ATTACHMENT (1)

Westinghouse LOCA Evaluation Model Changes

GENERAL CODE MAINTENANCE
(Discretionary Change)

Background
Various changes have been made to enhance the usability of codes and to streamline future analyses. Examples of these changes include 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)
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.

RADIATION HEAT TRANSFER LOGIC
(Non-Discretionary Change)

Background
Two errors were discovered in the calculation of the radiation heat transfer coefficient in the SBLOCTA computer code. First, existing diagnostics did not preclude non-physical negative or large (negative or positive) radiation heat transfer coefficients from being calculated. These calculations occurred when the vapor temperature exceeded the cladding surface temperature or when the predicted temperature difference was less than 1 degree. Second, a temperature term incorrectly used degrees Fahrenheit instead of Rankine. These errors have been corrected in the SBLOCTA code and represent a closely-related group of Non-Discretionary Changes in accordance with Section 4.1.2 of WCAP-13451.

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

Estimated Effect
A combination of SBLOCTA sensitivity calculations and engineering judgment led to an estimated PCT effect of 0°F for existing Small Break LOCA analysis results.

MAXIMUM FUEL ROD TIME STEP LOGIC
(Non-Discretionary Change)

Background
An error was discovered in the SBLOCTA code that allowed the fuel rod time step to exceed the specified maximum allowable time step. The time step logic has been corrected in the SBLOCTA code. This change represents a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451.

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

Estimated Effect
A combination of SBLOCTA sensitivity calculations and engineering judgment led to an estimated PCT effect of 0°F for existing Small Break LOCA analysis results.

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)
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.

ATTACHMENT (2)

LBLOCA and SBLOCA Peak Clad Temperature Assessment Sheets

ATTACHMENT (2)
LBLOCA and SBLOCA Peak Clad Temperature Assessment Sheets

Westinghouse LOCA Peak Clad Temperature Summary for Appendix K Small Break

Plant Name: R. E. Ginna
Utility Name: Constellation Generation Group
Revision Date: 2/27/2012

Analysis Information

EM:	NOTRUMP	**Analysis Date:**	4/21/2005	**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. 2011 ECCS MODEL ASSESSMENTS			
1 . None	0		
D. OTHER*			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	**PCT =** 1167		

* It is recommended that the licensee determine if these PCT allocations should be considered with respect to 10 CFR 50.46 reporting requirements.

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.

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: 2/27/2012

Analysis Information

EM:	ASTRUM (2004)	**Analysis Date:**	3/18/2005	**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. 2011 ECCS MODEL ASSESSMENTS			
1 . None	0		
D. OTHER*			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	**PCT =** 1907		

* It is recommended that the licensee determine if these PCT allocations should be considered with respect to 10 CFR 50.46 reporting requirements.

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.