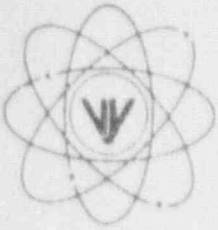


# VERMONT YANKEE NUCLEAR POWER CORPORATION



Ferry Road, Brattleboro, VT 05301-7002

BVY 92-011

REPLY TO  
ENGINEERING OFFICE

580 MAIN STREET  
BOLTON, MA 01740  
(508) 779-6711

February 6, 1992

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

References: a) License No. DPR-28 (Docket No. 50-271)  
b) Letter, USNRC to VYNPC, dated January 10, 1992; Notice of Violation (Inspection Reports 91-13, 91-21)

Dear Sir:

**Subject: Reply to 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 subject violation involves weaknesses relative to the implementation of 10CFR50.59 which were identified in Inspection Reports 91-13 and 91-21 and the subject of an enforcement conference on December 16, 1991. Our response to the violation is presented below.

## Item A

"Section 10.6.5 of the Vermont Yankee Final Safety Analysis Report (FSAR) states that the service water discharge from the systems and equipment is piped to the circulating water discharge where it is released to the river.

Contrary to the above, in 1987, a change was made to the facility as described in the FSAR in that the discharge flow of the service water system was diverted from the circulating water discharge structure to the cooling tower deep basin, without a safety evaluation to ensure that the valve realignment did not constitute an unreviewed safety question."

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### Response A

Valve lineup and procedural changes established in 1987 were made to address a problem with insufficient flow through the service water radiation monitor located in the Turbine Building. During certain modes of operation, (ie; Circ Water out-of-service and valve lineup differences between summer/winter), there was insufficient flow through the monitor. The changes were made to minimize the number of adjustments that had to be made to the SW valve lineup during the year to support continued radiation monitor operation.

Although no documentation could be located, discussion with the individual involved in the procedure revision indicated that the FSAR was reviewed and it was concluded that the FSAR words, as he interpreted them, allowed the procedure revision. In fact, the FSAR allows this valve lineup only during the winter months. The cause for the apparent violation is therefore concluded to be attributable to:

- Failure to correctly apply the 10CFR50.59 process regarding "changes to the facility as described in the FSAR", and;
- A less than adequate procedure review process

### Corrective Actions Taken:

As immediate corrective actions, a return to the pre-1987 valve lineup (circulating water discharge block, as described in the FSAR) was instituted before the plant was restarted following the April 23, 1991, loss-of-power event. Subsequently, an engineering evaluation and supporting safety analysis were performed to support operation in the winter (de-icing) mode of operation and appropriate controls were effected to ensure the assumptions used in the analysis were followed.

VY became aware of an inherent weakness in the procedure review process in late 1987. There were instances where procedures had gone substantially through the review process, including the Plant Operations Review Committee (PORC), with technical inadequacies. As a result, on December 11, 1987, a formal management directive was issued which resulted in the following additional requirements:

- A written document was required to provide the basis for each non-editorial procedure change

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- Annual 10CFR50.59 training was required for all PORC members and alternates
- The PORC chairman is to promote 10CFR50.59 discussion to ensure all aspects are considered during PORC evaluation of procedures
- All new procedures required offsite, independent review and approval.

In addition, substantial improvements have been made since 1987 in the way we administratively control Temporary Modifications (TM), valve lineup changes/deviations, and the quality and content of 50.59 training. A new procedure has been developed to provide instructions for preparing 10CFR50.59 evaluations and 10CFR50.59 screening criteria have been integrated into a number of our design procedures. The instructions refer the individuals to seek assistance from our engineering staff if there is any doubt or indecision about the need for a safety evaluation. To assist in the identification and recovery of design basis information, a computerized data base has been developed. Although not completed, its usefulness has been demonstrated and independently confirmed.

A review of a random sample of procedure changes, temporary modifications and valve lineup changes that were processed during the last few years was conducted to verify the acceptability of the review process. No instances were identified where the conclusions were incorrect; however, inconsistencies were noted. As a result of the recent 10CFR50.59 identified issues, it is our intent to conduct additional training for PORC members and individuals involved in the safety evaluation preparation/review process. This training will focus on the preparation aspects of 10CFR50.59 and will use case studies to allow individuals performing 10CFR50.59 evaluations to better understand the far reaching implications of "change to the facility" and worst case scenarios. We will also be enhancing the procedure revision/preparation process with regard to conducting 10CFR50.59 evaluations.

We believe that a contributing factor in many of our 10CFR50.59 problems is due to ambiguity within our FSAR. As a result, a multi-year effort has been started to revise and improve the FSAR.

