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Robert J. Wanczyk
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BVY 13-053

July 24, 2013

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

SUBJECT: Revision of Technical Specifications Bases Pages
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

Dear Sir or Madam:

This letter provides revised Vermont Yankee Technical Specification (TS) Bases pages. The Vermont Yankee TS Bases were revised to allow use of an optional banked position withdrawal sequence (BPWS) control rod sequence during reactor shutdown in accordance with NEDO-33091-A, Revision 2, "Improved BPWS Control Rod Insertion Process," dated July 2004.

These changes, processed in accordance with our Technical Specification Bases Control Program (TS 6.7.E), were determined not to require prior NRC approval. The revised Bases pages are provided for your information and for updating and inclusion with your copy of Vermont Yankee Technical Specifications. No NRC action is required in conjunction with this submittal.

There are no new regulatory commitments being made in this submittal.

Should you have any questions concerning this submittal, please contact me at 802-451-3166.

Sincerely,

Robert J. Wanczyk

RJW/plc

A001
NRR

Attachment: 1. Revised Technical Specifications Bases Pages

cc: Mr. William M. Dean
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Attachment 1

Vermont Yankee Nuclear Power Station

Revised Technical Specifications Bases Pages

BASES: 3.3 & 4.3 (Cont'd)

2. The control rod housing support restricts the outward movement of a control rod to less than 3 inches in the extremely remote event of a housing failure. The amount of reactivity which could be added by this small amount of rod withdrawal, which is less than a normal single withdrawal increment, will not contribute to any damage of the primary coolant system. The design basis is given in Subsection 3.5.2 of the FSAR, and the design evaluation is given in Subsection 3.5.4. This support is not required if the reactor coolant system is at atmospheric pressure since there would then be no driving force to rapidly eject a drive housing.

3. In the course of performing normal startup and shutdown procedures, a pre-specified sequence for the withdrawal or insertion of control rods is followed (Ref. 1). Control rod dropout accidents which might lead to significant core damage, cannot occur if this sequence of rod withdrawals or insertions is followed. The Rod Worth Minimizer (RWM) restricts withdrawals and insertions to those listed in the pre-specified sequence and provides an additional check that the reactor operator is following prescribed sequence. With the RWM inoperable during a reactor startup or shutdown, the operator is still capable of enforcing the prescribed control rod sequence. However, the defense in depth is reduced since a single operator error can result in violating the control rod sequence. Therefore, control rod movement must be immediately suspended except by scram. Alternatively, startup may continue if at least 12 control rods have already been withdrawn or a reactor startup with an inoperable RWM was not performed in the last calendar year. Once these conditions have been verified by either control room indication or control room logs, the RWM function can be performed manually following a second check of compliance with the prescribed rod sequence by a second licensed operator or other qualified member of the technical staff. The RWM may be bypassed under these conditions to allow continued operation or shutdown. Continuing the startup increases core power, reduces the rod worth and reduces the consequences of dropping any rod. Withdrawal of rods for testing is permitted with the RWM inoperable, if the reactor is subcritical and all other rods are fully inserted. Above 17% power, the RWM is not needed since even with a single error an operator cannot withdraw a rod with sufficient worth, which if dropped, would result in anything but minor consequences.

When performing a shutdown of the plant, an optional banked position withdrawal sequence (BPWS) control rod sequence (Ref. 2) may be used when reactor power is below the low power set point (17%) provided that all withdrawn control rods have been confirmed to be coupled. The rods may be inserted without the need to stop at intermediate positions since the possibility of a control rod drop is eliminated by the confirmation that withdrawn control rods are coupled. When using the Reference 2 control rod sequence for shutdown, the rod worth minimizer may be reprogrammed to enforce the requirements of the improved BPWS control rod insertion, or may be bypassed and the improved BPWS shutdown sequence implemented under LCO 3.3.B.3(b).

In order to use the Reference 2 BPWS shutdown process, an extra check is required in order to consider a control rod to be confirmed to be coupled. This extra check ensures that no single operator error can result in an incorrect coupling check. For purposes of this shutdown process, the method for confirming that control rods are coupled varies depending on the position of the control rod in the core. Details on this coupling confirmation requirement are provided in Reference 2. If the requirements for use of the BPWS control rod insertion process contained in Reference 2 are followed, the plant is considered to be in compliance with BPWS requirements, as required by LCO 3.3.B.4.

BASES: 3.3 & 4.3 (Cont'd)

4. Refer to the "General Electric Standard Application for Reactor Fuel (GESTAR II)," NEDE-24011-P-A, (the latest NRC-approved version will be listed in the COLR).

5. The Source Range Monitor (SRM) system provides a scram function in noncoincident configuration. It does provide the operator with a visual indication of neutron level. The consequences of reactivity accidents are a function of the initial neutron flux. The requirement of at least three counts per second assures that any transient, should it occur, begins at or above the initial value of 10^{-8} of rated power used in the analyses of transients from cold conditions. One operable SRM channel is adequate to monitor the approach to criticality, therefore, two operable SRM's are specified for added conservatism.

6. The action statement for TS 3.3.B.6 requires that the plant be placed in HOT SHUTDOWN within 12 hours if the required actions of TS 3.3.B.1 through 3.3.B.5 are not satisfied. This ensures that all insertable control rods are inserted and places the reactor in a condition that does not require the active function (i.e., scram) of the control rods. The allowed completion time of 12 hours is reasonable, based upon operating experience to reach HOT SHUTDOWN from full power in an orderly manner and without challenging plant systems.

REFERENCES

1. NEDO-21231, "Banked Position Withdrawal Sequence," January 1977.

2. NEDO-33091-A, Revision 2, "Improved BPWS Control Rod Insertion Process," July 2004.