ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9101030099 DOC.DATE: 90/12/20 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
PLUNKETT,T.F. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards acceptance criteria for ECCS in light water nuclear power reactors for period 891017-901026.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: OR Submittal: General Distribution

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-2 LA	1	1	PD2-2 PD	1	1
	AULUCK,R	2	2			
INTERNAL:	NRR/DET/ECMB 9H	1	1	NRR/DET/ESGB	1	1
	NRR/DOEA/OTSB11	1	1	NRR/DST 8E2	1	1
	NRR/DST/SELB 8D	1	1	NRR/DST/SICB 7E	1	1
	NRR/DST/SRXB 8E	1	1	NUDOCS-ABSTRACT	1	1
	OC/LEMB	1	0	OGC/HDS2	1	0
	REG FILE 01	1	1	RES/DSIR/EIB	1	1
EXTERNAL:	NRC PDR	1	1	NSIC	1	1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 18 ENCL 16

RIDS/ADDS

RIDS/ADDS

MA-4

P.O. Box 029100, Miami, FL, 33102-9100

FPL

DEC 20 1990

L-90-434
10 CFR 50.46

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems In Light Water Nuclear Power Reactors" - Annual Report

Gentlemen:

10 CFR 50.46(a) (3)(ii) requires that licensees report to the Commission at least annually the nature of changes to or errors discovered in the emergency core cooling system (ECCS) evaluation models, or in the application of such models, that affect the peak clad temperature calculation, and their effect on the limiting ECCS analysis. Florida Power and Light Company's report for Turkey Point Units 3 and 4 for the period October 17, 1989 through October 26, 1990 is attached.

Should there be any questions, please contact us.

Very truly yours,

T. F. Plunkett by R. D. Pearce

T. F. Plunkett
Vice President
Turkey Point Plant Nuclear

Attachment

TFP/RJT/rjt

cc: Stewart D. Ebneter, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

A001
1/1

ATTACHMENT

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems In Light Water Nuclear Power Reactors" - Annual Report

By letter L-89-422 dated December 20, 1989, Florida Power and Light Company (FPL) reported a peak clad temperature of 2144°F in the event of a worst case large break LOCA (LBLOCA) transient. This value included a calculated temperature of 2051°F plus 93°F increment due to reduced safety injection flow, increased containment spray flow, transition fuel core penalty, containment purge coincident with a LBLOCA, and increased steady-state pressurizer pressure uncertainty band.

Recent plant changes and corrections in LBLOCA coding have resulted in a further increase in the peak clad temperature for the worst case large break LOCA of 27°F for a total of 2171°F. This includes a 25°F increase due to LOCTA coding errors and a 2°F increase due to the insertion of stainless steel rods in reconstituted fuel assemblies.

By letter L-89-422, Florida Power and Light Company reported a peak clad temperature of 1989°F in the event of a worst case small break LOCA (SBLOCA) transient. This value included a calculated temperature of 1605°F plus 384°F increment increase due to delayed AFW Enthalpy Switchover, AFW initiation delay time, open blowdown sample lines, thimble plugs removal, increase in allowed containment temperature, increase in steady-state pressurizer uncertainty and transition core penalty.

Recent plant changes and corrections in SBLOCA coding have resulted in a further increase in the peak clad temperature for the worst case small break LOCA of 71°F for a total of 2060°F. This includes a 25°F increase due to SBLOCTA coding errors, 40°F increase due to a reduced fuel rod gap pressure, 4°F increase due to K(z) discrepancy, and a 2°F increase due to the insertion of stainless steel rods in reconstituted fuel assemblies.

The large break LOCA analysis as described in the FSAR was performed by Westinghouse in 1983 using the BART computer model without spacer grids.

The small break LOCA analysis as described in the FSAR was performed by Westinghouse in 1983 using the WFLASH computer code.

The revised peak clad temperatures of 2171°F for the worst case large break LOCA and 2060°F for the worst case small break LOCA correcting for the effects discussed herein and summarized in Tables 1 and 2 (enclosed) are below the limit of 2200°F as per the acceptance criteria in 10 CFR 50.46.

Westinghouse continues to work to resolve the generic issues related to their LOCA models. Issues which may impact Turkey Point's large break LOCA analyses are: (1) the top skewed axial power shapes, and (2) steam generator tube damage due to combined seismic and LOCA loads. Scoping analyses performed by Westinghouse have shown that the use of spacer grids in the BART model would provide enough PCT reduction to cover potential penalties caused by the above effects.

TABLE 1
TURKEY POINT UNITS 3 AND 4

PREDICTED PEAK CLAD TEMPERATURES

CURRENT LBLOCA EVALUATIONS
THAT HAVE ASSESSED PCT PENALTIES

Analysis of Record		2051°F
Evaluations specified in L-89-422		
3 HHSI TO 2 HHSI Pumps	9°F	
Increased Containment Spray Flow	15°F	
Reduced LHSI/RHR Flow	32°F	
Effect of Containment Purging	9°F	
Implementation of Debris Resistant FA	3°F	
Pressurizer Pressure Uncertainty	8°F	
Transition Core Penalty	10°F	
Further Reduced RHR Flow	7°F	
Total LBLOCA PCT specified in L-89-422		2144°F
Evaluations since issuance of L-89-422		
LOCTA Coding Errors	25°F	
Stainless Steel Rods - Cycle 12 Fuel	2°F	
Total Estimated LBLOCA PCT		**2171°F**

TABLE 2
TURKEY POINT UNITS 3 AND 4

PREDICTED PEAK CLAD TEMPERATURES

CURRENT SBLOCA EVALUATIONS
THAT HAVE ASSESSED PCT PENALTIES

Analysis of Record		1605°F
Evaluation specified in L-89-422		
Open Blowdown Sample Lines	19°F	
Thimble Plug Removal	21°F	
Increase in Allowed Containment Temperature	31°F	
Pressurizer Pressure Uncertainty	13°F	
Implementation of Debris Resistant FA	27°F	
Delayed AFW Enthalpy Switchover	223°F	
Increase in AFW Initiation Delay Time	50°F	
Total SBLOCA PCT specified in L-89-422		1989°F
Evaluations since issuance of L-89-422		
SBLOCTA Coding Errors	25°F	
Reduced Reload Gap Pressure	40°F	
Stainless Steel Rods - Cycle 12 Fuel	2°F	
Power Increase Due to K(z) Discrepancy	4°F	
Total Estimated SBLOCA PCT		2060°F