Westinghouse

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Your ref: Docket No. 52-006
Our ref: DCP_NRC_002943

June 30, 2010

Subject: 10 CFR 50.46 Thirty(30) Day Report for the AP1000 Standard Plant Design

Pursuant to 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water reactors," Westinghouse Electric Company is submitting this report to document any emergency core cooling system (ECCS) evaluation model changes or errors that affect the temperature calculation for the AP1000 Standard Plant Design. A 30 day report is required if the PCT error assessed is greater than 50°F.

This letter is to transmit 10 CFR 50.46 reporting information for errors discovered in the AP1000 Design Control Document (DCD) small-break loss of coolant accident (LOCA) analysis-of-record (AOR) for the Loss of Coolant Accident (LOCA) 10-inch Transient Adiabatic Heat-up Calculation.. While performing analyses to evaluate the AP1000 first core, errors were discovered in the Small-Break LOCA (SBLOCA) AOR. Westinghouse documented this in the Westinghouse Corrective Action Process system (CAPs) to track resolution of the errors. Calculations documenting the estimate of effect for these errors have been completed. 10 CFR 50.46 reporting information is attached with the revised rack-ups.

The 10-Inch Transient Adiabatic Heat up resulted in a PCT increase of 264°F for the Small Break Loss-of-Coolant Accident (SBLOCA). The peak cladding temperature (PCT) is 1634°F for the SBLOCA and does not exceed the 10 CFR 50.46 (b)(l) acceptance criterion of 2200°F. The summary of the updated PCT margin allocations and their bases are provided in Enclosure 1. Westinghouse submitted the initial 10 CFR 50.46 report for the AP1000 Standard Plant Design in letter DCP/NRC2074, dated February 15, 2008. The limiting peak clad temperature of 2158°F for the BELOCA has not changed since the issuance of DCP/NRC2074.

The information included in this letter is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and Design Certification Amendment Application. By copy of this letter, COL Applicants are hereby notified of any changes or errors in the AP1000 Standard Design PCT as required by 10 CFR 50.46(a)(3)(iii).

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NRO

Questions or requests for additional information related to content and preparation of this information should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of letter.

Very truly yours,

for/ John DeBlasio

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Strategy

/Enclosure

1. 10 CFR 50.46 Thirty (30)Report

cc:	D. Jaffe	-	U.S. NRC	1E
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ENCLOSURE 1

10 CFR 50.46 Report

Attachment

AP1000 SBLOCA 10-INCH TRANSIENT ADIABATIC HEAT-UP CALCULATION (Non-Discretionary Change)

Background
Incorrect inputs were found to have been utilized in the calculation as the adiabatic rod heat-up during the 10-inch break analysis of the AP1000. The first error was related to inconsistent units being utilized in the equation for the rod average power. The second error was the usage of an incorrect cross-sectional area term to represent the cladding in the adiabatic heat-up calculation. These changes represent Non-Discretionary changes in accordance with Section 4.1.2 of WCAP-13451.

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

Estimated Effect
The estimated effect of these changes on the Adiabatic Rod heat-up for the 10-inch break is an increase in Peak Cladding Temperature of 264 °F.

Westinghouse LOCA Peak Clad Temperature Summary for Appendix K Small Break

Plant Name: AP1000
Utility Name: Westinghouse Nuclear Power Plants
Revision Date: 6/29/2010

Analysis Information

EM:	NOTRUMP-AP	**Analysis Date:**	8/23/2002	**Limiting Break Size:**	10 Inch
FQ:	2.6	**FdH:**	1.65		
Fuel:	RFA	**SGTP (%):**	10		

Notes:

	Clad Temp (°F)	Ref.	Notes
LICENSING BASIS			
Analysis-Of-Record PCT	**1370**	**1**	**(a)**
PCT ASSESSMENTS (Delta PCT)			
A. PRIOR ECCS MODEL ASSESSMENTS			
1 . None	0		
B. PLANNED PLANT MODIFICATION EVALUATIONS			
1 . None	0		
C. 2010 ECCS MODEL ASSESSMENTS			
1 . Adiabatic Heat-up Calculation	264	2	(a)
D. OTHER*			
1 . None	0		
LICENSING BASIS PCT + PCT ASSESSMENTS	**PCT =** 1634		

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

Reference:

1 . APP-GW-GL-700, Tier 2, Chapter 15, Rev. 3, "Design Certification Document: Accident Analysis" March 2003.

Notes:

(a) This is an adiabatic heat-up calculated PCT.