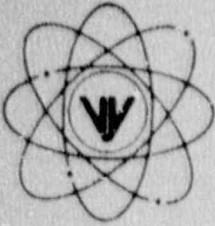


VERMONT YANKEE NUCLEAR POWER CORPORATION

Proposed Change No. 153

BVY 89-106



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REPLY TO:
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November 9, 1989

United States Nuclear Regulatory Commission
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Washington, DC 20555

Reference: (a) License No. DPR-28 (Docket No. 50-271)
(b) Letter, FVY 86-78, VYNPC to USNRC, "Changes to Technical Specification for the 1986/1987 Operating Cycle Inspection/Repair of the RHR Pump Impeller Wear Rings - Proposed Change No. 135," dated August 28, 1986
(c) Letter, FVY 86-102, VYNPC to USNRC, "Response to Request for Information - Vermont Yankee Proposed Change No. 135," dated November 3, 1986
(d) Letter, NVY 86-237, USNRC to VYNPC, "Transmittal of Amendment No. 97 - Approval of Proposed Change No. 135," dated December 4, 1986

Subject: Emergency Technical Specification Change Request for the 1989/1990 Operating Cycle Refurbishment/Repair of the Uninterruptible Power Supply System

Dear Sir:

Pursuant to Section 50.90 of the Commissions' Rules and Regulations, Vermont Yankee Nuclear Power Corporation hereby proposes the following emergency change to Appendix A of the Operating License.

This emergency change involves replacing Page 87 of the Vermont Yankee Technical Specifications with the revised Page 87 provided in Attachment 1. This page proposes an addition to Section 3.5.A.4 for Limiting Conditions of Operations (LCO) and surveillance requirements to address the Uninterruptible Power Supply (UPS) refurbishment/repair work being conducted during the 1989/1990 operating cycle. The UPS 1A unit was declared inoperable at 2130 on November 5, 1989. The current 7 day LCO time period expires on November 12, 1989. Efforts are currently underway on a 24 hour basis to restore UPS 1A to full operability status.

Circumstances and Basis for Prompt Action Request

The 480 V UPS at Vermont Yankee provides power to Emergency Core Cooling System (ECCS) valves in the Residual Heat Removal and Recirculation System. As presently configured (Attachments 2 and 3), for a Loss-of-Coolant Accident (LOCA), both UPSs automatically isolate from the emergency buses (input ac breaker opens), and continue to supply power to the ECCS valves from the UPS batteries, completely independent of the Diesel Generator (DG).

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This UPS source was added when the "swing bus" design was removed at Vermont Yankee in 1976. The UPS provides an independent power source to the LPCI injection valves which is required for a single Design Basis Accident event. This event is a double-ended recirculation discharge break in one loop, with the single failure of the diesel supplying the LPCI train in the unbroken loop, in conjunction with a loss of normal power. The UPS source ensures that power to the LPCI injection valves is available for both trains, despite the failure of a diesel.

Existing Technical Specification 3.10.B.4 requires that from and after the date that one UPS or its associated MCC are made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days, based on the availability of the remaining ECCS System. Because obtaining new parts and refurbishment/repair of circuit boards and other miscellaneous parts has become increasingly difficult, completion of a repair in the available seven-day LCO time is not probable.

Therefore, an emergency extension of twenty three days (thirty days total) beyond the current LCO period of seven days is being requested.

An evaluation for a long-term solution of the UPS reliability concerns, including specifications for a new UPS System, is in the process of being completed by Vermont Yankee. However, it is felt that the incorporation of interim conditions for RHR/LPCI operability is justified based on the following:

1. The existing UPS System will be replaced and an alternative system will be made operable prior to start-up from the 1990 Refueling Outage.
2. Vermont Yankee's Off-Site Power System and onsite emergency power systems are highly reliable, especially when consideration is given to a dedicated 4,160 V line from Vernon Hydroelectric Station that can be connected to either of the two emergency buses from the Main Control Room within seconds. When the UPS source is unavailable, its associated MCC is connected to its alternate source. This source is capable of being powered from the onsite emergency power system, the Vernon Hydroelectric Station, the offsite power system through one of two startup transformers or through the main transformers.

3. Vermont Yankee receipt of Amendment 97 (Reference (d)) from the Commission, which allowed a change to the Technical Specifications, for the purpose of inspection/repair of impeller wear rings during the 1986/1987 operating cycle. The basis for this approved extension was the availability of an additional off-site power source.
4. Vermont Yankee's review of licensing Design Basis Accident (DBA) scenarios identified one scenario not bounded by the availability of the Core Spray System when a UPS train is lost. This scenario, a double-ended recirculation discharge break in one loop, with the single failure of the DG which supplies the LPCI train unaffected by the break, in conjunction with a loss of normal power, is highly unlikely. Additionally, a recently completed LOCA analysis, using the Vermont Yankee LOCA analysis method, demonstrated that given the most limiting DBA and single failure, the Peak Clad Temperature (PCT) limit of 10CFR50.46 is not exceeded even with no credit taken for either UPS train.
5. Probabilistic analyses of the LPCI, UPS and AC power systems have been performed in preparation for the IPE effort. These analyses show that the unavailability of the LPCI system to accomplish its safety function is dominated by mechanical failure of motor driven pumps and motor operated valves, and not by unavailability of their power sources. In addition, when considered in a probabilistic analysis, the normal and emergency sources of AC power have a greater availability than the UPS. This is true even without credit for the availability of the Vernon Tie.

The conclusion drawn from these preliminary studies is that operation under the proposed maintenance tie configuration will have an insignificant effect on the availability of the LPCI System. In fact, given the high reliability of normal and emergency AC power sources at Vermont Yankee; LPCI availability may be improved slightly by operation under the proposed configuration.

