

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-293/92-02

Docket No. 50-293

License No. DPP-63

Licensee: Boston Edison Company
RFD #1 Rocky Hill Road
Plymouth, Massachusetts 02360

Facility Name: Pilgrim Nuclear Power Station

Inspection At: Plymouth, Massachusetts

Inspection Conducted: February 18-21, 1992

Inspectors: P. O'Connell 3-5-92
P. O'Connell, Radiation Specialist, date
Facilities Radiation Protection Section

S. Holmes 2/5/92
S. Holmes, Radiation Specialist, date
Effluents Radiation Protection Section

Approved by: W. Pasciak 3-18-92
W. Pasciak, Chief, Facilities date
Radiation Protection Section, DRSS

Areas Inspected: A routine unannounced inspection of the radiological controls program at your facility was conducted by P. O'Connell and S. Holmes on February 18-21, 1992.

Areas reviewed included: the Status of Previously Identified Items, Facility Tours, Dosimetry, and Radiation Monitoring Instrument Calibrations.

Results: Within the scope of this inspection, no safety concerns or violations of regulatory requirements were identified. The inspectors noted that a good program was in place for

issuing, controlling, and maintaining oversight of vendor processing of personnel dosimeters. A weakness involving the calibration and response checking of neutron survey instruments was noted, but the licensee's staff initiated prompt corrective actions to address the weakness.

DETAILS

1.0 Personnel Contacted

1.1 Licensee Personnel

- *E. Bouiette, Station Director
- *N. Desmond, Compliance Division Manager
- B. Eldredge, Senior Quality Assurance Engineer
- C. Goddard, Radwaste and Chemistry Manager
- *E. Kraft, Plant Manager
- *J. McClellan Senior Quality Assurance Engineer
- *T. McElhinney, Senior Compliance Engineer
- *H. Oheim, Regulatory Affairs Department Manager
- B. O'Connell, Radiation Protection Supervisor - Calibrations
- W. Rotmert, Director, Nuclear Administration
- *L. Schmeling, Nuclear Services Department Manager
- *E. Wagner, Vice President - Nuclear Engineering
- *L. Wetherell, Radiation Protection Manager
- *A. Williams, Radwaste Division Manager

1.2 NRC Personnel

- *J. MacDonald, Senior Resident Inspector
- *D. Kern, Resident Inspector

* Denotes those present at the exit meeting on February 21, 1992. Other licensee employees were contacted and interviewed during the inspection.

2.0 Status of Previously Identified Items

- 2.1 Unresolved Item 50-293/90-10-01. This item involved the licensee not having an onsite facility for interim storage of low level radioactive waste. The licensee provided the inspector with the current status of the construction of such a facility. To date, the licensee has received and evaluated bids for the construction of the facility. The licensee anticipates that the contract to construct the facility will be finalized during the latter part of the first calendar quarter of 1992. The facility is scheduled to be completed by July 1993. The licensee stated that they have sufficient storage capacity for the anticipated volume of low level radioactive waste generated during the time period between completion of the storage facility and the anticipated closure of the burial sites, i.e. January 1993 to July 1993. This item is closed.

- 2.2 Unresolved Item 50-293/91-26-01. This item involved the licensee not monitoring the release of liquids, oil, sewage, dirt, sand, or other granular materials using the lower limit of detection (LLD) found in their environmental Technical Specifications. In response to this item, the licensee issued Radiological Section Standing Order No. 92-26. The standing order specifies the appropriate LLD for analyzing oil and sewage. The licensee stated that they would incorporate the guidance of the standing order into applicable procedures the next time the procedures are revised.

The standing order did not address the analysis of other liquids, dirt, sand, or other granular material. The licensee stated that they do not release these types of material and that they would address the monitoring of these types of materials using the environmental LLD should the need arise. This item is closed.

The inspector discussed with licensee representative the monitoring requirements for mechanical components which contain a very small volume of lubricating oil or grease. These components are accumulated and sent to an offsite laboratory for nonradiological testing and disposal. These types of shipments are made on a very infrequent basis. Due to the very small sample volume the licensee has found it prohibitive to analyze this type of sample using their environmental LLD as acceptance criteria.

This item was discussed with Region I management and NRR representatives who indicated that due to the infrequent nature of the shipments and the small sample size, it is not reasonable to require the licensee to analyze this type of sample using their environmental LLD as acceptance criteria. However, the licensee is still required to conduct a reasonable survey to ensure that they do not release radioactive material to unrestricted areas. The inspector stated that it is the licensee's responsibility to demonstrate that they have conducted a reasonable survey.

- 2.3 Unresolved Item 50-293/91-26-02. This item involved the licensee's completion of their updated review of potential unmonitored release pathways. The licensee undertook the update of their review as a result of their identification of the motor generator set oil separator tank sump as a potential unmonitored release pathway. The licensee had not identified this pathway in their original response to IE Bulletin 80-10 "Contamination of Nonradioactive System and Potential for Unmonitored, Uncontrolled Release of Radioactivity to the Environment".

The licensee's updated review identified and proposed sampling mechanisms for two additional potential liquid pathways, the storm water drain system and the septic system effluent. The licensee's updated review also identified the Turbine Building vent system as being a potential unmonitored gaseous release pathway. The licensee plans to tie this system into the reactor building vent system during the next refueling outage. Progress in this area will be reviewed during the next Effluents Radiation Protection inspection. This item is closed.

