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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Docket No. 50-293
License No. DPR-35

Subject: Reply to Notices of Violation 90-23-01 and 90-23-02
Contained in Inspection Report 90-23

Dear Sir:

Attached is Boston Edison Company's reply to the Notice of Violation contained in the subject inspection report. As requested, this letter also addresses two questions on the qualification and turnover rate of Health Physics technicians.

This reply describes recent actions that have been taken to address procedural adherence in the Trash Compaction Facility. Adherance to procedures is a primary objective at Pilgrim and will continue to receive our highest attention.

Our reply to each Notice of Violation is identical and has been combined into a single response. Our understanding is that the first violation documents an unwanted result and the second violation documents activities that caused this unwanted result. Since these violations were issued in response to a single event, we request that violations 90-23-01 and 90-23-02 be considered a single violation.

Please do not hesitate to contact me if you have any questions regarding this reply.

G. W. Davis

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Attachment I: Reply to Notices of Violation 90-23-01 and 90-23-02
Attachment II: Reply to Questions on Qualification and Turnover Rate

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ATTACHMENT I

(REPLY TO NOTICES OF VIOLATION 90-23-01 AND 90-23-02)

Boston Edison Company
Pilgrim Nuclear Power Station

Docket No. 50-293
License No. DPR-35

NOTICE OF VIOLATION

1. 10 CFR 20.301, Waste Disposal, General Requirements, states in part that no licensee shall dispose of licensed material except by transfer to an authorized recipient or as authorized pursuant to 20.302 or Part 61 of that chapter.

   Contrary to the above, on October 31, 1990 an article contaminated with licensed radioactive material was released for unrestricted use by transfer to a recipient not authorized to receive licensed material, and without authorization pursuant to 20.302 or Part 61.

2. Technical Specifications Section 6.8, "Procedures and Programs", requires, in part, that written procedures shall be established, implemented, and maintained.

   A. Procedure 6.9-218, Operation and control of the Trash Compacting Facility (TCF), section 6[3], states that non-radioactive waste is not to be processed out of the TCF without documented survey results.

      Contrary to the above, on October 31, 1990 and for an undetermined period prior to this date, non-radioactive trash was processed in the TCF and released without performing a survey.

   B. Procedure 6.9-218, Operation and Control of the Trash Compacting Facility (TCF), section 7.1.2, states that the access door to the waste compactor is to be locked any time it is not attended by an RP technician who is surveying material for release. The key is to be in the possession of the shipping and storage supervisor/designee.

      Contrary to the above, during the period October 26 - 31, 1990, and for an undetermined period prior to that date, the access door was not locked and the key controlled in the manner required by the procedure.

Combined Response

Overview:

Non-radioactive waste from Pilgrim Station has been transported to a private waste disposal facility (SEMASS) since June, 1989. On October 31, 1990 a waste dumpster was released from Pilgrim for transport to SEMASS. Incoming vehicles at SEMASS are monitored for radiation by a highly sensitive instrument (scintilation detector). When the waste dumpster from Pilgrim was monitored at the SEMASS facility, radiation was detected and the dumpster was returned to Pilgrim. This was the first time radiation was detected in a dumpster from Pilgrim. Investigation at Pilgrim by plant personnel confirmed that radioactive material was present. A green polyethylene bag was found which contained oily rags and diatomaceous earth (D.E.). The contact dose rate from the bag of waste was 2 milliram per hour.

The dumpster originated from the Trash Compaction Facility (TCF) at Pilgrim. The TCF is adjacent to the plant protected area. Both radioactive and non-radioactive (clean) waste is prepared for disposal in the facility. In the TCF, clean waste is required by procedure to undergo a final check for radioactivity by counting in a shielded bag monitor. After counting, the clean waste is placed in a compactor/dumpster for volume reduction.

