PMVogtleCOLPEm Resource

From: Eddie Grant [eddie.grant@excelservices.com]
Sent: Tuesday, January 25, 2011 4:47 PM
To: Habib, Donald
Cc: Hsii, Yi-Hsiung; Donoghue, Joseph; Joshi, Ravindra; Sebrosky, Joseph
Subject: RE: Wording for Power Uncertainty Discussed on Vogtle Public Call - information for discussion

Mr. Habib

Included below is draft information for discussion during an upcoming public telecom.
The yellow highlight represents the additional language to make the commitment more specific.
The red text represents additions or strikeout / text deletion related to your suggested information.

The removal of the "Vogtle" is to allow the response to be STANDARD for all the AP1000 COLAs.
We would also prefer to be not so specific as to identify the certified facility where the calibration will be done.
We have also identified a couple of grammatical edits.

This information is still under review by the DCWG and NuStart but I wanted to get this to you so we could determine if it meets your needs.

We look forward to your feedback.

Thanks,
Eddie R. Grant
NuStart - AP1000 Licensing

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eRAI Tracking No. 3951

NuStart Qb Tracking No. 4254

Re: NRC SER OI Number 15.00-01:

Information related to COL SER open item 15.00-01 was provided in Southern Nuclear Operating Company (SNC) letter ND-10-2091 dated October 29, 2010. During review of the ACRS, there was a question as to whether the applicant had sufficiently committed to complete the required calibrations.

In that letter, the four items from the Safety Evaluation Report for use of the Caldon CheckPlus™ Leading Edge Flow Meter (LEFM) were addressed. Item 4 of the SER requested:

4. Licensees for plant installations where the LEFM was not installed with flow elements calibrated to a site-specific piping configuration (flow profiles and meter factors not representative of the plant-specific installation), should provide additional justification for use. This justification should show either that the meter installation is independent of the plant-specific flow profile for the stated accuracy, or that the installation can be shown to be equivalent to known calibrations and the plant configuration for the specific installation, including the propagation of flow profile effects at higher Reynolds numbers. Additionally, for previously installed and calibrated LEFM, the licensee should confirm that the piping configuration remains bounding for the original LEFM installation and calibration assumptions."

To address the ACRS question regarding the clarity of the commitment, the information provided to address this SER item is revised to read as follows:

4. This application represents construction of a new plant with no previously installed flow metering equipment. The AP1000 main feedwater flow measurement instrumentation, consistent with the use of normalized flow meters, is required to be calibrated at a certified test laboratory in hydraulic model geometry consistent with AP1000 plant design. Prior to installation, the ~~Vogtle~~ LEFM Check Plus System will be calibrated at a certified facility (e.g., Alden Research Laboratories) with a test model representative of plant ~~Vogtle~~ piping configurations. ~~All c~~Calibration standards will be traceable to National Institute of Standards and Technology standards. After installation in the plant, the LEFM Check Plus System will be tested in accordance with the LEFM Check Plus system commissioning procedure developed by Cameron to confirm that the actual instrument performance is consistent with the assumptions of the uncertainty calculation. Therefore, additional justification for use of the LEFM is not required.

In addition, the material included in FSAR Chapter 15, Subsection 15.0.3.2 will also be revised as shown below in the Application Revisions section.

This additional information is expected to be STANDARD for the S-COLAs.

Associated VEGP COL Application Revisions:

COLA Part 2 (Rev. 4), FSAR Chapter 15, Subsection 15.0.3.2, will be revised from:

> The plant operating instrumentation selected for feedwater flow measurement is a Caldon [Cameron] LEFM CheckPlus™ System (Reference 201). This selected plant operating instrumentation has documented instrumentation uncertainties to calculate a power calorimetric uncertainty that confirms the 1% uncertainty assumed for the initial reactor power in the safety analysis bounds the calculated calorimetric power measurement uncertainty values. This calculated calorimetric is done in accordance with a previously accepted Westinghouse methodology (Reference 202). Administrative controls implement maintenance and contingency activities related to the power calorimetric instrumentation.

To read:

> The plant operating instrumentation selected for feedwater flow measurement is a Caldon [Cameron] LEFM CheckPlus System (Reference 201), which will be calibrated ~~prior to installation~~ (in a certified laboratory using a piping configuration representative of the plant ~~Vogtle~~ piping design) prior to installation and will be tested after installation in the plant in accordance the LEFM CheckPlus commissioning procedure. This selected plant operating instrumentation has documented instrumentation uncertainties to calculate a power calorimetric uncertainty that confirms the 1% uncertainty assumed for the initial reactor power in the safety analysis bounds the calculated calorimetric power uncertainty values. The calculated calorimetric is done in accordance with a previously accepted Westinghouse methodology (Reference 202). Administrative controls implement maintenance and contingency activities related to the power calorimetric instrumentation.

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From: Habib, Donald [mailto:Donald.Habib@nrc.gov]
Sent: Friday, January 21, 2011 6:37 AM
To: Amy Aughtman SNC; wasparkm@southernco.com; Eddie Grant
Cc: Hsii, Yi-Hsiung; Donoghue, Joseph; Joshi, Ravindra
Subject: Wording for Power Uncertainty Discussed on Vogtle Public Call

All –

Below is the wording discussed on the public call yesterday:

AP1000 COLA Application (Response to Criterion 4) (Page 6)

This application represents construction of a new plant with no previously installed flow metering equipment. The AP1000 main feedwater flow measurement instrumentation, consistent with the use of normalized flow meters, is required to be calibrated at a certified test laboratory in hydraulic model geometry consistent with AP1000 plant design. Prior to installation, the Vogtle LEFM Check Plus System will be calibrated at Alden Research laboratories with a test model representative of Vogtle piping configurations. All calibration standards will be traceable to National Institute of Standards and Technology standards. After installation in the plant, the LEFM Check Plus System will be tested in accordance with the LEFM Check Plus system commissioning procedure developed by Cameron to confirm that the actual instrument performance is consistent with the assumptions of the uncertainty calculation. Therefore, additional justification for use of the LEFM is not required.

1. COLA Part 2 (Rev. 3), FSAR Chapter 15, Section 15.0.3.2, will be revised to read: (Page 8)

The plant operating instrumentation selected for feedwater flow measurement is a Caldon [Cameron] LEFM CheckPlus System (Reference 201), which will be calibrated prior to installation in a certified laboratory using a piping configuration representative of the Vogtle piping design and be tested after installation in the plant in accordance the LEFM CheckPlus commissioning procedure. This selected plant operating instrumentation has documented instrumentation uncertainties to calculate a power calorimetric uncertainty that confirms the 1% uncertainty assumed for the initial reactor power in the safety analysis bounds the calculated calorimetric

power uncertainty values. The calculated calorimetric is done in accordance with a previously accepted Westinghouse methodology (Reference 202). Adminstrative controls implement maintenance and contingency activities related to the power calorimetric instrumentation.

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