DCS

VERMONT YANKEE
NUCLEAR POWER CORPORATION

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FVY 85-105
REPLY TO:
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FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

November 25, 1985

U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Washington, D.C. 20555

Attn: Mr. James M. Taylor, Director

References:
a) License No. DPR-28 (Docket No. 50-271)
b) Letter, USNRC to VYNPC, Notice of Violation and Proposed Imposition of Civil Penalty, dated 10/22/85
c) Letter, USNRC to VYNPC, Inspection Report No. 50-271/85-21, dated 8/20/85

Dear Sir:

Subject: Response to Inspection Report No. 85-21 Notice of Violation

This letter is written in response to Reference b), which indicates that one of our activities was not conducted in full compliance with Nuclear Regulatory Commission requirements. This alleged violation (Level III) was identified as a result of a special NRC inspection conducted by your Dr. W. Pasciak on August 9, 1985. The inspection was performed to review the circumstances associated with a radiological incident in which a Chemistry and Health Physics Technician received an unplanned occupational radiation exposure.

It should be noted that our response was originally due by November 21, 1985. However, given the complexity of the issues associated with the TIP Room incident, we needed additional time to finalize our response. We discussed this need with our Senior Resident Inspector who, in turn, approved an extension until November 27, 1985.

Information is submitted as follows in answer to the alleged violation contained in the Appendix of your letter:

NOTICE OF VIOLATION

"10CFR19.12 requires that all individuals working on or frequenting any portion of a restricted area shall be kept informed of the storage, transfer, or use of radioactive materials or of radiation and shall be instructed in the health protection problems associated with exposure to such radiation and in precautions or procedures to minimize exposure.

IE: 14
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Contrary to the above, on August 8, 1985, a Chemistry HP Technician was given approval by HP supervision to enter a restricted area (the TIP Room area where radiation levels of 1000 R/hr or higher existed) to perform surveys where there was a known potential for unusually high exposure rates, and the technician was not instructed by HP supervision in precautions to take and procedures to follow to minimize exposure. The technician was not instructed as to the location to make an initial exposure rate measurement and a level at which to terminate the survey or provide appropriate alternate instructions.

This is a Severity Level III Violation (Supplement IV) Civil Penalty - $50,000."

RESPONSE

1. Admission or Denial of the Alleged Violation

We acknowledge that additional specific precautionary instructions to the HP Technician prior to initiating the survey would have reduced the potential for an unplanned exposure.

2. Reasons for the Violation

Our internal investigation, which included an extensive debriefing with all individuals involved in the incident, revealed that the incident was caused by a combination of the following:

- The selection by the Chemistry and Health Physics Supervisor of an HP Technician with limited experience to perform the TIP Room survey, even though the Supervisor recognized that there was a potential for high radiation levels inside the room.

- Failure of the HP Technician to recognize the significance of the radiological conditions he encountered during the conduct of the survey.

3/4. Corrective Actions (Immediate and Subsequent)

A. Immediate Actions

- Immediately following the incident, the Shift Supervisor secured the TIP Room from further entry. In subsequent telephone calls with Region I staff, we agreed not to allow further access until a full internal investigation was performed and additional appropriate controls were in place.

- The morning following the incident, the Plant Manager called a meeting of all personnel involved in the incident to review the circumstances surrounding the event and to develop short-term interim corrective actions. Also in attendance were various

plant Department Heads, Manager of Operations staff, and a NRC representative from Region I. As a result of the meeting, the Plant Manager directed that the following actions take place, as detailed in an August 9, 1985 memorandum:

1) A Radiation Work Permit (RWP) shall be required for all TIP Room entries. The RWP for work in the TIP Room shall be signed by the Chemistry and Health Physics Supervisor, the Shift Supervisor and all Department Head(s) who have personnel involved in work under the RWP. The C&HP Supervisor shall assure that the RWP specifies, in detail, the nature of the activities to be performed, the expected dose rates and the action to be taken if specified higher dose rates are encountered. The Shift Supervisor's signature will indicate his approval to do the specified work, will indicate that he has verified that the TIP's have not been used in the core in the last 24 hours, and will indicate that the TIP machines have been tagged to disable any subsequent movement of the TIP's. The other Department Heads' signatures shall indicate that they have assured themselves that their personnel working under the RWP are aware of the potential dose rates that can be encountered in the room, that they understand the limitations to the work they can perform under the RWP, and that they understand the actions to be taken if the specified higher dose rates occur.