- 2.4 Inspector Follow-Up Item 50-293/91-13. This item involved reviewing licensee progress in ensuring that contractor employees terminating employment follow the licensee's procedures and receive exit whole body counts (WBCs). The licensee's past experience has been that, although contract workers are trained in the licensee's exit WBC requirements, a small percentage of the workers leave site without fulfilling the exit WBC requirement. Prior to the last refueling outage the licensee adopted a policy of including in vendor contracts a clause that allows the licensee to withhold invoice payment for vendors whose employees failed to get exit WBCs. The licensee has found this approach to be effective. This item is closed.

3.0 Facility Tours

The inspector conducted several tours through the facility. All areas observed were properly posted, barricaded, and/or locked as required by 10 CFR Part 20 and licensee procedures.

The inspector discussed with the Radwaste and Chemistry Manager a recent licensee initiative regarding enhancing controls for spent fuel pool (SFP) work activities. During October 1991 the licensee re-inventoried the material stored in the SFP to reflect material added during the last refueling outage. Various material is stored in the SFP attached to lines which are secured to the SFP railing. During the inspection the licensee was in the process of attaching identification labels to these lines. The licensee is evaluating the feasibility of locking the lines to the side of the SFP in order to prevent inadvertent or unauthorized lifting of the material supported by the lines. As part of their initiative the licensee expanded the Foreign Material Exclusion Zone (FMEZ) surrounding the SFP and is implementing administrative controls to limit the amount of material stored in the SFP.

The licensee implemented adequate radiological controls for SFP activities. Constant radiation protection coverage was required for all SFP work activities and the radiation work permit required workers to be briefed and informed not to lift material from the SFP. The inspector noted that an enhancement could be made in posting an explicit precaution sign in the vicinity of the SFP reminding workers not to remove any material from the SFP. The licensee did have a posting on the FMEZ boundary. However, the wording of the posting which stated "Do Not Lift Lanyard" was nebulous. This item will be reviewed during a future inspection.

4.0 Dosimetry

The licensee uses a vendor contract service to process their thermoluminescent dosimeters (TLDs). The inspector reviewed the National Voluntary Laboratory Accreditation Program (NVLAP) certification for the two types of TLDs used on site. The TLD routinely used is NVLAP accredited in categories 1 through 7. The second TLD, used for neutron monitoring, is NVLAP accredited in categories 1 through 8. The inspector discussed with licensee representatives the design characteristics of the TLDs used on site and the algorithms used to process the TLDs. The inspector had no concerns in this area. The inspector reviewed records from the licensee's "TLD Performance Test Program" which is the licensee's independent quality assurance check of the vendor processor's program. The inspector found this program to be well implemented.

The inspector reviewed the licensee's program for issuing personnel monitoring devices including: whole body and extremity TLDs, alarming dosimeters, and self reading pocket dosimeters. Within the scope of this review no discrepancies were noted. Licensee practice has been to issue TLDs to all individuals who enter their Restricted Area, which is the entire area within the site access building.

The licensee currently requires current quarter exposure data from every individual entering their Restricted Area, including visitors whose occupational dose at their site is administratively limited to 50 milliRem. This policy is conservative in comparison with federal regulations which only require the licensee to obtain current quarter exposure data for those individuals whose dose at their facility is likely to exceed 25% of the applicable standards specified in 10 CFR 20.101(a) and 10 CFR 20.104(a).

Licensee procedure 6.7.1.402, "Assessment of Intakes of Radioactive Material", specifies the licensee's criteria for including bioassay results with termination reports. The inspector reviewed selected termination reports for individuals who recently left the site and noted that bioassay results were included when required by procedure.

5.0 Calibration and Quality Control of Portable Radiation Monitoring Instruments and Count Room Equipment

The inspector reviewed the calibrating and issuing procedures for portable radiation monitoring instruments. The inspector also reviewed calibration, quality control (QC), and source certification records for portable radiation monitoring instruments and count room instruments. The calibration and issuance facility was evaluated and the calibration technicians interviewed on their knowledge and understanding of the

procedures and program. Generally, the calibration of the portable radiation monitoring instruments and health physics counting lab equipment was good and consistent with applicable American National Standards Institute (ANSI) recommendations. The inspector did note the following areas for improvement.

- Some QC checks of the counting equipment, though well within acceptance ranges, were skewed to the upper range with only one data point during a month long period being below the mean. Though this could indicate a error or bias within the system, no investigation or evaluation by the reviewing staff was performed. The inspector commented that specific guidance should be established on when to investigate such anomalies in QC data.
- The inspector noted two areas of concern regarding the calibration and source checking of the portable neutron survey meter, the Rem ball. The Rem ball was not being calibrated within the ANSI recommendations in that a source field calibration was not being conducted during the calibration. The licensee's routine calibration only consisted of setting the instrument discriminator and ensuring that the instrument needle deflected when exposed to a neutron source. In addition, the preoperational source check of the Rem ball was not consistent with the ANSI recommendation of ensuring that the instrument responded within a given range when exposed to a radiation source. Again the licensee was only ensuring that the instrument needle deflected when exposed to a neutron source. This practice also was not consistent with the guidance given in the licensee's general issuance of radiation survey instruments procedure. In response, the licensee stated that they will send the neutron meter out for full calibration by a certified facility and will review the source check procedures and insure that the written requirements and actual procedures are in agreement.

6.0 Exit Meeting

The inspector met with licensee representative at the conclusion of this inspection, on February 21, 1992. The inspector reviewed the purpose and scope of the inspection and discussed the inspection findings.