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UNION ELECTRIC

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ULNRC-3552

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT
10CFR50.46 THIRTY DAY REPORT-
ECCS EVALUATION MODEL REVISIONS

Attachment 1 to this letter describes a change to the Westinghouse ECCS Large Break Loss of Coolant Accident (LBLOCA) Evaluation Model which has been implemented for Callaway during the time period from November 1996 to March 1997. Attachment 2 provides an ECCS Evaluation Model Margin Assessment which accounts for the peak cladding temperature (PCT) change resulting from the resolution of the issue described in Attachment 1 as it applies to Callaway. References 1-10, listed below, include prior 10CFR50.46 reports.

The small break LOCA table included in Attachment 2 remains unchanged from that submitted in Reference 10 and is enclosed here for completeness only. Based on the criteria and reporting requirements of 10CFR50.46(a)(3)(ii), as clarified in Section 5.1 of WCAP-13451 "Westinghouse Methodology for Implementation of 10CFR50.46 Reporting," the cumulative changes since the last LBLOCA 30-day report, Reference 6, are significant and

require a new 30-day report. Since the PCT value determined in the large break LOCA analysis of record, when combined with all PCT margin allocations, remains well below the 2200°F regulatory limit, no reanalysis is planned by Union Electric.

Should you have any questions regarding this letter, please contact us.

Very truly yours,

Donald F. Schnell

GGY/jdg

Attachments

References:
1) ULNRC-2141 dated 1-19-90
2) ULNRC-2373 dated 2-28-91
3) ULNRC-2439 dated 7-19-91
4) ULNRC-2664 dated 7-16-92
5) ULNRC-2822 dated 7-15-93
6) ULNRC-2892 dated 10-22-93
7) ULNRC-3087 dated 10-19-94
8) ULNRC-3101 dated 11-23-94
9) ULNRC-3295 dated 11-22-95
10) ULNRC-3499 dated 11-27-96

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ATTACHMENT ONE

CHANGES TO THE WESTINGHOUSE

ECCS EVALUATION MODELS

ECCS EVALUATION MODEL CHANGES AND CORRECTIONS

1. LARGE BREAK LOSS OF COOLANT ACCIDENT (LBLCOA) TRANSLATION OF FLUID CONDITIONS FROM SATAN TO LOCTA

An error was discovered in the coding related to the translation of fluid conditions between the SATAN blowdown hydraulics code and the LOCTA code used for subchannel analysis of the fuel rods. In performing axial interpolations to translate the SATAN fluid conditions onto the mesh nodalization used by the LOCTA code, the length of the lower core channel fluid connection to the lower plenum node was incorrectly calculated. This correction is a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451. Representative plant calculations with the corrected model demonstrated that this correction resulted in an estimated LBLOCA PCT penalty of +15°F.

2. SMALL BREAK LOSS OF COOLANT ACCIDENT (SBLOCA)

None

ATTACHMENT TWO

ECCS EVALUATION MODEL

MARGIN ASSESSMENT FOR CALLAWAY

LARGE BREAK LOCA

A.	ANALYSIS OF RECORD	PCT = 2014°F
B.	1989 LOCA MODEL ASSESSMENTS (refer to ULNRC-2141 dated 1-19-90)	+ 10°F
C.	1990 LOCA MODEL ASSESSMENTS (refer to ULNRC-2373 dated 2-28-91)	+ 0°F
D.	1991 LOCA MODEL ASSESSMENTS (refer to ULNRC-2439 dated 7-19-91)	+ 10°F
E.	1992 LOCA MODEL ASSESSMENTS, MARGIN ALLOCATIONS, AND SAFETY EVALUATIONS (refer to ULNRC-2664 dated 7-16-92 and ULNRC-2892 dated 10-22-93)	+ 29°F
F.	1993 LOCA MODEL ASSESSMENTS (refer to ULNRC-2822 dated 7-15-93 and ULNRC-2892 dated 10-22-93)	- 65°F
G.	1994 LOCA MODEL ASSESSMENTS (refer to ULNRC-3087 dated 10-19-94 and ULNRC-3101 dated 11-23-94)	- 6°F
H.	1995 LOCA MODEL ASSESSMENTS (refer to ULNRC-3295 dated 11-22-95)	+ 39°F
I.	1996 LOCA MODEL ASSESSMENTS (refer to ULNRC-3499 dated 11-27-96)	+ 0°F
J.	CURRENT LOCA MODEL ASSESSMENTS - MARCH 1997	
	1. TRANSLATION OF FLUID CONDITIONS FROM SATAN TO LOCTA	+ 15°F

