March 27, 2002

Mr. Anthony R. Pietrangelo, Director
Risk & Performance Regulation
Nuclear Generation Division
Nuclear Energy Institute
1776 Eye Street, N.W.
Suite 400
Washington, DC 20006-2496

Dear Mr. Pietrangelo:

This is to inform you that disposition has been made on three travelers containing proposed changes to the Standard Technical Specification (STS) NUREGs, initiated by the NEI Technical Specification Task Force (TSTF).

TSTF-347
The staff finds the proposed changes acceptable without modification. Accordingly, enclosed is the staff safety evaluation approving TSTF-347, Rev. 1 for plant-specific license amendment requests and for incorporation into NUREG-1431, Rev. 2, “Standard Technical Specifications Westinghouse Plants.”

TSTF-401
The staff finds the proposed changes acceptable without modification. Accordingly, enclosed is the staff safety evaluation approving TSTF-401 that will revise the Bases to LCO 3.6.X, “Containment Air Temperature” to correct the wording for the actual temperature profile of the containment for incorporation into the standard technical specifications (STS) (all NUREGs) on behalf of the industry.

TSTF-413
The Federal Register Notice of availability for TSTF-413 "Elimination of Post Accident Sampling Requirements for Boiling Water Reactors" was published on March 20, 2002, 67 FR 13027 and is now available for industry use under the Consolidated Line Item Improvement Program (CLIIP).

This completes our review of the above TSTFs. Please contact me at (301) 415-1156 or e-mail rld@nrc.gov if you have any questions or need further information on these dispositions.

Sincerely,

/RA/

William D. Beckner, Program Director
Operating Reactor Improvements Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Enclosures: As stated (2)

cc: J. Arbuckle, BWROG
D. Bice, CEOG
N. Clarkson, BWOG
S. Wideman, WOG
D. Hoffman, EXCEL

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SAFETY EVALUATION ON

PROPOSED CHANGES TO NUREG-1431,

STANDARD TECHNICAL SPECIFICATIONS WESTINGHOUSE PLANTS

1.0 INTRODUCTION

By letters dated July 22, 1999 and January 30, 2002, the Nuclear Energy Institute (NEI) submitted Technical Specification (TS) Change Traveler, TSTF-347, Rev. 1, " P-7 Surveillance" to NUREG-1431, Rev. 2, "Standard Technical Specifications Westinghouse Plants," to make changes to testing requirements for low power reactor trips block.

TSTF-347, Rev. 1 revises Table 3.3.1-1, "Reactor Trip System Instrumentation," Function 18.b., "Low Power Reactor Trips Block, P-7," surveillance requirements (SR) to require an Actuation Logic Test (SR 3.3.1.5) in lieu of a Channel Calibration (SR 3.3.1.11) and a Channel Operational Test (SR 3.3.1.13). TSTF-347, Rev. 1 also revises Reactor Coolant System TS 3.4.19, "RCS Loops - Test Exceptions" to require an Actuation Logic Test on P-7 (SR 3.4.19.3) in lieu of a Channel Operational Test. In addition, TSTF-347, Rev. 1 includes other changes to maintain a consistent format for NUREG-1431. These changes include revising SR 3.4.19.2 to delete P-7 Channel Operational testing and require a Channel Operational Test only on the P-10 interlock (Power Range Neutron Flux) and the P-13 interlock (Turbine Impulse Pressure).

2.0 BACKGROUND

Reactor protection interlocks are instrumentation bypass functions designed to both enable (cause to operate) and disable (inhibit) a reactor protection trip thereby ensuring the correct configuration of reactor trips for the power level of the reactor. TS require reactor protection interlocks to be capable of performing their intended safety function as a back up to operator actions and to ensure protection system functions are not bypassed during unit conditions under which the safety analysis assumes the functions are not bypassed.

