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Constellation Energy
Nuclear Generation Group

February 10, 2009

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: **R.E. Ginna Nuclear Power Plant**
Docket No. 50-244

10 CFR 50.46 Annual ECCS Report

References: (a) Westinghouse Letter LTR-LIS-09-83, Subject: 10CFR50.46 Annual Notification and Reporting for 2008, dated January 29, 2009

In accordance with the requirements in 10 CFR 50.46 paragraph (a)(3)(ii), this annual Emergency Core Cooling System (ECCS) report is hereby submitted by R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC). Westinghouse, the provider of LOCA analysis services for the R.E. Ginna Nuclear Power Plant, has provided an update to the peak cladding temperature (PCT) margin in Reference (a).

Enclosed please find Attachment 1, "Westinghouse LOCA [loss of coolant accident] Evaluation Model Changes," which is the 2008 annual report of corrections to the R.E. Ginna Nuclear Power Plant ECCS Evaluation Models. This report summarizes changes made to both the large break LOCA (LBLOCA) and small break LOCA (SBLOCA) analyses. The SBLOCA and LBLOCA Peak Clad Temperature (PCT) Assessment Sheets are enclosed as Attachment 2.

If you should have any questions regarding this submittal, please contact David Wilson at (585) 771-5219.

Very truly yours,

Joseph E. Pacher

Attachment: (1) Westinghouse LOCA Evaluation Model Changes
(2) LBLOCA and SBLOCA Peak Clad Temperature Assessment Sheets

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cc: S. J. Collins, NRC
D. V. Pickett, NRC
Resident Inspector, NRC

ATTACHMENT (1)

Westinghouse LOCA Evaluation Model Changes

ERRORS IN REACTOR VESSEL LOWER PLENUM SURFACE AREA CALCULATIONS (Non-Discretionary Change)

Background

Two errors were discovered in the calculations of reactor vessel lower plenum surface area. The corrected values have been evaluated for impact on current licensing-basis analysis results and will be incorporated on a forward-fit basis. These changes represent a closely-related group of Non- Discretionary Changes in accordance with Section 4.1.2 of WCAP-13451.

Affected Evaluation Model(s)

1981 Westinghouse Large Break LOCA Evaluation Model with BASH
1985 Westinghouse Small Break LOCA Evaluation Model with NOTRUMP

Estimated Effect

The differences in vessel lower plenum surface area are relatively minor and would be expected to produce a negligible effect on large and small break LOCA analysis results, leading to an estimated PCT impact of 0°F for 10 CFR 50.46 reporting purposes.

DISCREPANCY IN METAL MASSES USED FROM DRAWINGS (Non-Discretionary Change)

Background

Discrepancies were discovered in the use of metal masses from drawings. The updated reactor vessel metal masses and fluid volumes have been evaluated for impact on current licensing-basis analysis results and will be incorporated on a forward-fit basis. These changes represent a closely-related group of Non-Discretionary Changes in accordance with Section 4.1.2 of WCAP-13451.

Affected Evaluation Model(s)

1981 Westinghouse Large Break LOCA Evaluation Model with BASH
1985 Westinghouse Small Break LOCA Evaluation Model with NOTRUMP

Estimated Effect

The differences in the reactor vessel metal mass and fluid volume are relatively minor and would be expected to produce a negligible effect on large and small break LOCA analysis results, leading to an estimated PCT impact of 0°F for 10 CFR 50.46 reporting purposes.

GENERAL CODE MAINTENANCE
(Discretionary Change)

Background
Various changes have been made to enhance the usability of the codes and to help preclude errors in analyses. This includes items such as modifying input variable definitions, units, and defaults; improving the input diagnostic checks; enhancing the code output; optimizing active coding; and, eliminating inactive coding. These changes represent Discretionary Changes that will be implemented on a forward-fit basis in accordance with Section 4.1.1 of WCAP-13451.

Affected Evaluation Model(s)
1981 Westinghouse Large Break LOCA Evaluation Model with BASH
1985 Westinghouse Small Break LOCA Evaluation Model with NOTRUMP

Estimated Effect
The nature of these changes leads to an estimated PCT impact of 0°F.

GENERAL CODE MAINTENANCE
(Discretionary Change)

Background
A number of coding changes were made as part of normal code maintenance. Examples include additional information in code outputs, improved automation and diagnostics in the codes, increased code dimensions, and general code cleanup. All of these changes are considered to be Discretionary changes in accordance with Section 4.1.1 of WCAP-13451.

Affected Evaluation Model(s)
1996 Westinghouse Best Estimate Large Break LOCA Evaluation Model
1999 Westinghouse Best Estimate Large Break LOCA Evaluation Model, Application to PWRs with Upper Plenum Injection
2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM

Estimated Effect
The nature of these changes leads to an estimated PCT impact of 0°F for 10 CFR 50.46 reporting purposes.