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Summary of Item A Corrective Actions:

<u>Corrective Action</u>	<u>Status</u>
Return to pre-1987 Valve Lineup.	Complete
Engineering and 50.59 evaluations to support operation in the "de-icing" mode.	Complete
Procedure changes made to address written basis for change, annual 50.59 training for PORC members, more active 50.59 discussion at PORC, independent review and approval of all new procedures.	Complete
Improvements in the way we administratively control temporary modifications, and valve lineup changes/deviations.	Complete
Development of 50.59 Procedure and incorporation of 50.59 screening criteria into our temporary modification, one-for-one and valve lineup deviation procedures.	Complete
Review of a random sample of procedure changes, temporary modifications and valve lineup changes.	Complete
10CFR50.59 training.	Under development; Complete by 8/1/92
Computerized design basis development.	Ongoing
FSAR Review	Ongoing
Procedure revision/preparation process enhancement (10CFR50.59 screening)	In progress; Complete by 7/1/92

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Item B

"Section 8.3.4 of the Vermont Yankee Final Safety Analysis Report (FSAR) states that each of the 345 kV lines is protected against temporary or permanent fault by two complete, separate, protective relay systems. Separate dc control circuits and dc power sources are provided for each relay scheme and tripping signals are sent to separate trip coils to trip the required power circuit breakers.

Contrary to the above, on April 23, 1991, a change was made to the facility as described in the FSAR in that revised guidelines (instruction) were implemented to replace switchyard battery 4A, without a safety evaluation to ensure that separation of a dc bus from a battery (and resultant dampening effects of the systems battery) did not constitute an unreviewed safety question."

Response B

To support switchyard battery replacement activities a Temporary Modification (TM) was generated to allow removal of the interlock that prevented the output breakers from the 4A-5A charger from being closed at the same time. The removal of the interlock and closure of both breakers allowed both dc buses to be supplied by one battery while the other was being replaced. A safety evaluation was prepared because of the identified change to the FSAR. That evaluation recognized the apparent need to maintain a battery on the bus to smooth out the charger output, even though the vendor manual indicated that the chargers could be used independent of the batteries. At this point the old battery was removed from service and the new battery installed, but not connected to the bus.

Subsequent to the battery replacement, questions were raised about the prudence of leaving two dc buses tied together when reconnecting the new battery to the bus, and the potential for voltage transients if this were done. It was concluded that the guideline used by maintenance personnel to perform this work should be revised such that during the restoration activity, the two busses would be separated.

The revision to the guideline, although evaluated by Maintenance Department engineers, did not receive an adequate formal safety evaluation. On April 23, 1991, just prior to returning the 4A battery to service, the 4A-5A battery charger was disconnected from bus 5A. This activity resulted in a voltage spike which tripped and/or damaged the breaker failure initiation logic and resulted in the loss of offsite

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power and subsequent plant scram. Our evaluation of the event concluded that the root cause was an inadequate review of the guideline revision in that it failed to properly recognize and address conditions previously established and it failed to correctly apply the 10CFR50.59 process.

Corrective Actions Taken:

A number of corrective actions dealing with "guidelines" resulted. The revised guideline was immediately canceled and routed for information to all appropriate personnel. The initial guideline was reviewed prior to being used for future switchyard activities. All other plant guidelines and procedures involving battery switching operations were reviewed and appropriate changes were made to recognize the benefits of battery dampening. In addition, the generic issues regarding use of guidelines (vs procedures) and methods used for controlling and updating guidelines have been reviewed. As a result of this review, Maintenance Department guidelines will be canceled and converted to procedures as described in our procedure control process (AP 0831). Training will also be provided to appropriate personnel on the need to verify and maintain plant conditions, design assumptions and configuration that provides the basis for a planned activity.

Summary of Item B Corrective Actions:

<u>Corrective Action</u>	<u>Status</u>
Revised guideline canceled and routed for information to all appropriate personnel.	Complete
The initial guideline was reviewed prior to being used for future switchyard activities.	Complete
All other plant guidelines and procedures involving battery switching operations were reviewed and appropriate changes made to recognize the benefits of battery dampening.	Complete

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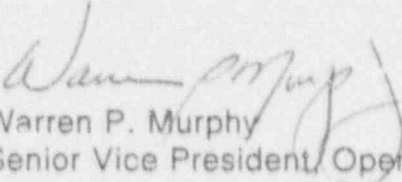
Generic issue regarding use of guidelines (vs procedures) reviewed.	Complete
Maintenance Department guidelines canceled and converted to procedures.	In progress; Complete by 4/15/92
Training will be provided to appropriate personnel on the need to verify and maintain plant conditions, design assumptions and basis configuration.	Complete by 8/1/92

We believe that prompt and comprehensive actions have been taken since 1987 to minimize the potential for 10CFR50.59 problems. We also recognize the appropriateness of continued assessment and improvement in the process.

We trust you will find the information presented above responsive to your request; however, should you have any further comments or questions, please do not hesitate to contact us.

Very truly yours,

Vermont Yankee Nuclear Power Corporation

  
Warren P. Murphy  
Senior Vice President, Operations

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