high radiation area for approximately one year. The relatively minor radiation exposures received by the workers were not limited by positive controls implemented at the facility but by fortuitous circumstances.

The noncompliance reported in June 2001 involves four similar nuclear safety noncompliances documented in Radiological Awareness Reports. Individually, these issues most likely would not have met the threshold for reporting into the NTS. However, BNL determined that the occurrence of multiple similar noncompliances may represent an adverse trend, and thus met the NTS reporting threshold. This trending of Radiological Awareness Reports indicates that BNL is making progress in an area previously identified in a Price-Anderson Amendments Act Program Review as deficient.

The noncompliance reported in August 2001 involved the storage of radioactive material in excess of radiological facility limits. During retrieval of a 98-curie [radioactive] source, BNL discovered the facility storing the source was a radiological facility and limited by DOE STD-1027 to only 60 curies. The noncompliance resulted because BNL failed to maintain the [radioactive] source as a certified "sealed source" and its corresponding exemption from hazard categorization inventory limits per DOE and site requirements. Corrective actions included modifying source control work processes, extent of condition reviews, and re-certification of the [radioactive] source.

DOE has reviewed BNL's corrective actions including those corrective actions taken and those planned to ensure compliance and prevent recurrence. These corrective actions appear adequate to correct the problems and prevent recurrence. Also, DOE noted the indications of improvement in the area of trending for repetitive or programmatic issues. Therefore, these matters meet the discretionary criteria not to undertake enforcement action in these cases as described in DOE's nuclear safety enforcement policy.

No response to this letter is required. DOE will continue to monitor implementation of your corrective actions for the subject NTS reports. Should you have any questions concerning this letter, please contact Sharon Hurley of my staff at 301-903-0110.

Sincerely,



R. Keith Christopher
Director
Office of Price-Anderson Enforcement

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