AP1000DCDFileNPEm Resource

From: Loza, Paul G. [lozapg@westinghouse.com]
Sent: Thursday, April 02, 2009 6:47 AM
To: Phyllis Clark
Cc: Perry Buckberg; Rhonda Butler
Subject: Acknowledgement of RAI-SRP15.0-SRSB-02
Attachments: AP1000 Power Uncertainty RAI 3-26-09.doc

Mornin' Phyllis,

I acknowledge receipt for Westinghouse of RAI-SRP15.0-SRSB-02. The proposed response date is within 45 days of today.

Thanks,

Paul

From: Phyllis Clark [mailto:Phyllis.Clark@nrc.gov]
Sent: Thursday, April 02, 2009 5:39 AM
To: Loza, Paul G.
Cc: Rhonda Butler
Subject:

Hi Paul,

I have attached the power uncertainty RAI-SRP 15.0-SRSB-02 . Please acknowledge receipt of this RAI. Let me know if you need any more information. In addition, per our discussion yesterday, 4/1/09, we will have a conference call on 4/6/09. I will send you as meeting notice.

Thanks,

Phyllis

Hearing Identifier: AP1000_DCD_Review
Email Number: 188

Mail Envelope Properties (E501235702183E47BF44683A3B6A1929013AA34358BB)

Subject: Acknowledgement of RAI-SRP15.0-SRSB-02
Sent Date: 4/2/2009 6:47:09 AM
Received Date: 4/2/2009 6:47:13 AM
From: Loza, Paul G.

Created By: lozapg@westinghouse.com

Recipients:
"Perry Buckberg" <Perry.Buckberg@nrc.gov>
Tracking Status: None
"Rhonda Butler" <Rhonda.Butler@nrc.gov>
Tracking Status: None
"Phyllis Clark" <Phyllis.Clark@nrc.gov>
Tracking Status: None

Post Office: SWEC9966.w-intra.net

Files	**Size**	**Date & Time**
MESSAGE	659	4/2/2009 6:47:13 AM
AP1000 Power Uncertainty RAI 3-26-09.doc	23616	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Request for Additional Information

RAI-SRP 15.0-SRSB-02:

In AP1000 DCD Revision 17, Section 15.0.3.2, “Initial Conditions,” Footnote a to Table 15.0-2, and various places in Chapter 15, the following statement is added: “The main feedwater flow measurement supports a 1-percent power uncertainty; use of a 2-percent uncertainty is conservative.” Although, in Revision 17 of DCD, a 2% power uncertainty is assumed for the initial condition for most accidents that are not DNB limited, a 1% power uncertainty is assumed for the initial reactor power for the large-break LOCA analysis in DCD Section 15.6.5.4A, as well as the mass and energy release calculations in DCD Section 6.2.1.3 and 6.2.1.4. However, the AP1000 DCD does not describe the instrumentation or methodology for the main feedwater flow measurement, nor provide a basis for the statement that the main feedwater flow measurement supports a 1-percent power uncertainty.

a. Describe the mechanism, such as the AP1000 DCD and ITAAC or a COL action item, by which the information will be provided to support claimed 1-percent power measurement uncertainty and how it will be verified and confirmed.

b. The following information should be provided to support the claimed 1-percent power measurement uncertainty:

(1) A description of the instrumentation and methodology used for the main feedwater flow measurement and calorimetric power measurement.

(2A) A reference to the NRC approval of the main feedwater and power measurement methodology, instrumentation, and associated uncertainties. Or

(2B) A detailed description of the analyses of the main feedwater flow measurement and power measurement uncertainties, respectively. The description should include information such as: (1) the parameters measured, e.g., feedwater flow rate, pressure, and inlet and outlet temperatures; (2) the instrument string, including applicable sensors or transducers, process rack, analog/digital converter, process computer, and readout devices, etc., for each parameter measured; (3) the accuracy of allowance associated with each instrument component, such as sensor reference, calibration, and measurement accuracies, respectively; rack calibration and measurement accuracies; sensor pressure and temperature effects; rack pressure and temperature effects; drift; process measurement accuracy; instrument range, span, and operating limits, etc.; (4) the methodology for combining uncertainties, allowances, or errors of the instrument components associated with each parameter to arrive at the overall uncertainty of each measured parameter; and (5) the methodology used to arrive at the total uncertainties for the main feedwater flow rate and reactor thermal power, respectively.