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NRC:07:054

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Revised Response to a Request for Additional Information Regarding ANP-10275P "U.S. EPR Instrument Setpoint Methodology Topical Report" (TAC No. MD4976)

Ref. 1: Letter, Ronnie L. Gardner (AREVA NP Inc.) to Document Control Desk (NRC), "Request for Review and Approval of ANP-10275P, 'U.S. EPR Instrument Setpoint Methodology Topical Report'," NRC:07:009, March 26, 2007.

Ref. 2: Letter, Getachew Tesfaye (NRC) to Ronnie L. Gardner (AREVA NP Inc.), "Request for Additional Information Regarding ANP-10275P, 'U.S. EPR Instrument Setpoint Methodology Topical Report' (TAC No. MD4976)," July 25, 2007.

Ref. 3: Letter, Getachew Tesfaye (NRC) to Ronnie L. Gardner (AREVA NP), "Acceptance for Review of ANP-10275P, 'U.S. EPR Instrument Setpoint Methodology Topical Report' (TAC No. MD4976)," May 3, 2007.

Ref. 4: Letter, Ronnie L. Gardner (AREVA NP Inc.) to Document Control Desk (NRC), "Response to a Request for Additional Information Regarding ANP-10275P 'U.S. EPR Instrument Setpoint Methodology Topical Report' (TAC No. MD4976)," NRC:07:041, August 24, 2007.

AREVA NP Inc. (AREVA NP) requested the NRC's review and approval of ANP-10275P, "U.S. EPR Instrument Setpoint Methodology Topical Report" in Reference 1. The NRC provided a Request for Additional Information (RAI) regarding this topical report in Reference 2. The original response to this RAI was provided in Reference 4.

The response to RAI 2 has been revised to reflect a telephone discussion of this response with the NRC on October 2, 2007. The revised response, which includes revised pages to the topical report, is enclosed with this letter, ANP-10275Q1 Revision 1, "Response to a Request for Additional Information Regarding ANP-10275P 'U.S. EPR Instrument Setpoint Methodology Topical Report'."

AREVA NP plans to reference the topical report ANP-10275P in its Design Control Document (DCD) for the U.S. EPR. Reference 3 states that the NRC plans to complete its review of the topical report and issue the draft safety evaluation by October 31, 2007. AREVA NP understands that this timely response to the RAI supports the scheduled deliverable of the draft safety evaluation.

AREVA NP INC.

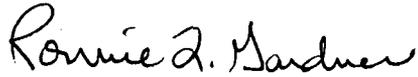
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If you have any questions related to this submittal, please contact Ms. Sandra M. Sloan, Regulatory Affairs Manager for New Plants Deployment. She may be reached by telephone at 434-832-2369 or by e-mail at sandra.sloan@areva.com.

Sincerely,



Ronnie L. Gardner, Manager
Site Operations and Corporate Regulatory Affairs
AREVA NP Inc.

Enclosure

cc: L. Burkhart
G. Tesfaye
Project 733

Revised Response to a Request for Additional Information – ANP-10275P
“U.S. EPR Instrument Setpoint Methodology Topical Report”
(TAC No. MD4976)

RAI 1: *The setpoint methodology added a margin to the instrument channel uncertainty (CU) to derive the nominal trip setpoint (NTSP) from the analytical limit (AL). Provide the criteria regarding how much the margin has been added to the CU.*

Response 1:

The amount of margin added to the channel uncertainty calculation is discretionary. There is no set value (e.g. 5% or 10%). Reasons for including margin range from simply rounding to the nearest engineering unit on the conservative side to a larger rounding of several engineering units. It takes into consideration the operating parameter values to avoid spurious trips. It may include room for some of the assumptions used for the development of initial uncertainty calculations. Calculations developed during detailed design will determine the plant specific values for the AL, limiting trip setpoint (LTSP), NTSP, and margin.

RAI 2: *This topical report states that the instrument is declared inoperable if the As-Found (AF) value exceeds the Allowable Value (AV). Difference between AF and AV is a value of the margin. Justify why the AF tolerance is not used to determine the operability of the channel (instrument).*

Response 2:

The topical report will be revised to reflect that the AV equals the AF tolerance. See attached revised pages to the topical report.

Attachment: Response to RAI 2 - Revised topical report pages 4-4 and 4-5.

AREVA NP Inc.
U.S. EPR Instrument Setpoint Methodology
Topical Report

ANP-10275NP
Revision 0
Page 4-4

Total loop calibration

$$PTAC_{LOOP} = [(RA)^2 + (M\&TE)^2 + (M\&TEr)^2 + (DR)^2 + (RA_{DPS\ Module1})^2 + (RA_{DPS\ Module2})^2 + (\dots)^2]^{1/2}$$

For loops with additional components prior to the DPS racks, the additional components will be treated like the sensor calibration for an individual component calibration. If a loop calibration is performed, the RA and DR of the extra components will be included in the SRSS equation.

The AVs represent the upper limit of the PTAC per ANSI/ISA-67.04.01-2006. The following formulas will be used for the determination of the AV:

Increasing Process

$$AV = NTSP + PTAC$$

Decreasing Process

$$AV = NTSP - PTAC$$

Providing that the NTSP is reset or left within the ALT at the end of each surveillance, and the NTSP is more conservative than the LTSP, the LTSP would protect the safety limit since the CU is calculated based on all uncertainties, including the ones used for the determination of the PTAC and the AV. This is consistent with RIS 2006-17 which states "the LTSP protects the Safety Limit". The following concept (#5) from TSTF-493 is applicable:

The AV (defined as the least conservative acceptable as-found surveillance value) defines the maximum possible value for process measurement at which the AL is protected. The AV verifies that the AL and Safety Limit are still protected at the time of the surveillance. Since OPERABILITY of the instrument channel is determined at the time of the surveillance performance, the fact that the tested trip point occurred

conservative to the AV ensures that at that point in time the channel would have functioned to protect the AL and is OPERABLE. With the implementation of these concepts, calculation of the AV using any of the ISA S67.04 Part II methods is acceptable.

Figure 4.2-1 illustrates the relationships between setpoint terms.

**Figure 4.2-1 Setpoint Relationships
(for Increasing Process)**