RTS instrumentation interlocks include low power range (P-7), intermediate power range (P-6), power range (P-8, P-9, P-10) and turbine impulse pressure (P-13). The Low Power Reactor Trips Block, P-7 interlock, is actuated by input from either the Power Range Neutron Flux, P-10, or the Turbine Impulse Pressure, P-13 interlock. TS limiting conditions for operation (LCO) requirements for the P-7 interlock ensures that the following functions are performed for a four-loop reactor design: (1) on increasing power, the P-7 interlock automatically enables reactor trips on Pressurizer Pressure-Low, Pressurizer Water Level-High, Reactor Coolant Flow-Low (low flow in two or more reactor coolant system (RCS) loops), Reactor Coolant Pump (RCP) Breaker Open, Undervoltage RCPs, and Underfrequency RCPs; and (2) on decreasing power, the P-7 interlock automatically blocks reactor trips on Pressurizer Pressure-Low, Pressurizer Water Level-High, Reactor Coolant Flow-Low (low flow in two or more RCS loops), Reactor Coolant Pump (RCP) Breaker Open, Undervoltage RCPs, and Underfrequency RCPs. The reactor trips are only required when operating above the P-7 interlock setpoint (approximately 10 percent rated thermal power). The reactor trips provide protection against violating the

departure from nucleate boiling ratio (DNBR) limit. Below the P-7 interlock setpoint, the RCS is capable of providing sufficient natural circulation to protect against violating DNBR limits without any RCP running.

3.0 EVALUATION

The TS Bases describe the RTS instrumentation design as segmented into four distinct but interconnected modules: field transmitters; signal process control and protection system; solid state protection system (SSPS) and reactor trip switchgear. The logic testing and semiautomatic testing capabilities of the solid state protection system are used to fulfill testing requirements for protection system interlocks. In the SSPS, the reactor trip and engineered safeguards actuation are pulsed for all combinations of trip and actuation logic with and without the interlock signals.

Currently, TS RTS interlock channel testing requires both a channel operational test (injection of a signal close to the sensor to verify operability) and a channel calibration (trip setpoint adjustment) to ensure all channel components are maintained operable. Each RTS interlock is comprised of the interconnected modules described above, except for the Low Power Reactor Trips Block, P-7 interlock, which receives input signals from either the Power Range Neutron Flux, P-10, or the Turbine Impulse Pressure, P-13 interlock. These input signals are verified to be operable by the channnel operational test and the channel calibration test. Thus, the P-7 interlock is a logic Function with logic channel identity rather than sensor channel identity. For a logic channel, the STS Actuation Logic Test (verify logic output using signal input combinations for each possible interlock logic state) will satisfy Section 50.36 paragraph (c)(3) surveillance requirements. Therefore, requiring an Actuation Logic Test of the Low Power Reactor Trips Block, P-7 interlock will maintain safe operation of the interlock and is consistent with the Table 3.3.1-1 requirement that the P-7 interlock maintain one channel per train operable. Based on the preceding discussion the staff finds the proposed changes to NUREG-1431, Rev. 2, “Standard Technical Specifications Westinghouse Plants” described as Technical Specification Change Traveler, TSTF-347, Rev. 1, “ P-7 Surveillance” acceptable.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE REVIEW OF TSTF-401, "REVISE BASES STATEMENT

FOR CONTAINMENT AIR TEMPERATURE LCO TO MORE ACCURATELY

DESCRIBE ACTUAL OPERATING TEMPERATURES"

1.0 INTRODUCTION

The Nuclear Energy Institute (NEI) Technical Specification Task Force (TSTF) has proposed a generic change to the standard technical specifications (STS) (all NUREGs) on behalf of the industry. This proposed generic technical specifications (TS) change, identified by TSTF-401, will revise the Bases to LCO 3.6.X, "Containment Air Temperature" to correct the wording for the actual temperature profile of the containment.

2.0 BACKGROUND

The proposed generic change will revise an incorrect statement in the STS Bases for the containment air temperature LCO. This revision will indicate that an initial temperature consistent with the LCO assures that the temperature profile resulting from a design base accident (DBA) will not cause containment structure to exceed its design temperature. It will also indicate that the required safety equipment within the containment will not exceed allowable operating temperatures.

