UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SUPPLEMENT TO THE DRAFT SAFETY EVALUATIONS OF DECEMBER 13, 1999

REGARDING THE CONVERSION OF THE CURRENT TECHNICAL SPECIFICATIONS

TO THE IMPROVED TECHNICAL SPECIFICATIONS FOR

NINE MILE POINT NUCLEAR STATION, UNIT NO 2

DOCKET NO. 50-410

(8) ITS 3.3.4.2 (DOC M.2) Verification of ATWS (Anticipated Transient Without Scram) Trip Time Delays

Two Surveillance Requirements (SRs) have been added 3.3.4.2.4 and 3.3.4.2.5 to verify the low frequency motor generator trip portion of the Reactor Vessel Steam Dome Pressure—High Function is not bypassed for > 29 seconds or when Thermal Power is > 5% RTP (Rated Thermal Power). These SRs ensure that the Reactor Vessel Steam Dome Pressure—High Function is not inadvertently bypassed when it is required to trip the low frequency motor generators. These SRs represent additional restrictions on plant operation, enhance plant safety, and therefore are acceptable.

(9) ITS 3.3.5.1 (DOCs L.11 & M.4), ITS 3.3.8.1 (DOCs L.8 & M.2), ITS 3.3.8.2 (DOCS L.4 , M.2, & M.3), ITS 3.3.8.3 (DOCs L.4, M.2 & M.3) Changes in Allowable Values & Setpoints

The licensee stated that the proposed changes are based on their most recent allowable value calculated consistent with methods described in Regulatory Guide (RG) 1.105, Revision 2, dated February 1986, ISA S 67.04-1982, and/or General Electric Setpoint Methodology described in NEDC-31336P-A, limited by the NRC SER, Revision 1, dated November 6, 1995. The proposed allowable values were established from the plant design or safety limits accounting for calibration uncertainty, process measurement uncertainty, primary element uncertainty, instrument uncertainty, and applicable environment effects. Because the proposed changes are based on allowable values calculated by the NRC-approved GE methodology in NEDC-31336P-A, these changes are acceptable to the staff.

(25) ITS 3.6.1.2 (DOC L.5) SR Frequency Change

The licensee proposed to change the surveillance frequency of verifying the air lock door leakage rate within limits from once per 7 days when the airlock is opened for multiple entries (CTS 4.6.1.3.a.1) to once per 30 days (as described in RG 1.163, which is required to be met in ITS 5.5.12). This extension was recommended and approved by the NRC in RG 1.163, September 1995. The licensee indicated that a review of maintenance history has also shown that this test normally passes the leak rate test. The intent of the change continues to ensure that the leakage is maintained within the proper limits, and the consequences of any analyzed event will remain bounded by the current accident analyses.

Based on the above, the staff finds the proposed change in surveillance frequency of verifying the air door seal leakage rate from once per 7 days to once per 30 days is acceptable as it meets the requirements of RG 1.163 and has a negligible effect on safety.

(28) ITS 3.6.1.3 (DOC L.9) Excess Flow Check Valve Requirement to Check Flow is Deleted

The licensee proposed to delete the requirement in CTS 4.6.3.4 that each excess flow check valve (EFCV) must check flow with the corresponding proposed ITS SR 3.6.1.3.9 that requires the EFCV to actuate to their isolation position (i.e., closed) on an actual or simulated instrument line break signal. The licensee indicated that the requirements for the EFCVs are provided in 10 CFR Part 50 Appendix A, GDCs 55 and 56, and in RG 1.11. These requirements state that there should be a high degree of assurance that the EFCVs will close or be closed if the instrument line outside containment is lost during normal reactor operation, or under accident conditions. The proposed SR ensures this requirement, since it requires the EFCV to isolate to the isolation position (closed) on an instrument line break signal. The CTS requirement does not specifically require the valve to close fully, just to "Check flow". Thus, the proposed ITS SR 3.6.1.3.9 ensures the RG 1.11 provision is met. The licensee also stated that the Instrument Line Break Analysis in the NMP2 USAR Section 15.6.2 does not even assume the valve closed. Since the actual leakage limit is not an assumption in the accident analysis, the leakage limit (i.e., check flow) is proposed to be deleted. The licensee also indicated that a similar change was approved by the NRC for the most recent BWR/5 ITS submittal.

Based on the above and an evaluation of the General Electric Nuclear Energy Topical Report B21-00658-01, "Excess Flow Check Valve Testing Relaxation", the staff finds the proposed change in surveillance of EFCV from check flow to actuate to their isolation position have a negligible effect on safety and is therefore, acceptable.

