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Robert Pulsifer

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August 8, 2003

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RE: Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 262
Alternate Source Term - State of Vermont Questions

Robert Pulsifer, Project Manager
U.S. Nuclear Regulatory Commission
Washington, D.C., 20555

Dear Mr. ^{BEB}Pulsifer,

We have received a copy of Entergy Nuclear Vermont Yankee's (Entergy's) request of July 31, 2003, to modify Vermont Yankee Nuclear Power Station's design bases by 1) by incorporating the Alternate Source Term described in Regulatory Guide 1.183, and 2) by doubling the allowable leakage for its main steam isolation valves (MSIVs) in conjunction with an alternate leakage treatment pathway. Accompanying Entergy's request are a Determination of No Significant Hazards Consideration (Attachment 2) and a Safety Assessment (Attachment 5). These design bases changes are part of Entergy's overall plan to implement a 20% extended power uprate at Vermont Yankee.

We have conducted a preliminary review of the July 31, 2003, request, and have the following questions:

1. In the No Significant Hazards Determination, we do not understand Entergy's conclusion for 10 C.F.R. §50.92(c)(1) regarding the change to double the allowable MSIV leakage. The applicable requirement is that the proposed change does not:

"Involve a significant increase in the . . . consequences of an accident previously evaluated."

Vermont Yankee has met the present MSIV leakage design basis for the past 30 years, so this appears to be a voluntary change. Since the change will allow double the current MSIV leakages at the onset of a postulated accident, it appears this change will "increase the consequences of an accident previously evaluated."

Therefore, the question for 10 C.F.R. §50.92(c)(1) becomes, "Is the increase in consequences significant?" In this regard we have these two questions:

- a. Does the agency have criteria or guidance for how to interpret the word *significant* in 10 C.F.R. §50.92(c)(1)?
 - b. How can we know whether the proposed MSIV leakage change is significant when we haven't been presented with a comparable before and after design basis accident calculation for comparison?
2. We also have questions related to the alternate leakage treatment pathway Entergy proposes to employ with the increased allowable MSIV leakage. In the safety assessment, at 9, Entergy describes:

The analysis assumes: the main steam lines and the main condenser are seismically rugged, and will remain intact during and after a design basis Maximum Hypothetical Earthquake (MHE), and that the MSIV leakage eventually collects in the main condenser (except for a small portion that is assumed to bypass the main condenser).

The alternate leakage treatment pathway is further described in Appendix A to the Safety Assessment (pp. 53-57).

- a. We believe that the definition of Engineered Safety Feature (ESF) is: a feature provided to mitigate the consequences of design basis or loss-of-coolant accidents (see SRP 6.1.1). Since Entergy is claiming credit for the alternate leakage treatment pathway to mitigate the radiological consequences of design basis accidents, it appears the alternate leakage treatment pathway meets the definition of an ESF. Is that a correct interpretation?
- b. While it is clear that the alternate leakage treatment pathway was not designated as an ESF in the original design basis, is it appropriate to employ section C.5.1.4 of Regulatory Guide 1.183 in the review of the alternate leakage treatment pathway?
- c. Standard Review Plan (NUREG-0800) 6.7, July 1981, Rev. 2, is titled, *Main Steam Isolation Valve Leakage Control System (BWR)*. Is this the latest revision of SRP 6.7?
- d. It appears that SRP 6.7 should be applicable to the review of the proposed alternate leakage treatment pathway. Is that a correct interpretation?
- e. Entergy claims credit for the seismic adequacy of the alternate leakage treatment pathway in the Safety Assessment. According to SRP 6.7, the acceptance criteria for seismic adequacy is based on meeting position C.1 of Regulatory Guide 1.29. Is this a correct interpretation, and if so, does the alternate leakage

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treatment pathway proposed by Entergy meet the requirements of position C.1 of Regulatory Guide 1.29?

- f. Position C.1 of Regulatory Guide 1.29 states, in part, "The pertinent quality assurance requirements of Appendix B to 10 C.F.R. Part 50 should be applied to activities affecting the safety-related functions." Is it a correct interpretation that the alternate leakage treatment pathway must meet the requirements of Appendix B to 10 C.F.R. Part 50, and if so, is this requirement met?
3. The final questions pertain to crediting the SLC system to maintain suppression pool pH:
- a. Regulatory Guide 1.183, section C.5.1.2 states, in part: "The single active component failure that results in the most limiting radiological consequences should be assumed." Does this section apply to Entergy proposed crediting of the SLC system to maintain suppression pool pH?
 - b. Is it correct that the single failure referred to above is interpreted as a non-mechanistic failure of "[t]he single active component failure that results in the most limiting radiological consequences?"
 - c. In the Safety Assessment, at pp. 3-4, Entergy identifies a single failure of the control room keylocked-switch and associated logic which could defeat the function of the SLC system. It proceeds to dismiss this single failure based on low failure rates. Is dismissal of a single failure based on low failure rates an acceptable method of meeting the single failure criteria identified by Regulatory Guide 1.183, section C.5.1.2, and if so, what is the agency's basis for accepting this methodology?

We appreciate your consideration of these items and your assistance in helping us understand the aspects of Vermont Yankee's proposed power uprate. If you have questions about these items, please call me at 802-828-3349.

Sincerely,



William K. Sherman
Vermont State Nuclear Engineer

cc: David O'Brien - Commissioner
Ledyard Marsh - NRC
David McElwee - Entergy Nuclear Vermont Yankee