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Project Number 694

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U.S. Nuclear Regulatory Commission
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Subject: PWR Owners Group
**Transmittal of the PWROG Meeting Materials from the June 1, 2016
NRC/PWROG Meeting to Discuss Westinghouse InfoGram IG-14-1
“Material Properties for Loss-of-Coolant Accident Mass and Energy Release
Analyses” (PA-ASC-1420)**

The purpose of this letter is to transmit the PWR Owners Group meeting materials that were discussed in the June 1, 2016 NRC/PWROG meeting, WAAP-9917, Revision 1 “PWR Owners Group – NRC Meeting to Discuss the WCAP-10325-P-A Mass and Energy Release Methodology” (PA-ASC-1420) (Enclosure 1).

Enclosure 2 is Westinghouse letter CAW-16-4436, the accompanying affidavit, Proprietary Information Notice, and Copyright Notice.

The enclosed presentation material (Enclosure 1) contains information proprietary to Westinghouse Electric Company LLC; it is supported by an affidavit signed by Westinghouse, owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b) (4) of Section 2.390 of the Commission’s regulations.

Accordingly, it is respectfully requested that this information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission’s regulations.

Correspondence with respect to the copyright or proprietary aspects of the information or supporting Westinghouse affidavit should reference - CAW-16-4436 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Correspondence related to this transmittal should be addressed to:

Mr. W. Anthony Nowinowski, Program Manager
PWR Owners Group, Program Management Office
Westinghouse Electric Company
1000 Westinghouse Drive
Cranberry Township, PA 16066

If you have any questions, please do not hesitate to contact me at (205) 992-7037 or Mr. W. Anthony Nowinowski, Program Manager of the PWR Owners Group, Program Management Office at (412) 374-6855.

Sincerely yours,

J. Molkenthin Approving for J. Stringfellow

Jack Stringfellow
Chief Operating Officer & Chairman
Pressurized Water Reactor Owners Group

NJS:JPM:cah

cc: PWROG Analysis Committee
PWROG Steering and Management Committee
PWROG PMO
J. Gresham, Westinghouse
J. Andrachek, Westinghouse
B. Jakub, Westinghouse
K. Bonadio, Westinghouse
J. Ghergurovich, Westinghouse
K. Plute, Westinghouse
J. Rowley, US NRC

- Enclosure 1: Presentation - WAAP-9917, Revision 1 "PWR Owners Group – NRC Meeting to Discuss the WCAP-10325-P-A Mass and Energy Release Methodology"
(Proprietary)
- Enclosure 2: Affidavit for Withholding, CAW-16-4436 with accompanying Affidavit, Proprietary Information Notice and Copyright Notice

**Approach of PWROG Project PA-ASC-1420, "Continued Use of WCAP-10325-P-A
with the Current Material Property Values"**

Background

During a phone call with the NRC and PWROG representatives on November 14, 2016, the approach that will be utilized for the program that will address the material property differences used in the original Westinghouse WCAP-10325-P-A LOCA mass and energy (M+E) analysis methods was discussed. The purpose of the program is to demonstrate that the current approved WCAP-10325-P-A Westinghouse LOCA Mass and Energy (M+E) release methodology which uses the original material heat capacity values continues to provide a conservative (mass and energy release) result, when compared to a more recently approved LOCA M+E analysis methodology utilizing WCobra/Trac (WCAP-17721-P-A). The objective of the program is to prepare and submit a Topical Report (TR) for NRC review and approval. After the TR is approved by the NRC, licensees can revise their licensing basis to reference the TR, in addition to WCAP-10325-P-A. This approach was discussed with the NRC in prior meetings and was considered a reasonable approach by the NRC staff for addressing the material property difference.

During the November 14, 2016 call, the NRC staff members asked additional questions as to how previous NSALs that impact the LOCA M+E methodology in WCAP-10325-P-A, will be addressed in the TR. The discussion below provides a response to those questions to clarify how those NSALs will be addressed.

Response to NRC Questions

Attached are the slides which were presented to the NRC on June 1 and November 14, 2016. These slides provide additional background on the program and highlight the content discussed with the NRC.

Licensing Approach

- *This is a generic Topical Report (TR) that will address the material property value difference that was raised on the Westinghouse WCAP-10325-P-A LOCA M&E analysis methodology. After the TR is approved by the NRC, it will be added to the licensing basis via 10CFR50.59, which will address the continued use of WCAP-10325-P-A with the original material property values.*
- *The TR will not address the previous NSALs that impact the LOCA M+E methodology in WCAP-10325-P-A, and will only be referenced to address the material property issue. Those NSALs will be addressed separately, via revisions to the LOCA M&E analysis of record. Therefore, the TR will only address the material property value difference.*
- *If a licensee submits a licensing amendment request associated with a Technical Specification change associated with a LOCA M+E re-analysis, the licensee should discuss how the previous NSAL that affect the LOCA M+E analysis were addressed in the re-analysis. Those LARs should reference WCAP-*

10325-P-A and the TR that addresses the continued use of the original material property values after the TR is approved by the NRC.