(30) ITS 3.6.1.6 (DOC L.1), ITS 3.6.2.4 (DOC L.1) Spray Flows SR

Drywell spray flow (ITS 3.6.1.6 )

CTS 3.6.2.2 requires the drywell spray mode of the RHR System to be capable of recirculating water from the suppression pool through the RHR heat exchangers to the drywell spray spargers. The proposed ITS 3.6.1.6 relocates the details of what constitutes an Operable drywell subsystem to the Bases. However, the requirement to circulate water through the heat exchanger has not been included. The licensee indicated that the drywell sprays are required to reduce pressure in the drywell and provide mixing of the atmosphere, not cool the primary containment atmosphere. These functions can be met without cooling the suppression pool water prior to spraying it into the drywell. The analysis for drywell spray does not credit cooling of the suppression pool to perform the pressure mitigation and atmosphere mixing functions. The suppression pool cooling mode, which is governed by another Technical Specification (CTS 3/4.6.2.3 and ITS 3.6.2.3) ensures heat can be removed from the primary containment, as assumed in the accident analysis. Also, the time an RHR subsystem would be in the drywell spray mode is short and this is not a concern for spray pool cooling. While, the analysis for inadvertent drywell spray does credit cooling through the heat exchanger, this is to maximize the effect of the inadvertent spray. If the heat exchangers are not functioning during this event, the consequences of an inadvertent spray will not be as severe. The drywell spray system is

not assumed to be an initiator of any analyzed event in which flow not through the RHR heat exchanger is more limiting.

Based on the above, the staff finds the proposed change in ITS 3.6.1.6 from the CTS 3.6.2.2 for not including that the drywell spray water flow through the RHR heat exchanger is acceptable. The proposed change has a negligible effect on safety as it still provides assurance that the drywell spray system will be maintained OPERABLE, and another proposed Technical Specification will ensure cooling of the drywell to be maintained.

Suppression Pool spray flow (ITS 3.6.2.4 )

CTS 3.6.2.2 and 4.6.2.2.b requires the suppression pool spray mode of the RHR System to be capable of recirculating water from the suppression pool through the RHR heat exchangers to the suppression pool spray spargers. The proposed ITS 3.6.2.4 relocates the details of what constitutes an Operable suppression pool spray subsystem to the Bases. However, the requirement to circulate water through the heat exchanger has not been included. The licensee indicated that the suppression pool sprays are required to reduce pressure in the suppression pool airspace, which will reduce pressure in the drywell. In addition, it also reduces the pressure buildup caused by bypass leakage paths. While the suppression pool spray does provide a cooling effect that also reduces pressure in the suppression pool airspace, adequate cooling effect is provided by a combination of the suppression pool sprays without flow through the RHR heat exchanger and the suppression pool cooling mode. The suppression pool cooling mode is governed by another Technical Specification (CTS 3/4.6.2.3 and ITS 3.6.2.3). The accident analysis does not credit the cooling function of the RHR heat exchangers in the pressure mitigation function of the suppression pool spray system.

Based on the above, the staff finds the proposed change in ITS 3.6.2.4 from the CTS 3.6.2.2 and 4.6.2.2 for not including that the suppression pool spray water flow through the RHR heat exchanger is acceptable. The proposed change has a negligible effect on safety as it still provides assurance that the suppression pool spray system will be maintained OPERABLE, and another proposed Technical Specification will ensure cooling of the drywell to be maintained.

(31) ITS 3.6.3.1 (DOC LA.2) SR Requirement

CTS 3.6.6.1 ACTION only permits one hydrogen recombiner to be inoperable. If two hydrogen recombiners are inoperable CTS 3.0.3 is entered, since CTS 3.6.6.1 provides no actions for this condition. The licensee has proposed an additional ACTION in ITS 3.6.3.1(ACTION B) for the condition of both containment hydrogen recombiners inoperable. This ACTION incorporates STS 3.6.3.1 ACTION B which allows two hydrogen recombiners to be inoperable for up to 7 days provided the hydrogen control function is maintained. This new ACTION would possibly prevent unnecessary shutdown and the increased potential for transients associated with each shutdown. The use of STS 3.6.3.1 ACTION B is allowed, as specified in a Bases Reviewer's Note, provided that the alternate hydrogen control system is found to be acceptable to the staff. The licensee stated that the NMP2 nitrogen inerting and purge system can also control hydrogen in a post-LOCA environment.

The licensee indicated that the alternate hydrogen control for NMP2 has not been approved earlier since RG 1.7, Revision 2 only requires a combustible gas control system to be installed to control hydrogen. The NMP2 design includes redundant hydrogen recombiners which satisfy the requirements of RG 1.7. RG 1.7 specifically states that a containment purge system cannot be used as the primary method of controlling hydrogen after an accident but that it should be capable of aiding in cleanup. The NMP2 Vent and Purge System meets the RG 1.7 provisions. In combination with the inerting portion of the system, it can perform an alternate hydrogen control function (it can control hydrogen and oxygen). The NRC has previously reviewed and approved a similar method for the recent BWR/5 ITS submittal. This method will not be the primary method for controlling hydrogen and oxygen, but is being used to justify a 7-day Completion Time in the unlikely event that both hydrogen recombiners are inoperable.

The proposed change does not involve a significant reduction in safety. The margin of safety for this system is based on the capacity and redundancy of the system. Since the capacity is not changed and the system is backed by other method to control hydrogen, the capability for adequate response to the need for the hydrogen control function is maintained. In addition, the proposed change will prevent unnecessary shutdowns and the associated risk of potential transients.

The NRC staff has reviewed the licensee nitrogen inerting and purge system as an alternate system to control hydrogen for a period of 7 days when the two redundant hydrogen recombiners as a primary system are not available. The alternate system meets RG 1.7, is similar to earlier approved BWR/5 ITS submittals, and, therefore, it is acceptable.

Principal Contributor: R. Tjader

Date: January 4, 2000