



Program Management Office
4350 Northern Pike
Monroeville, Pennsylvania 15146

WCAP-16125-NP, Rev. 2 (Non-Proprietary)
Project No. 694

July 8, 2009

OG-09-239

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-001

Subject: Pressurized Water Reactor Owners Group
Responses to the NRC Request #2 for Additional Information (RAI) on Topical Report (TR) WCAP-16125-NP, Revision 1, "Justification for Risk-Informed Modifications to Selected Technical Specifications For Conditions Leading to Exigent Plant Shutdown" (PA-LSC-0364 Revision 2)

References:

1. PWROG Letter, F. Schiffley to Document Control Desk, "Transmittal of WCAP-16125-NP, Revision 1, "Justification for Risk-Informed Modifications to Selected Technical Specifications For Conditions Leading to Exigent Plant Shutdown," OG-08-7, January 7, 2008.
2. NRC Letter, Holly D. Cruz of NRR to Mr. Anthony Nowinowski of the PWR Owners Group Program Management Office, "Request for Additional Information Re: Pressurized Water Reactor Owners Group (PWROG) Topical Report (TR) WCAP-16125-NP, Revision 1, "Justification for Risk-Informed Modifications to Selected Technical Specifications For Conditions Leading to Exigent Plant Shutdown," (TAC No. MD8138), January 27, 2009.
3. PWROG Letter, D. Buschbaum to Document Control Desk, "Responses to the NRC Request for Additional Information (RAI) on Topical Report (TR) WCAP-16125-NP, Revision 1, "Justification for Risk-Informed Modifications to Selected Technical Specifications For Conditions Leading to Exigent Plant Shutdown" OG-09-186, May 8, 2009.
4. NRC Email, Holly D. Cruz of NRR to Chad M. Holderbaum of the PWR Owners Group Program Management Office, "Request For Additional Information - TR WCAP-16125 REV. 2 (Nos. 11-13)", June 8, 2009.

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Enclosure 1 to this letter provides the additional RAI responses to those questions received in reference 4 above.

These RAI responses are being provided to support issuance of the draft Safety Evaluation on WCAP-16125-NP Revision 2.

Following receipt of the Safety Evaluation for WCAP-16125-NP Revision 2, this letter will be incorporated into the approved version and will be issued as WCAP-16125-NP-A, Revision 2.

If you have any questions concerning this matter, please feel free to call Chad Holderbaum at 412-374-6230.

Sincerely,

 FOR DENNIS BUSCHBAUM

Dennis Buschbaum, Chairman
Pressurized Water Reactor Owners Group

DEB:CMH:rfn

Enclosures 1

cc: PWROG Management Committee
PWROG Licensing Subcommittee
PWROG Project Management Office
R.E. Schneider – Westinghouse
P.J. Hijeck - Westinghouse
R.J. Schomaker – AREVA NP
J.D. Andrachek – Westinghouse
J.A. Gresham – Westinghouse

RESPONSE TO REQUEST #2 FOR ADDITIONAL INFORMATION REGARDING

TOPICAL REPORT (TR) WCAP-16125-NP, REVISION 1

"JUSTIFICATION FOR RISK-INFORMED MODIFICATIONS TO SELECTED

TECHNICAL SPECIFICATIONS FOR CONDITIONS LEADING TO EXIGENT

PLANT SHUTDOWN"

PRESSURIZED WATER REACTOR OWNERS GROUP (PWROG)

NRC Question #11

11. A 72-hour CT is proposed to apply to TS 3.6.6A for the condition with two of two CS trains inoperable. TS 3.6.6A is applicable to plants which credit iodine removal from their CS system. Therefore, the proposed CT is not consistent with the 24-hour CT proposed for inoperabilities of two trains of a system credited for iodine removal (i.e., SBEACS, ICS, PREACS, and CREACS). Further, no defense-in-depth measures are proposed for operability of these other systems, which are identified in the TR as providing a similar function to the CS for iodine removal. The staff would consider a 24-hour CT for two inoperable CS trains, provided the TS also required operability of the other systems for iodine removal (SBEACS, ICS, PREACS, and CREACS) for defense-in-depth. Propose a 24-hour alternative to the 72-hour CT which includes appropriate compensatory measures.

PWROG Response to Question #11

From an iodine removal perspective, operation of fan coolers is expected to provide iodine removal via the impact of condensation of water in the containment atmosphere and the impact of the Containment Air Recirculation Coolers (CARCs). Using advanced source term methods, one CE plant no longer relies on containment sprays for either post-LOCA heat removal or iodine removal. For purposes of consistency Westinghouse Electric Company (WEC) will adjust its request for the CE PWRs to limit the TS 3.6.6.A CT for 2 spray trains out of service to 24 hours. During this condition at least one train of Containment Air Coolers must be operable. Furthermore, as a defense in depth action, a TS requirement will be added to confirm operability of the CREACS. The operable containment air coolers will maintain containment pressure, thus limiting containment leakage. Availability of the CREACS will mitigate the consequences of the reduction in post accident iodine removal to the control room and therefore help maintain functionality of the control room following a severe core damage event and minimize the risk of needing control room countermeasures.

