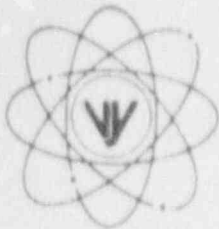


VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

BVY 91-47

REPLY TO:
ENGINEERING OFFICE
580 MAIN STREET
BOLTON, MA 01740
(508) 779-6711

April 25, 1991

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

- References:
- a) License No. DPR-28 (Docket No. 50-271)
 - b) Letter, USNRC to VYNPC, dated 3/26/91; Inspection Report 50-271/91-10
 - c) Letter, USNRC to VYNPC, dated 12/5/90; Inspection Report 50-271/90-13
 - d) Letter, VYNPC to USNRC, BVY 91-001; Response to Inspection Report 90-13, dated 1/4/91
 - e) Letter, VYNPC to USNRC, BVY 91-28 dated 3/13/91; Supplemental Response to Inspection Report 50-271/90-13

Dear Sir:

Subject: Response to Inspection Report 91-10, Notice of Violation

This letter is written in response to Reference b), which indicates that certain of our activities were not conducted in full compliance with NRC requirements. The alleged violations, both classified at Severity Level IV, were identified as a result of an inspection conducted by the NRC during the period February 25 - March 1, 1991. Our response to the violations is provided below.

VIOLATION A

Technical Specification 6.5.B. requires, in part, that "Radiation control standards and procedures shall be prepared, approved and made available to all station personnel. These procedures shall show permissible radiation exposure, and shall be consistent with the requirements of 10 CFR Part 20."

10 CFR Part 20.103 (c) requires, in part, that the concentration of radioactive material in the air that is inhaled when respirators are worn may be estimated by dividing the ambient concentration in the air by the protection factor specified in Appendix A of this part. If the exposure is later found to be greater than estimated, the corrected value shall be used.

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Contrary to the above stated requirements of Technical Specification 6.5.B. procedure OP 0533, "Body Burden Analysis", which provides calculational methods for conformance with 10 CFR 20.103(c), was not consistent with 10 CFR 20.103(c). Specifically, OP 0533 did not require bioassay results to be used to assign intakes when the bioassay estimate exceeded the intake estimate based on air sampling. Additionally, no procedure existed to assure consistent and accurate evaluation of intake following positive bioassay results.

REASON FOR THE VIOLATION

The root cause of this violation was the lack of procedural steps in procedure OP 0533, "Body Burden Analysis". This procedure did not describe the process/methodology used to express body count results which are reported in terms of percent Maximum Permissible Organ Burden (MPOB). These results should have also been expressed in terms of MPC-Hours in order to demonstrate full compliance with 10CFR20.103(c). In addition, there was no formal mechanism for review of internal dosimetry evaluations that were performed since August 1987. Prior to August 1987, the Whole Body Counter (WBC) software was reporting very conservative intake results in terms of MPC-Hours. Since 1987, manual calculations of MPC-Hour intake quantities were performed in lieu of the overly conservative WBC software-derived intake quantities. However, the manual calculational process was not formally proceduralized. The lack of proper procedural control and review of the manual calculation process led to:

- a) inadequate or non-existent documentation of MPC-Hour intake analyses
- b) inadequate review/verification of the methodology and the MPC-Hour intake analyses.

CORRECTIVE ACTIONS

The Body Count Log book was reviewed for all positive body count results dated between August 1987 (the onset of the deficient condition of OP 0533) and the present. Body count results were retrieved from records storage and sent to the Yankee Atomic Environmental Lab (Yael) for evaluation using the computer code INDOS. Results received will be documented to each individual's exposure files via existing procedure AP 0525 ("Dosimetry Records Processing"). Future positive body counts occurring prior to the issue of the revised procedure will also be sent to the YAE Environmental Lab for evaluation using the computer code INDOS.

To ensure that the proper causes and corrective actions are identified and implemented, including those associated with the misunderstanding of NRC Unresolved Item 50-271/90-13-02 [Reference e)], the VYNPC Root Cause/Corrective Action Process (Procedure AP 0007) was initiated as Corrective Action Report 91-28.