The Notice of Violation describes the procedural non-adherences as occurring "for an undetermined period" of time. Since the SEMASS radiation monitor was installed in January 1989, and clean waste from the training facility at Pilgrim started to be processed through the TCF around October 1989, and no other PNPS trucks have alarmed the SEMASS monitor, we are confident that this is an isolated incident.

Reason For Violation:

Investigations determined that the bag of oily rags and D.E. had originated in the Hazardous Material Storage Area (HMSA) which is connected to the TCF. In an effort to remove an oily film from the top of a 55 gallon drum of water, oil was skimmed from the top using a beaker and was absorbed using rags. The oily materials were placed in a green polyethelene bag with D.E. on 10/26/90.

The bag of oily waste was brought to the TCF for counting in the bag monitor on October 30, 1990. However, it could not be specifically determined how the bag of oily waste was placed in the clean compactor/dumpster without having been previously counted in the bag monitor. It was determined, however, that procedural adherence was less than adequate as follows:

- Procedure No. 6.9-218 "Operations and Control of the Trash Compaction Facility" contained a "Caution" that the door to the clean waste compactor/dumpster be locked when Radiological Controls personnel were not present and surveying material for release. The key to the lock for the compactor/dumpster was controlled by Waste Management personnel. Investigations showed that the door was not always locked when required. With the door to the compactor/dumpster not locked, it was possible that material could be placed into the compactor/dumpster without authorization.

  Extensive interviews confirmed that the personnel working in the TCF understood that waste was not to be placed in the clean waste compactor/dumpster without authorization. Similarly, we found no evidence to suggest that a bag of waste was intentionally placed in the compactor/dumpster without authorization.

  The primary reason the door was not locked as required was the inappropriate assignment of responsibility for the control of the key. Waste Management personnel did not always know when Radiological Controls personnel left the TCF or the clean waste processing area. Without that knowledge, it is reasonable from a human factors perspective, that the door to the compactor/dumpster may not have been locked when required.

- Procedure No. 6.9-218 also contained a "Precaution/Limitation" which stated that non-radioactive waste not be processed out of the TCF without documented survey results. Contrary to this requirement, waste from the training facility was processed out of the TCF without being surveyed. Waste from the training facility had been brought to the TCF for approximately a year. Subsequently, some personnel determined that surveying the training facility's waste was not necessary because the waste was known to be clean (originated outside the protected area) and was transported through a clean area.

  Although there was no possibility that the training facility waste contained radioactive material, the practice created the potential for confusing the training facility waste with other (potentially contaminated) waste in the TCF and inadvertently disposing of contaminated waste without performing a radiological survey. This presents the most likely scenario for the release of the contaminated green bag. It is believed that on October 31, 1990 while moving clean trash from the training facility through the TCF, the bag of oily waste that had been placed next to the bag monitor on the previous night, was confused with the training facilities waste and inadvertently disposed of without a radiation survey.

Corrective Steps Taken to Avoid Further Violations and the Results Achieved:

- The following steps reestablished procedural adherence and initiated thorough investigations.

  - The door to the clean waste compactor/dumpster was locked and controlled in accordance with procedure 6.9-218 on October 31, 1990.

  - Radiological Controls personnel were directed to survey all bags of waste entering the TCF in the bag counter prior to placing them in the clean waste compactor/dumpster on October 31, 1990.

  - A level 1 Radiological Occurrence Report (90-10-31-0132) was written on October 31, 1990 and Critique 90-22 was conducted.

- The following corrective steps have increased the Radiological Controls oversight of TCF operations.

  - The TCF personnel access gate has been posted "Contact Radiological Controls Prior to Entry" to assure Radiological controls personnel are cognizant of work activities.

  - Radiological Controls supervisory presence in the TCF has been increased, to verify continued procedural adherence.

  - The TCF building was posted as a "Radiological Controlled Area". The radiological controlled area (RCA) concept is employed to emphasize that any material/persons which enter an RCA are considered potentially radioactive/contaminated until designated otherwise by specific radiological surveys.