Notification of State

Vermont Yankee has notified the State of Vermont today on the content of this proposed change. We will keep them informed on the status of the UPS through normal daily status reports. Vermont Yankee has sent a copy of this request to the State of Vermont.

Safety Considerations

If a UPS train is made or found inoperable, the LPCI subsystem bus is transferred to its alternate source. As seen in Attachment 2, this highly reliable source of power is connected to a 4kV emergency bus which is normally powered by the main generator, but can be powered through the start-up transformers, an Emergency Class 1E DG, or the Vernon Hydroelectric Station or through the delayed access source of the main transformer.

Vermont Yankee considers that this extension of the UPS out of service time by twenty three days will not significantly affect LPCI availability based on the high reliability and availability of off-site power. As stated in Vermont Yankee Technical Specification Section 3.10 (Page 178), "The 4,160 V line from the Vernon Hydroelectric Station can be connected to either of the two emergency buses within seconds by simple manual switching operation in the Main Control Room." This switching operation is covered by current plant procedures and operator training for a loss of normal power and failure of a DG. The hydrostation is continually "on-line", supplying power to its transmission station; therefore, the tie-line is continuously energized, and since 1965, the station has had only two unplanned outages (total of less than three hours). The other methods to gain offsite power are also covered by plant procedures.

Vermont Yankee's review of licensing DBA scenarios involving a single failure, loss of off-site power, and loss of UPS resulted in the conclusion that with one exception, all scenarios are bounded due to the availability of the Core Spray System. The one exception is a double-ended recirculation discharge break in one loop, with a single failure of the DG which supplies the LPCI train unaffected by the line break. For this highly unlikely scenario, both LPCI trains and one core spray train would be unavailable. However, ADS, HPCI, and one core spray pump are available to mitigate the break.

Vermont Yankee has recently completed a LOCA analysis, using the Vermont Yankee LOCA Analysis Method, which demonstrates that one core spray pump is sufficient to keep the PCT well below the 10CFR50.46 limit of 2,200°F for the limiting DBA event. Although this analysis method has not been formally approved by the Commission, it meets all applicable regulatory requirements, and will be submitted for future NRC review and approval. It is presently available for NRC review at Vermont Yankee.

Significant Hazards Consideration

The standards used to arrive at a determination that a request for amendment requires no significant hazards consideration are included in the Commission regulation, 10CFR50.92, which states that operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from an accident previously evaluated; or (3) involve a significant reduction in a margin of safety. The discussion below addresses each of these three criteria and demonstrates that the proposed amendment involves no significant hazard considerations.

The Vermont Yankee FSAR addresses the consequences and mitigation of any postulated accidents in conjunction with a single failure and loss of off-site power. As noted above, the single failure of the DG and loss of a UPS train is not currently bounded by the analysis of record. However, Vermont Yankee considers the loss of a UPS train to be addressed by the availability of an additional off-site power immediately available and accessible from the Control Room. Further, Vermont Yankee believes that the new LOCA analysis completed using the Vermont Yankee Analysis Method, which demonstrates that one core spray pump is sufficient to keep the PCT well below the 10CFR50.46 limit of 2,200°F, indicates that this proposed change does not significantly increase the probability or consequences of a previously evaluated accident.

This proposed change does not change the function of the LPCI System, only the LCO out of service time for the UPS power source to be used during the 1989/1990 operating cycle, and therefore, does not create the possibility of a new or different kind of accident from any accident previously evaluated.

As noted above, recent analyses demonstrate that one core spray pump is sufficient to keep the PCT well below the 10CFR50.46 limit of 2,200°F. The pumps and other active components of the system have been tested in accordance with Technical Specification Section 4.5.A.4 requirements. Therefore, this proposed change presents no reduction in margin of safety.

Therefore, we conclude that these proposed changes do not constitute a significant hazards consideration, as defined in 10CFR50.92.

Interim Compensatory Measures

As noted above, testing based on Technical Specification Section 4.5.A.4 requirements has been completed. Existing shift turnover procedures will ensure operator awareness that the UPS is connected to the alternate source. Additionally, plant procedures and operator training identifies the Vernon Tie as the priority replacement for a failed diesel during a loss of normal power. No additional measures are deemed warranted.

Environmental Considerations

This amendment request involves changes in the use of a facility component within the restricted area as defined in 10CFR, Part 20. It does not request authorization of a change in effluent types or total amounts, nor an increase in power level. As discussed previously, the amendment request involves no significant hazards considerations. Therefore, the change will involve no significant increase in the amounts, and no significant change in the types of any effluents that may be released off-site, and there will be no significant increase in individual or cumulative occupational radiation exposure. Accordingly, we have determined that this amendment request meets the eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment will need to be prepared in connection with the issuance of this amendment request.

Schedule

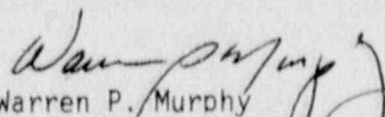
Vermont Yankee requests approval of the requested immediate change to License No. DPR-28 to allow operation with the UPS System on an alternate source until Vermont Yankee starts up from the next scheduled refueling outage. The UPS System will be replaced with a new system during the scheduled 1990 outage and will be fully operable prior to restart.

The emergency change request described above will be incorporated into the Vermont Yankee Technical Specifications immediately upon receipt of your approval.

We trust that the information provided is sufficient for your review and expedited issuance of a license amendment; however, should you have any questions on this matter, please contact us

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION


Warren P. Murphy
Vice President and
Manager of Operations

/dm

cc: USNRC Document Control Desk (40 Copies)
USNRC Regional Administrator, Region I
USNRC Resident Inspector, VYNPS