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The specific changes to OP 0533 that have already been drafted and are currently in review include:

- 1) Positive bioassay results are expressed in terms of MPC-Hour intake to facilitate comparison with 10CFR20.103(c).
- 2) The calculational process of expressing intakes in terms of MPC-Hours are defined in accordance with current calculational methodology procedures.
- 3) Documentation of calculational processes for evaluating intakes in terms of MPC-Hours are assured.
- 4) The proper review/approval by RP Management is included.

Such procedural revisions will require proper and consistent evaluations of intakes from bioassay data. Further procedure changes may be necessary in order to incorporate the corrective measures necessary to address the root cause identified in Corrective Action Report 91-28.

DATES FOR FULL COMPLIANCE

Evaluations of intake events from August 1987 (the onset of the deficient condition of procedure OP 0533) to the present time will be completed by June 15, 1991. Procedural compliance with the regulatory requirements of 10 CFR 20.103(c) will be achieved with the revision of OP 0533 "Body Burden Analysis", to be issued by May 15, 1991. The Corrective Action Report (CAR 91-28) will also be completed by May 15, 1991 and any additional corrective actions identified will be pursued.

VIOLATION B

10 CFR 20.205(d) requires, in part, that each licensee shall establish and maintain procedures for safe opening of packages in which licensed material is received, and shall assure that such procedures are followed.

Procedure AP 0801, "Receiving and Shipment of Material and Equipment", which provides methodology for conformance with the requirements of 10 CFR 20.205(d), requires, in part, in section A.2.c., that material and equipment are to be identified, logged and handled by stores personnel by verifying the adequacy of the material or equipment (e.g., part number, description, quantity, unit of measure, etc.) against the Purchase Order requirements, bill of lading or other paperwork.

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Contrary to the above, on September 22, 1990 the licensee received a package containing licensed material from the Yankee Nuclear Services Department and did not identify the quantity of licensed material against the shipping paperwork.

REASON FOR THE VIOLATION

The results of our review indicate that this violation occurred due to inadequacies and inconsistencies in procedures AP-0801, "Receiving and Shipment of Material and Equipment", and AP-0504, "Shipping and Receipt of Radioactive Material".

CORRECTIVE ACTIONS

The following immediate corrective actions were implemented as a result of this incident:

1. As discussed in the Inspection Report, the above procedural inadequacies resulted in the loss of a low level radioactive source. Upon discovery of this loss, we performed an exhaustive search for the source at the Vermont Yankee facility and at the Yankee Nuclear Services Division (YNSD) facility. This search did not locate the source. Because of the very low level of radioactivity in the QA source (0.117 uCi), and the short half-life of the Iodine-131 (8 days), no further search for the source was deemed necessary.
2. A Potential Reportable Occurrence Report and Corrective Action Report have been initiated that will address the root cause, including the actions of Stores and RP personnel following the initial receipt of the sources and the problems associated with management followup of the event.

To ensure future compliance, procedures AP-0504 and AP-0801 are being thoroughly reviewed. Appropriate changes will be made to eliminate confusion, multiple responsibility, and ensure compliance with the requirements of 10 CFR 20.205(d).

DATES FOR FULL COMPLIANCE

The procedure changes will be implemented by June 30, 1991. In the interim, the Radiation Protection Department has generated additional administrative guidance regarding the proper methods for receiving radioactive sources. This guidance, which is included as a RP Standing Order, requires

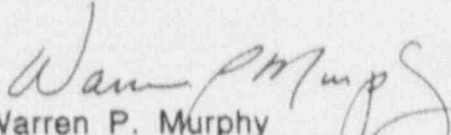
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that whenever radioactive material of any quantity arrives at Receiving, a RP Technician will perform the receipt inspection. The Corrective Action Report 91-29 identifying the root cause and necessary corrective action will also be completed by June 30, 1991.

We trust that the information provided adequately addresses your concerns; however, should you have any questions or desire additional information, please do not hesitate to contact us.

Very truly yours,

Vermont Yankee Nuclear Power Corporation


Warren P. Murphy
Senior Vice President, Operations

/dm
cc: USNRC Regional Administrator, Region I
USNRC Resident Inspector, VYNPS
USNRC Project Manager, VYNPS