As a result of the short duration of the outage and operability of the containment air coolers, the impact on core damage and large early release risk metrics is negligible. Thus, additional technical specification actions are not considered necessary. However, in addition to the TS requirement, Maintenance Rule risk assessment guidance will identify the importance of other plant iodine removal systems (e.g., SBEACS, ICS, and PREACS, as appropriate for the plant.). This change will be reflected in the final submittal of WCAP-16125-NP-A, Revision 2.

NRC Question #12

12. An 8-hour CT is proposed to apply to TS 3.6.6A and 3.6.6B when 3 or more containment heat removal trains are inoperable. Currently, this condition requires an immediate plant shutdown. As identified in the TR, this condition represents a loss of the containment heat removal function, and also fails the ECCS function during the recirculation phase due to overheating of the sump water. No compensatory measures to provide the containment heat removal function are identified. Because the condition fails functions associated with post-accident decay heat removal with no compensatory measures established to achieve the functions, the change is not consistent with other changes in the TR and not acceptable as proposed. Propose deletion of this change from the TR.

PWROG Response to Question #12

This TS will be removed from the requested CT extensions.

NRC Question #13

13. For TS 3.7.11, the TR proposes a new action requirement to implement mitigating actions to address chemical and toxic gas releases, smoke, and other hazards. The staff considers such actions to be plant-specific, requiring specific staff review to assure acceptability. A generic approval of the action is not considered to be acceptable. Propose that this new action be addressed on a plant-specific basis.

PWROG Response to Question #13

Specification 3.7.11, Control Room Emergency Air Cleanup System (CREACS), currently contains actions for an inoperable barrier that renders all CREACS trains inoperable. However, the Topical Report focused on the radiological impact of the inoperability of this system for a period of 24 hours. While the Condition discussed in the Topical Report is for an equipment inoperability which may partially or fully disable the CREACS, the function of the CREACS is also defeated by a loss of the control room envelope. This later Condition currently requires implementation of mitigating actions and verification that the mitigating actions ensure control room envelope occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. This action was approved on a generic basis by the NRC as TSTF-448, "Control Room Habitability," and published in the Federal Register on January 17, 2007. The mitigating actions are described in the Bases as follows: "During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will

ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be pre-planned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions." The specific actions taken under this Required Action are left to licensee control. If the licensee verifies that the control room envelope occupants are protected, 90 days are provided to restore the boundary and the supported CREACS trains to Operable status.

WCAP-16125 proposes the same mitigating actions be implemented immediately when the CREACS trains are inoperable for reasons other than an inoperable boundary. The Topical Report proposes that a 24 hour Completion Time be provided in this condition.

Given that TSTF-448 allows the use of licensee controlled mitigating actions to protect the control room occupants from radiological, chemical, and smoke hazards for a period of 90 days when both CREACS trains are inoperable due to an inoperable barrier, we believe that the generic Completion Time extension of 24 hour for two inoperable CREACS trains, for less hazardous conditions, is reasonable. For plants that have not adopted TSTF 448, additional plant specific justification will be required. The above discussion will be added to the Topical Report to support the CT extension request.

ATTACHMENT: E-Mail Transmittal of RAIs

From: Cruz, Holly
To: Holderbaum, Chad M.
Sent: Mon Jun 08 11:23:17 2009
Subject: REQUESTS FOR ADDITIONAL INFORMATION - TR WCAP-16125 REV. 2 (Nos. 11-13)
Chad,

Please find the additional RAIs noted below, and advise when you think the PWROG will be able to respond.

11. A 72-hour CT is proposed to apply to TS 3.6.6A for the condition with two of two CS trains inoperable. TS 3.6.6A is applicable to plants which credit iodine removal from their CS system. Therefore, the proposed CT is not consistent with the 24-hour CT proposed for inoperabilities of two trains of a system credited for iodine removal (i.e., SBEACS, ICS, PREACS, and CREACS). Further, no defense-in-depth measures are proposed for operability of these other systems, which are identified in the TR as providing a similar function to the CS for iodine removal. The staff would consider a 24-hour CT for two inoperable CS trains, provided the TS also required operability of the other systems for iodine removal (SBEACS, ICS, PREACS, and CREACS) for defense-in-depth. Propose a 24-hour alternative to the 72-hour CT which includes appropriate compensatory measures.

12. An 8-hour CT is proposed to apply to TS 3.6.6A and 3.6.6B when 3 or more containment heat removal trains are inoperable. Currently, this condition requires an immediate plant shutdown. As identified in the TR, this condition represents a loss of the containment heat removal function, and also fails the ECCS function during the recirculation phase due to overheating of the sump water. No compensatory measures to provide the containment heat removal function are identified. Because the condition fails functions associated with post-accident decay heat removal with no compensatory measures established to achieve the functions, the change is not consistent with other changes in the TR and not acceptable as proposed. Propose deletion of this change from the TR.

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Thanks for your help,

Holly

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