Topical Report Comparison

- *The TR will include comparisons of the energy released using the LOCA M+E methodology in WCAP-10325-P-A to the energy released using the LOCA M&E methodology in WCAP-17721-P-A. This will demonstrate that the WCAP-10325-P-A energy releases, generated with the original material property values, are conservative as compared to the energy releases using the LOCA M&E methodology in WCAP-17721-P-A. Also note that the NRC approved WCobra/Trac WCAP-17721 methodology accounted for the higher material property values.*
- *Since the purpose of the TR comparison is to highlight the differences between the analysis methodologies, and identify the conservative nature of the energy release rate in the WCAP-10325-P-A methodology, the releases generated by these two models will be generated at the same conditions as possible, with the exception of the material property values. In this way, the TR model comparisons will provide an accurate comparison between the two methodologies. The NRC also commented that the comparison should be done with "everything else being equal", during the November 14, 2016 call and is discussed on Slide 4.*
- *While the TR will only address the material property difference, the NSALs will be addressed in the WCAP-10325-P-A model to ensure consistency between the two methodologies. These consistent conditions, will ensure that the comparison between the two methodologies will best isolate the "methodology" differences and provide the best comparison between the two methodologies*

The PWROG program is currently on schedule, the pre-submittal meeting should be held in November 2017, and the TR should be submitted to the NRC in January 2018.



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**PWR Owners Group Project PA-ASC-1420 and
Commitment to Submit Topical Report**

**“Continued use of WCAP-10325-P-A,
Westinghouse LOCA M+E Methodology”**

**Jack Stringfellow, PWROG Chairman
Doug Pollock, PWROG ASC Chairman
Kent Bonadio, Westinghouse-CRA**

November 14, 2016

Agenda

- Introductions
- Objective of the Meeting
- Summary of NRC Meeting – June 1, 2016
- Summary of Approved Program - PA-ASC-1420
- Schedule for Proposed Work
- Next Steps
- Questions

Objective of the Meeting

- The objective of the meeting is to follow up with the NRC on the progress of a proposed PWROG program to submit a Topical Report (TR) which addresses the volumetric heat capacity values describe in InfoGram 14-1 and continued use of WCAP-10325-P-A for LOCA Mass & Energy release analyses



Summary of NRC Meeting – June 1, 2016

NRC/PWROG meeting Summary

- PWROG presented proposed approach to generically address InfoGram 14-1 material property value differences and the continued use of WCAP-10325-P-A with comparison to approved Westinghouse WCOBRA/TRAC LOCA M+E method (WCAP-17721-P-A)
- A Topical Report (TR) was proposed to be generated for NRC review and referenced with continued use of WCAP-10325-P-A
- NRC attendees noted this was more of a licensing issue and were fundamentally agreeable to this approach
- NRC recommended to ensure the comparison is done with “everything else being equal.” and to include a section with Licensing implementation
- Questions were raised on NRCs on-going LAR reviews and RAIs regarding material property differences. The NRC recommended that the PWROG prioritize this project, secure funding and commit to a TR submittal to relieve the continued RAIs on material property differences (with a docketed reference to this commitment)



Summary of NRC Meeting – June 1, 2016

NRC/PWROG meeting Actions

- Kent Bonadio/Bob Jakub (Westinghouse) –
Finalize and present PA-ASC-20 at August 2016 PWROG Meeting –
COMPLETE
- Jack Stringfellow (PWROG Chairman) –
Present PA at PWROG Executive Management Meeting –
COMPLETE
- Jack Stringfellow/Doug Pollock (PWROG ASC Chairman) –
With PWROG Project Acceptance, Present Status to NRC and
Commitment to submit Topical Report for NRC Review -
Purpose of Today's Meeting



Summary of Approved Program - PA-ASC-1420

Generation of Topical Report which demonstrates that the methodology in WCAP-10325-P-A is conservative when compared to WCAP-17721-P-A

- Comparison of Generic Large-Dry LOCA M+E Release
- TR will contain a numerical and graphical comparison of integrated mass and energy releases from WCAP-10325-P-A for a representative 4-loop PWR to the recently NRC approved WCAP-17721-P-A (WCOBRA/TRAC) methodology
 - The comparison will demonstrate that (with everything else being equal) conservatism exists in the energy release forcing function
- Comparison of Generic Containment Pressure Response
- The new TR will be adopted by the licensees via the 10CFR50.59 process and added to the FSAR as a reference (in addition to WCAP-10325-P-A)



Schedule for Proposed Work

Task	Description	Date
1-4	PWROG ASC-1420 Analysis	01/2017 to 11/2017
5	NRC Pre-Submittal Meeting	12/2017
6	Final TR Submittal	01/2018



Next Steps

- PWROG to issue Meeting Minutes in letter to NRC
- Request NRC to docket letter for PWROG reference that can be used by OG utilities in future LAR submittals



Questions

Open Discussion



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