The STS NUREG Revision 2 states:

NUREG-1431 B 3.6.5B LCO

"During a DBA, with an initial containment average air temperature within the LCO temperature limits, the resultant peak accident temperature is maintained below the containment design temperature. As a result, the ability of the containment to perform its design function is ensured."

NUREG-1430 B 3.6.5 LCO, NUREG-1431 B 3.6.5A LCO, NUREG-1431 B 3.6.5C LCO, NUREG-1432 B 3.6.5 LCO

"During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limits, the resultant peak accident temperature is maintained below the containment design temperature. As a result, the ability of the containment to perform its design function is ensured."

NUREG-1433 B 3.6.1.5 LCO

"In the event of a DBA, with an initial drywell average air temperature less than or equal to the LCO temperature limits, the resultant peak accident temperature is maintained below the containment design temperature. As a result, the ability of the containment to perform its design function is ensured."

NUREG-1434 B 3.6.1.5 LCO

"With an initial primary containment average air temperature less than or equal to the LCO temperature limits, the peak accident temperature is maintained below the containment design temperature. As a result, the ability of the containment to perform its design function is ensured."

The proposed TSTF-401 changes:

NUREG-1431 B 3.6.5B LCO

"During a DBA, with an initial containment average air temperature within the LCO temperature limits, the resultant *accident temperature profile assures that the containment structural temperature is maintained below its design temperature and that safety related equipment will continue to perform its function.*"

NUREG-1430 B 3.6.5 LCO, NUREG-1431 B 3.6.5A LCO, NUREG-1431 B 3.6.5C LCO, NUREG-1432 B 3.6.5 LCO

"During a DBA, with an initial containment average air temperature less than or equal to the LCO temperature limits, the resultant *accident temperature profile assures that the containment structural temperature is maintained below its design temperature and that safety related equipment will continue to perform its function.*"

NUREG-1433 B 3.6.1.5 LCO

"In the event of a DBA, with an initial drywell average air temperature less than or equal to the LCO temperature limits, the resultant *accident temperature profile assures that the drywell structural temperature is maintained below its design temperature and that safety related equipment will continue to perform its function.*"

NUREG-1434 B 3.6.1.5 LCO

"*During* with an initial primary containment average air temperature less than or equal to the LCO temperature limits, the *resultant accident temperature profile assures that the primary containment structural temperature is maintained below its design temperature and that safety related equipment will continue to perform its function.*"

3.0 EVALUATION

The NEI TSTF has provided the information below to support the changes for this traveler. This justification has been reviewed by the NRC staff for accuracy and has been found to be correct and therefore this change is acceptable.

> "The existing LCO Bases states that the peak accident temperature is maintained below the containment design temperature. This statement is inaccurate. The typical accident analysis shows that the peak containment air temperature resulting from a steam line break exceeds the containment design temperature momentarily during the transient. Figure 1 (from TSTF-401) shows a typical response of containment temperature that would occur during a steam line break. Figure 2 (from TSTF-401) is representitive of

temperature observed by various components in containment during a steam line break. As discussed in 10 CFR 50.49, the basis for containment temperature is to ensure the performance of safety related equipment The typical steam line break analysis identifies that the time interval during which the containment air temperature exceeds the containment design temperature is a short duration such that the equipment surface temperature (including structure) remained below the design temperature.

CONCLUSIONS

The NRC finds that the proposed revisions will allow safe operation with the changes to the Bases to LCO 3.6.X, “Containment Air Temperature” to correct the wording for the actual temperature profile of the containment. The NRC staff also finds that the proposed changes are simple in that they only clarify and correct the LCO Bases. These changes cover all STS NUREGs and their associated Reactor NSSS plants regardless of plant vintage. The NRC staff concludes that the proposed TSTF-401, Revision 0 changes are acceptable.