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L. M. Hill
Resident Manager

November 10, 1994
IPN-94-143

U.S. Nuclear Regulatory Commission
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SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Reply to Notice of Violation 50-286/94-16

Dear Sir:

Attachment I to this letter provides the Authority's reply to the subject Notice of Violation. The Authority agrees with the Notice of Violation (contained in NRC Region I Inspection Report 50-286/94-16). The new commitments made in this reply are listed in Attachment II.

Very truly yours,

L. M. Hill
Resident Manager
Indian Point 3 Nuclear Power Plant

Attachments

cc: See next page

150060

IE01

cc: Mr. Curtis Cowgill
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Indian Point 3 Nuclear Power Plant

Reply to Notice of Violation (NRC Inspection No. 50-286/94-16)

Violation 94-16 **Control of Personnel Access to High Radiation Areas**

During an NRC inspection conducted on June 27-30, 1994, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C, the violation is listed below.

(A) 10 CFR 20.1601(b) states, in part, that "in place of the controls required by paragraph (a) of this section for a high radiation area, the licensee may substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry."

(B) Technical Specification (TS) 6.12.1 states, in part, that "In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) [now 20.1601(a)(1)] of 10 CFR 20, each high radiation area in which the intensity of radiation is 1000 mrem/hr or less and 100 mrem/hr or greater shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP)." Technical Specification (TS) 6.12.2 states that "The requirements of 6.12.1 above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or the plant Radiological and Environmental Services Manager or his designee."

Contrary to (A) and (B) above, on June 27-30, 1994, three high radiation areas, each with radiation dose rates greater than 1000 millirem per hour (mrem/hr), were not barricaded with locked doors to prevent unauthorized entry. The high radiation areas without proper access controls were established at the waste hold-up tank area, the fuel storage building truck bay, and the primary auxiliary building filter cell. The duration of this condition was indeterminable.

The examples listed above constitute a Severity Level IV violation.

Response to Violation 94-16

The Authority agrees with this violation.

As a clarification, please note that two of the three high radiation areas identified in the notice of violation did not have dose rates greater than 1000 mrem per hour at the time of the inspection. The waste hold-up tank area did exceed that dose rate. The Authority agrees the violation applies because the Fuel Storage Building truck bay and the Primary Auxiliary Building filter cell have had areas with dose rates greater than 1000 mrem/hr.

Reply to Notice of Violation (NRC Inspection No. 50-286/94-16)

The cause of this event is as follows:

Procedures used to control access to Locked High Radiation Areas (LHRA) were inadequate. Health Physics (HP) staff misinterpreted the requirements of 10 CFR 20.1601 and Technical Specification 6.12.2. Workers were provided access into areas beyond the physical LHRA boundary, but were not authorized to enter the area of the room with radiation dose rates greater than 1000 mrem/hr. This area had a rope barricade. The workers were escorted to the work site, instructed to stay out of the area posted as a LHRA, and monitored by Thermoluminescent Device (TLD) and self reading dosimeter. However, once access to the locked room was granted, plant procedures did not require an individual qualified in HP procedures to provide continuous coverage to prevent an unauthorized entry into the area with dose rates greater than 1000 mrem/hr (i.e., LHRA). HP staff believed that controlling the locked entrance to the Tank Room prevented unauthorized entry to the area greater than 1000 mrem/hr.

The Authority considered procedure RE-ACC-5-1, "Radiologically Controlled Area Access Control," adequate to prevent unauthorized access because the procedure provided positive control over workers. RE-ACC-5-1 requires:

1. Periodic Health Physics surveillance of work inside of a posted High Radiation Area (an area with dose rates greater than 100 mrem/hr but less than 1000 mrem/hr).

2. High Radiation Area and/or Locked High Radiation Area postings on the barriers.

3. Explicit denial of access to areas with dose rates greater than 1000 mrem/hr.

10 CFR 20.1601 and Technical Specification 6.12.2 require the prevention of unauthorized access once a worker was allowed access beyond the High Radiation Area boundary. The physical layout of the LHRA barriers and the location of the LHRA doors was not consistent with the concept of "cocooning" (as defined by Regulatory Guide 8.38) small areas of a room required to meet this interpretation. Cocooning was not aggressively pursued as a means of preventing unauthorized access to small areas of a large room with dose rates greater than 1000 mrem/hr and was not considered when establishing controls for the 31 and 32 Waste Hold-Up Tank Room.

After this event, the following corrective actions were performed:

- Radiological and Environmental Services (RES) installed substantial barrier material (i.e., plastic fencing which requires tools to breach) to better isolate areas with radiation dose rates greater than 1000 mrem/hr around 31 and 32 Waste Hold-Up Tanks and to prevent unauthorized access to these areas.

Reply to Notice of Violation (NRC Inspection No. 50-286/94-16)

- RES revised RE-ACC-5-1 and RE-REA-4-1, "Radiation Work Permit," to add the requirement for electronic dosimeters or constant HP coverage for non-Limited Self Monitoring entries into posted LHRAs.

- RES revised Radiation Work Permits to require electronic dosimeters or constant Health Physics coverage for entry into areas with radiation dose rates greater than 1000 mrem/hr.

- RES provided training to Limited Self Monitoring personnel on the use of electronic dosimeters.

- RES revised the Limited Self Monitor training program to include the requirement for electronic dosimeters or constant coverage for entries into areas with radiation dose rates greater than 1000 mrem/hr.

The Authority is taking additional corrective actions to avoid further violations of this type. These corrective actions are presented below.

- RES reviewed the physical layout of the existing areas with radiation dose rates greater than 1000 mrem/hr and identified five areas where additional locking gates or cocooning would be beneficial in order to isolate small areas of a room with radiation dose rates greater than 1000 mrem/hr. An Engineering Request has been submitted to address these five areas and installation of the barriers will be completed by February 28, 1995.

- RES will revise ES-3, "Radiation Protection Program Manual," to ensure that as future changes to the plant layout occur and radiological conditions change, locking gates and cocooning will be evaluated to enhance access control to High Radiation Areas. This will be completed by November 30, 1995.

- RES will revise the High Radiation Area Key Control Program upon completion of the installation of additional locking gates or cocooning to reduce the number of keys in service. This will be completed by March 31, 1995.

The Authority is currently in full compliance with 10 CFR 20.1601 and Technical Specification 6.12 for the control of high radiation areas.

List of Commitments

Number	Commitment	Due
IPN-94-143-01	Radiological and Environmental Services (RES) reviewed the physical layout of the existing areas with radiation dose rates greater than 1000 mrem/hr and identified five areas where additional locking gates or cocooning would be beneficial in order to isolate small areas of a room with radiation dose rates greater than 1000 mrem/hr. An Engineering Request has been submitted to address these five areas and installation of the barriers will be completed by February 28, 1995.	February 28, 1995
IPN-94-143-02	RES will revise ES-3, "Radiation Program Manual," to ensure that as future changes to the plant layout occur and radiological conditions change, locking gates and cocooning will be evaluated to enhance access control to High Radiation Areas.	November 30, 1995
IPN-94-143-03	RES will revise the High Radiation Area Key Control Program upon completion of the installation of additional locking gates or cocooning to reduce the number of keys in service.	March 31, 1995