



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

October 16, 2019

LICENSEE: Union Electric Company

FACILITY: Callaway Plant, Unit 1

SUBJECT: SUMMARY OF SEPTEMBER 12, 2019, MEETING WITH UNION ELECTRIC COMPANY REGARDING CLOSURE OF GENERIC LETTER 2004-02 FOR CALLAWAY PLANT, UNIT 1 (EPID L-2019-LRM-0057)

On September 12, 2019, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Union Electric Company (the licensee) at NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss the future license amendment request (LAR) for Callaway Plant, Unit 1 to support a closure path for Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors." The meeting notice and agenda, dated August 22, 2019, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML19234A234. A list of attendees is enclosed.

The licensee's meeting slides (ADAMS Accession No. ML19254B432) presented the technical methodology, the testing and analysis, and the risk assessment which will support the future submittal.

The NRC staff discussed with the licensee that the future LAR should consider the following sufficiency items as part of the upcoming submittal; specifically, that the licensee should:

1. Clarify that Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on PWR [Pressurized-Water Reactor] Sump Performance," is not a regulatory requirement but that the LAR is a submittal related to the closure of GL 2004-02.
2. Justify the use of the inactive sump as a holdup volume if applicable to the submittal's technical evaluation.
3. Document in the LAR how RMI¹ was accounting for in the amendment's testing.
4. Document and justify transport of debris into the pit during all phases of the scenarios presented.
5. Document and justify that the strainers are completely submerged prior to and at the start of recirculation.

¹ Callaway's steam generator utilizes reflective metal insulation (RMI) which can be transported to the sump and become bridged with fiber resulting in a reduced area debris bed.

6. Completely explain what is meant by first isolation valve (e.g., a valve that is always closed or an automatically closing valve)
7. Fully document and detail in the LAR that 300 pounds of fine fiber was tested for transport to the strainer in order to establish the debris limit, and that a margin of 50 pounds of fine fiber was added to the generated and transported debris determined by analysis for each break, in order to conservatively identify the population of critical breaks.
8. Document that the bounding transport fraction (determined by evaluating four different break locations) is presented for each type of debris and was used/applied to evaluate all scenarios in the amendment.
9. Justify how the “Min-K” panels were determined not to be an impingent factor for high-energy line breaks.
10. Fully describe and explain in the LAR the interaction between calcium leached from fiberglass insulation and the trisodium phosphate buffer.
11. Justify the amendment’s selection of coatings surrogate debris size distribution.
12. Submit head loss data from any testing done for the application.
13. Document in the submittal whether any credit is taken for operator actions – such as for sump swap-over and cold leg injection for safety injection.
14. Document the use of the reactor pressure vessel and the pressurizer skirt treatment as a robust barrier.
15. In future meetings before the amendment’s submittal, discuss with NRC staff the effects of debris on in-vessel effects considering Callaway’s relatively short sump swap-over time and a relatively high in-vessel debris amount.
16. Provide the details of, and the extent to which, the LAR relies on the licensee’s probabilistic risk assessment in the analysis.
17. Provide justification for each scenario screened out of the evaluation and include consideration of the impact of all hazards (i.e., seismic, fire, flood, etc.) on the proposed change.
18. Justify, for the structural evaluation, any stress ratios greater than 1 and address pipe whip and jet impingement.
19. Document and justify any back-flushing credits applicable to the amendment’s analysis.
20. Address performance monitoring (Key Principle 5 in Regulatory Guide 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” Revision 3, January 2018; ADAMS Accession No. ML17317A256) as part of the risk evaluation in addition to the other key principles in Regulatory Guide 1.174, Revision 3.

Members of the public were in attendance. Public Meeting Feedback forms were not received.

Please direct any inquiries to me at 301-415-5136 or John.Klos@nrc.gov.

/RA/

John Klos, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure:
List of Attendees

cc: Listserv

LIST OF ATTENDEES

SEPTEMBER 12, 2019, MEETING WITH UNION ELECTRIC COMPANY

CLOSURE PATH FOR GENERIC LETTER 2004-02

Name	Organization
Roger Andreasen	Union Electric Company (UEC)
Tom Elwood	UEC
Luke Bockewitz	Serco, Inc.
Bruce Letellier	Serco, Inc.
Roger Wink	UEC
Stephanie Banker	UEC
James Kovar	UEC
Justin Hiller	UEC
Dan Hoang	U.S. Nuclear Regulatory Commission (NRC)
Steve Smith	NRC
Paul Klein	NRC
Shilp Vasavada	NRC
Andrea Russell	NRC
Keith Tetter	NRC
Mehdi Reisi-Fard	NRC
Roger Kalikian	NRC
Matt Yoder	NRC
Haifeng Li	Public (Enercon Services)
John Harris	Public (Wolf Creek Plant)
Steve Meyer	Public (Stars Alliance)

Enclosure

SUBJECT: SUMMARY OF SEPTEMBER 12, 2019, MEETING WITH UNION ELECTRIC COMPANY REGARDING CLOSURE OF GENERIC LETTER 2004-02 FOR CALLAWAY PLANT, UNIT 1 (EPID L-2019-LRM-0057) DATED OCTOBER 16, 2019

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JJohnston, NRR

DHoang, NRR

SSmith, NRR

PKlein, NRR

SVasavada, NRR

ARussell, NRR

KTetter, NRR

MReisiFard, NRR

RKalikian, NRR

MYoder, NRR

MMcCoppin, EDO TA

JQuichocho, EDO RIV

ADAMS Accession No.: ML19268A977

*** by email**

OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NRR/DE/ESEB/BC*
NAME	JKlos	PBlechman (JBurkhardt for)	JColaccino
DATE	9/25/2019	10/1/2019	10/15/2019
OFFICE	NRR/DMLR/MCCB/BC*	NRR/DRA/APLB/TL(A)*	NRR/DSS/STSB/BC*
NAME	SBloom	SVasavada	VCusumano
DATE	10/10/2019	10/10/2019	10/10/2019
OFFICE	NRR/DMLR/MPHB/BC(A)*	NRR/DORL/LPL4/BC	NRR/DORL/LPL4/PM
NAME	ABuford	RPascarelli	JKlos
DATE	10/10/2019	10/11/2019	10/16/2019

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