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2/28/02

Mohan,

The attached file provides the information you requested regarding the NPPD submittal dated May 9, 2001, that requested changes to Technical Specification Table 3.3.1.1-1. The attached is provided as clarification of the information submitted by that letter, and not as new or additional information.

Please call if you have questions.

Ronald E. Rogers
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<<APRM Clarification.doc>>

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Clarification of Information Submitted in NPPD letter dated May 9, 2001 (NLS2001008)
Subject: "Proposed Change to CNS Technical Specifications –
Flow Biased High Flux Clamp Reference"

Question No. 1

Provide clarification of the changes to technical specifications proposed by the NPPD request for license amendment submitted by letter dated May 9, 2001.

Response No. 1

The referenced letter requested two separate changes to technical specifications. One was correction of a typographical error, and the other an actual revision of a technical specification value.

Requested change number 1 was correction of a typographical error in Table 3.3.1.1-1, for Function 1.b. Table 3.3.1.1-1 Reactor Protection System Instrumentation, identifies the various functions of RPS, the applicable modes, required number of channels, Surveillance Requirements (SR), and Allowable Values. Function 1 is the Intermediate Range Monitors (IRMs). Function 1.b addresses the INOPERABLE condition of the IRMs. Function 1.b contains two parts, one for APPLICABLE MODE 2 and one for APPLICABLE MODE 5. For MODE 2 the table refers to the correct SRs of "SR 3.3.1.1.3", "SR 3.3.1.1.4", and SR "3.3.1.1.13." For MODE 5 the table refers to the correct SRs of "SR 3.3.1.1.3", "SR 3.3.1.1.4", and the incorrect SR of "SR 3.3.2.2.13." The requested change was to revise "SR 3.3.2.2.13" to "SR 3.3.1.1.13." This incorrect SR referenced for Function 1.b in Table 3.3.1.1-1 was submitted by NPPD in letter to the NRC dated March 27, 1997 (NLS970002), "Proposed Change to CNS Technical Specifications – Conversion to Improved Technical Specifications." This reference to incorrect SR was issued as requested by Amendment No. 178 dated July 31, 1998.

The reference to "SR 3.3.2.2.13" is incorrect. There is no SR 3.3.2.2.13 in CNS TS. Additionally, there is no functional link between the instrumentation addressed by TS 3.3.2.2, "Feedwater and Main Turbine High Water Level Trip Instrumentation", and the IRMs addressed in Table 3.3.1.1-1.

The above discussion clarifies that changing "SR 3.3.2.2.13" to "SR 3.3.1.1.13" is a correction of a typographical error in CNS TS.

Requested change number 2 was to delete the "fixed" (i.e., not variable) portion of the Allowable Value for Function 2.b, "Neutron Flux – High (Flow Biased)" for Average Power Range Monitor (APRM) in TS Table 3.3.1.1-1. This is the "flow-biased" (i.e. variable, as a function of reactor recirculation flow) signal from the Reactor Protection System (RPS) that has the function to trip the reactor on high neutron flux.

The Allowable Value for this function, submitted with the NPPD letter dated March 27, 1997, for the conversion to improved standard technical specifications, was " $\leq 0.58W + 61.0\% RTP$ and $\leq 119.0\% RTP$ ", with footnote "(b)" added. This Allowable Value was approved as requested and issued to NPPD by Amendment No. 178 dated July 31, 1998. Subsequently, by letter to the NRC dated December 15, 1999, NPPD requested revision of the flow-biased portion (i.e., variable, based on actual value of recirculation flow) of the Allowable Value to " $\leq 0.66 W + 71.5\% RTP$ ", while making no change to the value of "119.0%" for the fixed portion. This was approved as requested by Amendment No. 184, dated April 11, 2000.

Thus, the second change requested is an actual change to the technical specifications requiring review by the NRC staff, and not correction of a typographical error. A discussion of the justification for this change and why it is acceptable is provided in the response to question number 2 below.

Question No. 2

Provide additional discussion of justification for the requested revision of technical specifications to delete the 119.0% fixed portion of the APRM flow biased setpoint, including why the deletion of this fixed portion is acceptable and why it is acceptable to not have the clamp on the instrument circuit.

Response No. 2

The Allowable Value for Function 2.b in TS Table 3.3.1.1-1, submitted by NPPD letter dated March 27, 1997, request for conversion to standard technical specifications, was " $\leq 0.58W + 61.0\%$ RTP and $\leq 119.0\%$ RTP", with footnote "(b)" added. (As indicated in Response No. 1 above, this value was approved as requested by Amendment No. 178, dated July 31, 1998.) The variable "W" in the Allowable Value is Reactor Recirculation Flow (expressed as a percentage of flow.) The fixed (i.e., not a function of reactor recirculation flow) value of 119.0% for neutron flux is based on using a value of 100.0% as the recirculation flow rate. That is, if a value of "100.0" is used for W in the Allowable Value equation, the flow biased portion has a value of 119.0%, which is the same as the value of the "fixed" portion. Using a value less than "100.0" for W results in a value for the flow biased portion of less than 119.0%, and that is the value of the neutron flux that would generate a reactor trip signal from RPS. Using a value greater than "100.0" for W results in a value for the flow biased portion of greater than 119.0%. At this point, if CNS had a clamping function on the flow biased trip circuit, the Allowable Value would be clamped at 119.0%. However, the flow bias circuit does not perform a clamping action at recirculation flows greater than 100%.

Because recirculation flow greater than 100% is not authorized the "fixed" value of 119% was recognized to be the upper limit of the flow biased high flux Allowable Value. The "fixed" portion of the flow biased Allowable Value was included in the submittal to conform to standard technical specification format. When the flow biased high flux Allowable Value was raised to " $\leq 0.66W + 71.5\%$ RTP" by Amendment 184, the "fixed" portion of the Allowable Value should have been deleted.

The APRM trip circuitry generates a separate signal for the fixed high flux, limited to 120%. This is reflected in TS Table 3.3.1.1-1 as Function 2.c, "Neutron Flux – High (Fixed)." The CNS flow-biased trip circuitry does not currently have a clamp installed. Addition of a clamp to the CNS circuitry is not needed since the combination of the flow-biased signal and the fixed signal accomplishes the same function as a flow biased circuit with integral clamp.

Based on the above, it is concluded that deleting the fixed portion of the Neutron Flux – High (Flow Biased) Allowable Value does not jeopardize safe reactor operation. Maintaining Function 2.c, "Neutron Flux – High (Fixed)", in TS Table 3.3.1.1-1 with an Allowable Value of " $\leq 120\%$ " will ensure the continued protection of public health and safety with respect to automatic trip of the reactor on high neutron flux.