LICENSING BASIS PCT + MARGIN ALLOCATIONS	=	2046°F
ABSOLUTE MAGNITUDE OF MARGIN ALLOCATIONS SINCE LAST LBLOCA 30-DAY REPORT (ULNRC-2892); THEREFORE, THIS MUST BE A 30-DAY REPORT SINCE THE 50°F THRESHOLD HAS BEEN EXCEEDED.	=	60°F

SMALL BREAK LOCA

A.	ANALYSIS OF RECORD	PCT = 1528°F
B.	1989 LOCA MODEL ASSESSMENTS (refer to ULNRC -2141 dated 1-19-90)	+ 229°F
C.	1990 LOCA MODEL ASSESSMENTS (refer to ULNRC-2373 dated 2-28-91)	+ 0°F
D.	1991 LOCA MODEL ASSESSMENTS (refer to ULNRC-2439 dated 7-19-91)	+ 0°F[1]
E.	1991 LOCA MODEL ASSESSMENTS AND SAFETY EVALUATIONS (refer to ULNRC-2664 dated 7-16-92)	+ 0°F
F.	1993 LOCA MODEL ASSESSMENTS (refer to ULNRC-2892 dated 10-22-93)	- 13°F[2]
G.	1993 SAFETY EVALUATIONS (refer to ULNRC-2822 dated 7-15-93)	+ 4°F[3]
H.	BURST AND BLOCKAGE/TIME IN LIFE (This PCT assessment is tracked separately since it will change depending on future margin allocations.)	+ 0°F[1]
I.	1994 LOCA MODEL ASSESSMENTS (refer to ULNRC-3087 dated 10-19-94 and ULNRC-3101 dated 11-23-94)	- 282°F[4]
J.	1995 LOCA MODEL ASSESSMENTS (refer to ULNRC-3295 dated 11-22-95)	+ 0°F

SMALL BREAK LOCA (cont.)

K.	1996 LOCA MODEL ASSESSMENTS - (refer to ULNRC-3499 dated 11-27-96)	+ 40°F*

LICENSING BASIS PCT + MARGIN ALLOCATIONS	= 1506°F
ABSOLUTE MAGNITUDE OF MARGIN ALLOCATIONS SINCE LAST SBLOCA 30-DAY REPORT (ULNRC-3101)	= 30°F*

* Per Section 3.5 of WCAP-13451, intentional changes to plant input parameters evaluated per 10 CFR50.59 (such as the +10°F penalty for the reduced feedwater temperature evaluation) are not tracked against the 10 CFR50.46 reporting requirements related to a significant change (i.e., > 50°F).

NOTES:

1. See Attachment 1 to ULNRC-3101. The 1991 assessments have been eliminated as a result of the new SBLOCTA calculation. The Small Break Burst and Blockage penalty is a function of the base PCT plus margin allocations and has been reduced to 0°F since the total PCT has been reduced to a value below that at which burst would occur.

2. Addendum 2 to WCAP-10054 has been submitted to NRC. It references the improved condensation model (COSI) described in WCAP-11767 and provides justification for application of this model to small break LOCA calculations. Union Electric tracks the Peak Cladding Temperature (PCT) change reported in ULNRC-2892 (+150°F/-150°F) as a permanent change to Callaway's calculated PCT. See WCAP-10054, Addendum 2, "Addendum to the Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code: Safety Injection into the Broken Loop and COSI Condensation Model," August 1994.

3. +4.0°F Cycle 6 CRUD Deposition penalty will be carried until such time as it is determined to no longer apply.

4. Based on the limiting case clad heatup reanalysis with axial offset reduced from 30% to 20%, as discussed in ULNRC-3101.