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Notice of Opportunity for Public Comment on Proposed Model Safety Evaluation, No Significant Hazards Consideration Determination, and Application for Plant-Specific Adoption of TSTF Traveler 513, Revision 2

Comment On: NRC-2009-0444-0001

Notice of Opportunity for Public Comment on the Proposed Model Safety Evaluation for Plant-Specific Adoption of Technical Specification Task Force Traveler-513, Revision 2, "Revise PWR Operability Requirements and Actions for RCS Leakage Instrumentation"

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General Comment

Docket ID NRC-2009-0444: Public Comment of TFT-513

Response to the request for public comment on proposed Model Safety Evaluation for Plant-Specific Adoption of Technical Specification Task Force Traveler (TFT) 513, Revision 2, "Revise PWR Operability Requirements and Actions for RCS Leakage Instrumentation."

NRC approval of the proposed changes to Standard Technical Specification (STS) Bases 3.4.15, "Reactor Coolant System (RCS)," is not only contrary to reactor safety but would also set a dangerous precedent by allowing reactor license holders to credit non-functional equipment as OPERABLE for the purposes of Technical Specification compliance.

Contrary to Reactor Safety:

The proposed TFT included changes to the TS Bases to "more accurately reflect the contents of the facility design basis related to operability of the RCS leakage detection instrumentation (ADAMS ML091810158)." For most Westinghouse plants, RCS leakage is determined every 72 hours by a water inventory balance in accordance with STS 3.4.13, "RCS Operational Leakage." STS 3.4.15 requires RCS leakage detection systems to alert plant operations personnel to an increase in RCS leakage that may occur during the interval between water inventory balances. The licensing/design basis for most Westinghouse leakage detection systems is provided in Regulatory Guide (RG) 1.45, "Guidance on Monitoring and Responding to Reactor Coolant System

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Add = M. Hancharik (4643)

Leakage.” RG 1.45 provides for the use of gaseous and particulate radiation detectors for use as RCS leakage detection provided they have the capability to detect a one gallon per minute leak rate within one hour. Also, STS 3.4.15 leakage detection systems preserves the integrity of key assumptions used in the resolution to Generic Letter 84-04, “Safety Evaluation of Westinghouse Topical Reports Dealing with Elimination of Postulated Pipe Breaks in PWR Primary Main Loops.” The analysis described in Generic Letter 84-04 assumed that plant operators would identify a one gallon per minute RCS leak within 4 hours and take action to shutdown the reactor under the “leak before break” analysis.

Most Westinghouse FSARs describe the capability of the gaseous and particulate radiation leakage detectors assuming a RCS source term equivalent to 0.1 percent failed reactor fuel. However, PWRs operated in the US have a RCS source term several orders of magnitude lower than assumed in the design basis calculations. Because of the lower source term, some gaseous and particulate radiation detectors are not capable of alerting plant operators to a one gallon per minute RCS leak within a reasonable response time. For example, at Wolf Creek (ADAMS ML043140279) and Callaway (ADAMS ML032890577) the NRC estimated that greater than 500 hours was required before the gaseous monitor could detect a RCS leak using a realistic RCS source term. In addition the NRC has identified other examples, McGuire Nuclear Station (ADAMS ML051190141), Diablo Canyon (ADAMS ML083080113), Licensee Event Report 50-369/2005-01 (ADAMS ML051310167), and NRC Information Notice 2005-24, “Non-Conservatism In Leakage Detection Sensitivity,” where gaseous or particulate radiation leakage detectors were not cable of detecting a RCS leak within a reasonable time period due to low RCS activity. In addition, the assumed 0.1 percent failed reactor fuel used by Westinghouse describe the capability of the gaseous and particulate radiation leakage detectors is close to the RCS source term limit established in STS 3.4.16, “RCS Specific Activity,” for reactor operation. As such, most, if not all, US PWR would not operate with source term equivalent to 0.1 percent failed fuel.

The proposed change to STS Bases 3.5.15 would allow power reactor licensee’s to inappropriately credit operability of the gaseous and particulate radiation detectors for meeting TS 3.4.15 requirements while these systems are not capable of performing the RCS leakage detection function. This change would permit licensee’s to continue to assume a 0.1percent failed fuel source term in the system design while operating the reactor outside the bounds of this assumption. The end result is that the functional requirements and limits for RCS leakage detection, as discussed in RG 1.45, will not be met.

Changed to NRC Policy on Operability

The proposed amendment would create a significant change to previous NRC positions related to OPERBILITY of TS equipment. Attachment to RIS 2005-20, “Revision to NRC Inspection Manual Part 9900 Technical Guidance, “Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety,” Revision 1, defined operable as:

“A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety functions, and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s).”

If approved, the proposed STS Bases would allow licensee’s to consider the gaseous and particulate radiation leakage detectors OPERABLE when this equipment is not capable of perform the specified safety functions. In this case, the function to alert plant operators of a one gallon per minute RCS leak within one hour. Based on the leakage detector response times determined by the NRC at Wolf Creek and Callaway, gaseous leakage detection systems would not alarm before the next 72 hour RCS water inventory balance is performed as required by STS 3.4.13.

Since the primary water corrosion event, involving the Davis-Besse reactor head, RCS leakage detection capability has become an increasingly sensitivity industry issue. The proposed change to clarify operability requirements of the gaseous and particulate radiation detectors is inconsistent with reactor safety objectives to alert reactor operators to increasing RCS leakage. This change would reduce confidence that reactor operators could identify and take action to shutdown a reactor consistent with the RCS leak before break assumptions. Also, this change is inconsistent with previous definitions of “operable” provided by the NRC. For these reasons, I recommend that the NRC not approve TFT-513.

Thank you,