HOTSPOT BURST TEMPERATURE LOGIC ERRORS
(Non-Discretionary Change)

Background
The HOTSPOT code has been updated to incorporate the following corrections to the burst temperature logic: (1) change the rod internal pressure used to calculate the cladding engineering hoop stress from the value in the previous time step to the value in the current time step; (2) revise the average cladding heatup rate calculation to reset selected variables to zero at the beginning of each trial and use the instantaneous heat-up rate when fewer than five values are available; and, (3) reflect the assumed saturation of ramp rate effects above 28°C/s for Zircaloy-4 cladding from Equation 7-66 of Reference 1. These changes represent a closely-related group of Non-Discretionary Changes in accordance with Section 4.1.2 of WCAP-13451.

Affected Evaluation Model(s)
1996 Westinghouse Best Estimate Large Break LOCA Evaluation Model
1999 Westinghouse Best Estimate Large Break LOCA Evaluation Model, Application to PWRs with Upper Plenum Injection
2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM

Estimated Effect
Sample calculations for each change showed no effect on peak cladding temperature, leading to an estimated impact of 0°F for 10 CFR 50.46 reporting purposes.

Reference(s)
1. WCAP-12945-P-A, Volume 1 (Revision 2) and Volumes 2-5 (Revision 1), "Code Qualification Document for Best Estimate LOCA Analysis," S. M. Bajorek et al., March 1998.

LOWER PLENUM UNHEATED CONDUCTOR
(Non-Discretionary Change)

Background
A modeling discrepancy was discovered in the lower plenum of the RGE Analysis of Record (AOR) vessel model. This discrepancy resulted in the under-prediction of the metal mass in the lower plenum. This change represents a non-discretionary change in accordance with Section 4.1.2 of WCAP-13451.

Affected Evaluation Model(s)
2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM

Estimated Effect
Based on a plant-specific evaluation, the estimated impact of the lower plenum metal mass under-prediction on the AOR peak cladding temperature (PCT) is 0 °F.

ATTACHMENT (2)

LBLOCA and SBLOCA Peak Clad Temperature Assessment Sheets

R.E. Ginna Nuclear Power Plant, LLC
February 10, 2009

ATTACHMENT (2)

LBLOCA and SBLOCA Peak Clad Temperature Assessment Sheets

Westinghouse LOCA Peak Clad Temperature Summary for ASTRUM Best Estimate Large Break

Plant Name: R. E. Ginna
Utility Name: Constellation Generation Group
Revision Date: 1 /27/09

Analysis Information

EM:	ASTRUM (2004)	**Analysis Date:**	3/18/05	**Limiting Break Size:**	Split
FQ:	2.6	**FdH:**	1.72		
Fuel:	422 Vantage +	**SGTP (%):**	10		

Notes: Uprate to 1811 MWt (inclusive of calorimetric uncertainty) Effective beginning Cycle 33, Mixed Core OFA & 422 V+

	Clad Temp (°F)	Ref.	Notes
LICENSING BASIS			
Analysis-Of-Record PCT	1870	1	(a)
PCT ASSESSMENTS (Delta PCT)			
A. PRIOR ECCS MODEL ASSESSMENTS			
1 . HOTSPOT Fuel Relocation Error	37	2	
B. PLANNED PLANT MODIFICATION EVALUATIONS			
1 . None	0		
C. 2008 ECCS MODEL ASSESSMENTS			
1 . None	0		
D. OTHER			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	**PCT** = 1907		

References:

1 . RGE-05-32, "Transmittal of Input to Boron Concentration Increase and LOCA Methodology Change Tech Spec Amendment Submittal," April 2005
2 . LTR-LIS-07-388, "10 CFR 50.46 Reporting Text for HOTSPOT Fuel Relocation Error and Revised PCT Rackup Sheets for R. E. Ginna," June 2007

Notes:

(a) Transition cycles containing OFA fuel are bounded by the analysis for 422 V+ fuel.

Westinghouse LOCA Peak Clad Temperature Summary for Appendix K Small Break

Plant Name: R. E. Ginna
Utility Name: Constellation Generation Group
Revision Date: 1 /27/09

Analysis Information

EM:	NOTRUMP	**Analysis Date:**	4/21/05	**Limiting Break Size:**	2 inch, Hi Tavg
FQ:	2.6	**FdH:**	1.72		
Fuel:	422 Vantage +	**SGTP (%):**	10		

Notes: Uprate to 1811 MWt (inclusive of calorimetric uncertainty), Effective beginning Cycle 33, Mixed Core OFA & 422 V+

	Clad Temp (°F)	Ref.	Notes
LICENSING BASIS			
Analysis-Of-Record PCT	1167	1	(a)
PCT ASSESSMENTS (Delta PCT)			
A. PRIOR ECCS MODEL ASSESSMENTS			
1 . None	0		
B. PLANNED PLANT MODIFICATION EVALUATIONS			
1 . None	0		
C. 2008 ECCS MODEL ASSESSMENTS			
1 . None	0		
D. OTHER			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	**PCT** = 1167		

References:

1 . RGE-05-32, "Transmittal of Input to Boron Concentration Increase and LOCA Methodology Change Tech Spec Amendment Submittal," April 2005

Notes:

(a) Transition cycles containing OFA fuel are bounded by the analysis for 422 V+ fuel.