   This action, which went into effect immediately, is intended to ensure that cognizant department personnel are fully aware of TIP Room conditions prior to entry. This action is also intended to insure that individuals, whether performing a survey of the TIP Room or working in the room, fully understand the radiological limitations associated with their required work.

2) The involved HP Technician shall be immediately relieved of health physics-related duties until a management determination could be made as to what additional training/experience would be required prior to allowing him to resume health physics duties.

   The HP Technician was subsequently retrained in certain fundamental health physics requirements and recertified by C&HP management as eligible to return to duty on August 30, 1985.

3) A meeting shall be held with the available plant staff in order to carefully review the circumstances surrounding the event and provide understanding of the potential consequences.

This meeting was held on August 9, 1985. Those who were unable to attend the meeting were subsequently informed of the matter.

4) All future entries into the TIP Room will require that a second individual be stationed at the entrance doorway to assist should an emergency situation occur.

This requirement went into effect immediately.

5) The key to the TIP Room entry door will be directly controlled by the C&HP Supervisor or a pre-designated alternate to further assure that no unplanned entries occur.

This requirement went into effect immediately.

6) A detailed reenactment of the incident be performed to carefuly assess the radiological dose received by the individual involved.

This assessment has been performed and considered doses received by the extremities as well as whole body and compared these results with the actual readings of the dosimetry worn by the individuals. The results of the assessment verified that the dosimetry was representative of the actual dose received by the individuals involved, and no Federal personnel exposure limits were exceeded.

7) A Plant Information Report (PIR) shall be generated to thoroughly document and evaluate the event and provide recommended long-term corrective actions as well as reassess the appropriateness of the short-term actions described above.

The PIR was initiated by the C&HP Department on August 10, 1985.

o The C&HP Supervisor met with all C&HP Technicians/Assistants the day arter the incident to 1) review the ramifications of the incident itself; 2) review the operational aspects of the TIP system which could lead to high dose rates in the TIP Room; and 3) discuss the precautions to be taken in the event that extremely high dose rates are encountered in any area of the plant.

B. Subsequent Actions

- As discussed above, the Chemistry and Health Physics (C&HP) Department was assigned the responsibility of drafting a Plant Information Report (PIR) which would document the specifics of the TIP Room incident and include proposals for long-term corrective measures. On August 30, 1985, a C&HP Assistant presented the draft to the Plant Operations Review Committee (PORC) for their review and concurrence. Based on the results of the PORC meeting, which identified additional long-term measures that should be considered, and additional concerns raised independently by the Plant Manager, the C&HP Department was directed to revise the PIR. The final report (PIR 85-02) was subsequently issued on September 17, 1985 and proposed that the following long-term corrective actions be taken:

  1) Evaluate the feasibility of mounting a radiation monitor in the TIP Room with an external meter readout.

  2) Perform a detailed evaluation of the C&HP Training Program to insure that the current Technician Qualification Certification process is appropriate.

  3) Evaluate the need for enhancing the existing TIP Room entry controls.

  4) Evaluate the need for enhancing existing entry controls for other potentially high radiation areas.

  5) Evaluate the need for ongoing supplemental training for all plant personnel relative to the presence of potentially dangerous radiation levels in various areas of the plant and the appropriate response to be taken upon encountering such levels.

  6) Ensure that C&HP management consider the need for selecting personnel with the appropriate level of experience when assigning tasks to be performed in areas of the plant where the potential for dangerously high radiation levels exist.

- Following the issuance of the final PIR, plant management evaluated each of the proposed long-term corrective measures and dispositioned each of them as follows:

  1) The Plant Manager directed that a TIP Room radiation monitor be installed prior to startup from the present refueling outage.