- The following corrective steps address procedural compliance and organizational/personnel responsibility issues.

  - Procedure 6.9-218 was substantially revised to improve clarity/understanding and to change the responsibility for control of the key to the clean waste dumpster to Radiological Controls Personnel. The revision also added a definition for "mixed waste". Revision 1 of Procedure 6.9-218 was approved for issuance on November 12, 1990.

    With respect to your cover letter question on procedural validation, a review of the validation of Procedure 6.9-218, Rev. 0 was conducted. The validation was thoroughly performed by a qualified individual. However, in retrospect, it is clear that human factors could have been improved. As stated previously, this procedure was revised. A more thorough technical review and validation procedure was implemented on January 4, 1991. As of January 4, 1991 one hundred thirty six individuals had been trained and designated technical reviewers. The development of Procedure 1.3.4-4, "Procedure Technical Review and Validation" and subsequent training was a major commitment to improve the quality of procedures. Procedure quality is an important element in procedural compliance and is a high priority at Pilgrim.

  - A meeting with Radiological Section personnel was held on November 2, 1990 to reinforce the importance of strict procedural compliance and to emphasize the lessons learned from this event.

  - Standing Order 90-15 "Control of Access Door to the Clean Waste Compactor at the TCF" was issued on November 9, 1990 to reinforce procedural requirements for control of the door to Radiological Controls personnel.

  - Radwaste personnel involved in the operation of the TCF have been counseled on the importance of strict procedural compliance with emphasis on the lessons learned from this event.

  - The TCF Radwaste supervisor has been assigned overall responsibility for operation of the TCF.

- The practice of bringing trash from the training facility to the TCF has been stopped.

- The Quality Assurance Department conducted a surveillance of the TCF/HMSA from January 9-17, 1991. The focus of the surveillance was on adherence to procedures. No procedural deviations were noted. However, various inconsistencies between implementing procedures were identified. Appropriate corrective action will be taken.

Date of Full Compliance:

- Full compliance was achieved on October 31, 1990 when Pilgrim reestablished control of the radioactive bag of waste and procedural compliance was reestablished.

ATTACHMENT II

(RESPONSE TO QUESTIONS ON QUALIFICATION AND TURNOVER RATE)

Concern 1: Criteria for use in evaluating the experience of applicants being considered for the position of senior health physics technician are not formalized.

Response 1: The appropriate level of review and selection criteria, has been applied to the selection of senior health physics technicians. Work experience has been evaluated directly by the Radiation Protection Manager. To further improve our program and ensure continuity and consistency, selection criteria for senior health physics technicians will be formalized. Specifically, acceptable work experience to meet ANSI N18.1-1971 will be established. We expect to complete the formalization of selection criteria by March, 1991.

Concern 2: The turnover rate in the health physics technician staff was considered "unusually high" for the past several years.

Response 2: A review of the turnover data that was provided to the NRC Inspectors shows that approximately fifty percent of the turnover was a result of transfers or promotions. The position of health physics technician is an entry level position at Pilgrim. It is expected that technician level personnel would choose to diversify their experience through transfers to other functional areas such as chemistry, radwaste or operations and to accept promotional opportunities.

We believe that voluntary transfers and promotions have a positive organizational impact. First, the availability of organizational mobility is generally considered to be a motivator. Secondly, the infusion of health physics knowledge and experience throughout the organization contributes to improved overall radiological awareness and ALARA participation.

The personnel that were hired in the last 2 years to replace the health physics technicians brought a total of approximately 47 man years of commercial nuclear power experience to Pilgrim. Of these new hires, approximately sixty percent had prior health physics technician experience at Pilgrim. Additionally, two of the new hires had prior health physics supervisory experience.

In summary, a review of the data has indicated that the turnover rate has not adversely impacted radiological controls at Pilgrim. However, we will continue to monitor the turnover rate of the health physics technicians so that we will be aware of trends that could potentially result in a degradation of the skills and knowledge of our staff.