2) The Plant Manager concurred with the need for an evaluation of the C&HP Training Program. This evaluation was completed on November 5, 1985 and included recommendations for program enhancements. These recommendations have subsequently been incorporated into the C&HP Training Program.

3) The Plant Manager directed that a procedure be developed for TIP Room entry. This procedure (AP 0508) was issued and made effective October 4, 1985.

4) The Plant Manager directed that procedural controls for other high radiation areas be assessed. This effort has been completed with the issuance of a revision to plant procedure OP 4530, Dose Rate Radiation Surveys. The procedure now includes a requirement for HP personnel to immediately withdraw from any area when the general area dose rate exceeds three (3) rem per hour and immediately contact C&HP management. The revision to OP 4530 was issued and made effective on September 10, 1985.

5) The Plant Manager has directed that the C&HP Supervisor perform an evaluation to determine the need for supplemental ongoing training of all plant personnel with respect to possibly encountering dangerous levels of radiation. This evaluation and a schedule for any required additional training will be finalized by December 31, 1985.

6) The Plant Manager has determined that C&HP management is now taking the necessary actions to assure that consideration for experience is given prior to the assignment of health physics-related duties.

- In addition to addressing the specific PIR long-term recommendations, the Plant Manager directed the Instrument and Control Department to ensure that when the TIP's are withdrawn from the core that they are stopped at the optimum location within the existing radiation shield provided for the TIP's. This review and any necessary adjustments will be completed prior to startup from the present refueling outage.

- At the time of the issuance of the PIR, we had also improved the lighting in the TIP Room to facilitate the conduct of surveys or performance of other work in the room. The lighting enhancements are intended to further minimize staytime in the room.

5. Overall Assessment of the Generic Implications of the Incident

Following the Plant Manager's disposition of the PIR recommendations for long-term corrective measures, plant management performed an independent assessment of possible generic implications of the TIP Room incident. Apart from the corrective measures previously identified, the Plant Manager determined that additional measures should be taken, including:

- o An assessment will be performed of the C&HP Department's procedures, policies and other administrative controls for radiological safety. The purpose of the assessment is to insure that the specificity of these administrative controls are appropriate given the experience level of the current and projected C&HP staff.

  Our current schedule calls for completing the independent assessment within six (6) months following startup from the present refueling outage. A schedule for any corrective actions deemed necessary as a result of the assessment will be determined at that time. In the interim, we will keep our Senior Resident Inspector informed of the status of the assessment.

- o Consistent with current plant practice, a follow-up appraisal of the short-term and long-term corrective actions will be performed. The purpose of this appraisal is to insure that the corrective actions have been effectively implemented and to determine if other steps are necessary to further minimize the likelihood of an unplanned exposure incident.

  The appraisal will be performed prior to restart from the present refueling outage. We will keep our NRC Senior Resident Inspector fully informed relative to the status of this effort.

- o Ensure that the details of radiological safety incidents at Vermont Yankee (or other facilities) which have the potential for jeopardizing personnel safety are discussed and reviewed as part of periodic Chemistry and Health Physics Department meetings. As appropriate, information regarding these events will be provided to other plant staff members.

6. Compliance Dates

Full compliance was achieved with the implementation of the immediate corrective actions. The schedules for implementation of the long-term measures, which are intended to further minimize the potential for an occurrence of a similar event, are detailed in the above response.

In summary, we believe that the short-term and long-term corrective measures, coupled with our commitment to perform an appraisal of the adequacy of the administrative controls for the radiological safety program, represents a comprehensive response to the TIP Room incident and clearly addresses all probable contributors to the event.

We trust that the information provided above is acceptable; however, should you have any questions or desire additional information, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Warren P. Murphy
Vice President and
Manager of Operations

cc: Dr. Thomas E. Murley
USNRC, Region I
631 Park Avenue
King of Prussia, PA 19604

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Warren P. Murphy, who, being duly sworn, did state that he is Vice President and Manager of Operations of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Vermont Yankee Nuclear Power Corporation and that the statements therein are true to the best of his knowledge and belief.

Diane M. McCue Notary Public
My Commission Expires February 10, 1987

DIANE M. McCUE
NOTARY
PUBLIC
WINDHAM COUNTY, VERMONT