

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8105110244 DOC. DATE: 81/05/07 NOTARIZED: NO  
 FACIL: 50-361 San Onofre Nuclear Station, Unit 2, Southern California  
 50-362 San Onofre Nuclear Station, Unit 3, Southern California  
 AUTH. NAME: BASKIN, K.P. AUTHOR AFFILIATION: Southern California Edison Co.  
 RECIP. NAME: MIRAGLIA, F. RECIPIENT AFFILIATION: Licensing Branch 3

DOCKET #  
 05000361  
 05000362

SUBJECT: Forwards responses to Reactor Sys Branch questions re steam line break analysis, per NRC 810109 telcon request. Info will be incorporated into FSAR & directly distributed as part of Amend 25.

DISTRIBUTION CODE: B0015 COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6  
 TITLE: PSAR/FSAR AMDTS and Related Correspondence

NOTES: Send all FSAR & ER amends to L Chandler.  
 1 cy: J Hanchett (Region V). D Scaletti, 1 cy of all enviro info  
 Send all FSAR & ER amends to L Chandler.  
 1 cy: J Hanchett (Region V). D Scaletti, 1 cy of all enviro info

05000361

05000362

ACTION:	RECIPIENT	COPIES		RECIPIENT	COPIES		
	ID CODE/NAME	LTTR	ENCL		ID CODE/NAME	LTTR	ENCL
ACTION:	A/D LICENSNG	1	0	LIC BR #3 BC	1	0	
	LIC BR #3 LA	1	0	ROOD, H.	04	1	
INTERNAL:	ACCID EVAL BR26	1	1	AUX SYS BR	07	1	
	CHEM ENG BR	08	1	1	CONT SYS BR	09	1
	CORE PERF BR	10	1	1	EFF TR SYS BR	12	1
	EMERG PREP	22	1	0	EQUIP QUAL BR	13	3
	GEOSCIENCES	14	1	1	HUM FACT ENG BR		1
	HYD/GEO BR	15	2	2	I&C SYS BR	16	1
	I&E	06	3	3	LIC GUID BR		1
	LIC QUAL BR		1	1	MATL ENG BR	17	1
	MECH ENG BR	18	1	1	MPA		0
	NRC PDR	02	1	1	OELD		0
	OP LIC BR		1	1	POWER SYS BR	19	1
	PROC/TST REV	20	1	1	QA BR	21	1
	RAD ASSESS BR	22	1	1	REAC SYS BR	23	1
	REG FILE	01	1	1	SIT ANAL BR	24	1
STRUCT ENG BR	25	1	1				
EXTERNAL:	ACRS	27	16	16	LPDR	03	1
	NSIC	05	1	1			

MAY 12 1981

may

TOTAL NUMBER OF COPIES REQUIRED: LTTR 51 ENCL 51

RD

*Southern California Edison Company*

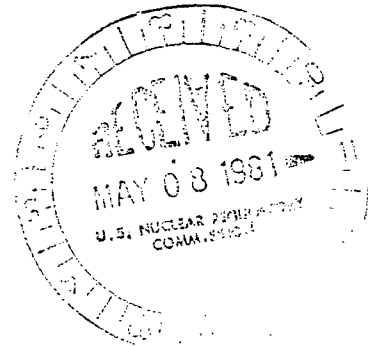
P. O. BOX 800  
2244 WALNUT GROVE AVENUE  
ROSEMEAD, CALIFORNIA 91770

K. P. BASKIN  
MANAGER OF NUCLEAR ENGINEERING,  
SAFETY, AND LICENSING

May 7, 1981

TELEPHONE  
(213) 572-1401

Director, Office of Nuclear Reactor Regulation  
Attention: Mr. Frank Miraglia, Branch Chief  
Licensing Branch No. 3  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555



Gentlemen:

Subject: Docket Nos. 50-361 and 50-362  
San Onofre Nuclear Generating Station  
Units 2 and 3

Enclosed are sixty-three (63) copies of responses to two additional Reactor Systems Branch questions concerning the San Onofre Units 2 and 3 Steam Line Break analysis. These additional questions were asked by your Mr. Jack Guttman in a January 9, 1981, telephone conversation with Mr. David Earles of Combustion Engineering, Inc., and these responses verify the acceptability of the Steam Line Break analysis results as discussed on page 15-15 of the SER, Section 15.3.1.

This information will be incorporated into the FSAR text, and direct distribution of this information will be made as part of the Amendment 25 distribution and will be in accordance with the service list provided by SCE's letter of October 29, 1979. An affidavit attesting to the fact that distribution has been completed will be provided within ten days of docketing of Amendment 21.

If you have any questions or comments concerning this information, please contact me.

Very truly yours,

*KP Baskin*

Enclosures

Boo/  
s  
1/1

8105110244.

A

STEAM LINE BREAK ANALYSIS

CONFIRMATORY EVALUATION

San Onofre Nuclear Generating Station

Units 2 & 3

Question 1: Do the steam line break (SLB) analyses presented in the FSAR bound the transient which would result if the operator (following I&E Bulletin 79-06C guidance) tripped the reactor coolant pumps (RCPs) following safety injection actuation signal (SIAS) due to low pressurizer pressure?

Response: Evaluation of the effects of shutting off RCPs at various times during the SLB transient indicates that RCP shutoff following SIAS due to low pressurizer pressure does not alter the conclusions presented in the FSAR.

The effect of RCP shutoff following SIAS is illustrated for a large SLB initiated at full load conditions by the reactivity and heat flux transients presented in Figures 1-1 and 1-2, respectively. In each figure, the transients presented in the FSAR-- no RCP coastdown (solid line) and RCP coastdown at time zero (dotted line)-- are provided together with the transient (dashed line) resulting from RCP coastdown initiated at the time which causes the maximum post-trip return to power: 20 seconds after initiation of the transient (SIAS occurs at 13 seconds). Figure 1-1 shows that the transient total reactivity is bounded by the case presented in the FSAR: RCP coastdown initiated at time zero. The timing of the reactivity peak causes the maximum post-trip heat flux (Figure 1-2) to be slightly higher for the transient resulting from RCP coastdown initiated at 20 seconds than for either of the cases presented in the FSAR. This difference in post-trip heat flux is not sufficient to alter the conclusions presented in the FSAR.

Question 2: How do SLB results calculated with the CESEC code version used for the SONGS FSAR compare with results obtained with the more detailed SLB version of CESEC (which was first used for SLB analyses done for Calvert Cliffs Unit 1 Cycle 5 reload)?

Response: Figure 2-1 presents a comparison between reactivities calculated for a SLB transient using the CESEC code version used for the SONGS FSAR with reactivities calculated using the more detailed SLB version of CESEC used for the SLB analyses done for the Calvert Cliffs Unit 1 Cycle 5 reload. The comparison was done for a large steam line break occurring during full load operation for a 2700 MWt plant, with reactor coolant pump trip assumed to occur following a safety injection actuation signal due to low pressurizer pressure. The results obtained using the two code versions are essentially the same.

FIGURE 1-1 COMPARISON OF STEAM LINE BREAK REACTIVITIES OBTAINED WITH DIFFERENT TIMES FOR INITIATION OF REACTOR COOLANT PUMP COASTDOWN

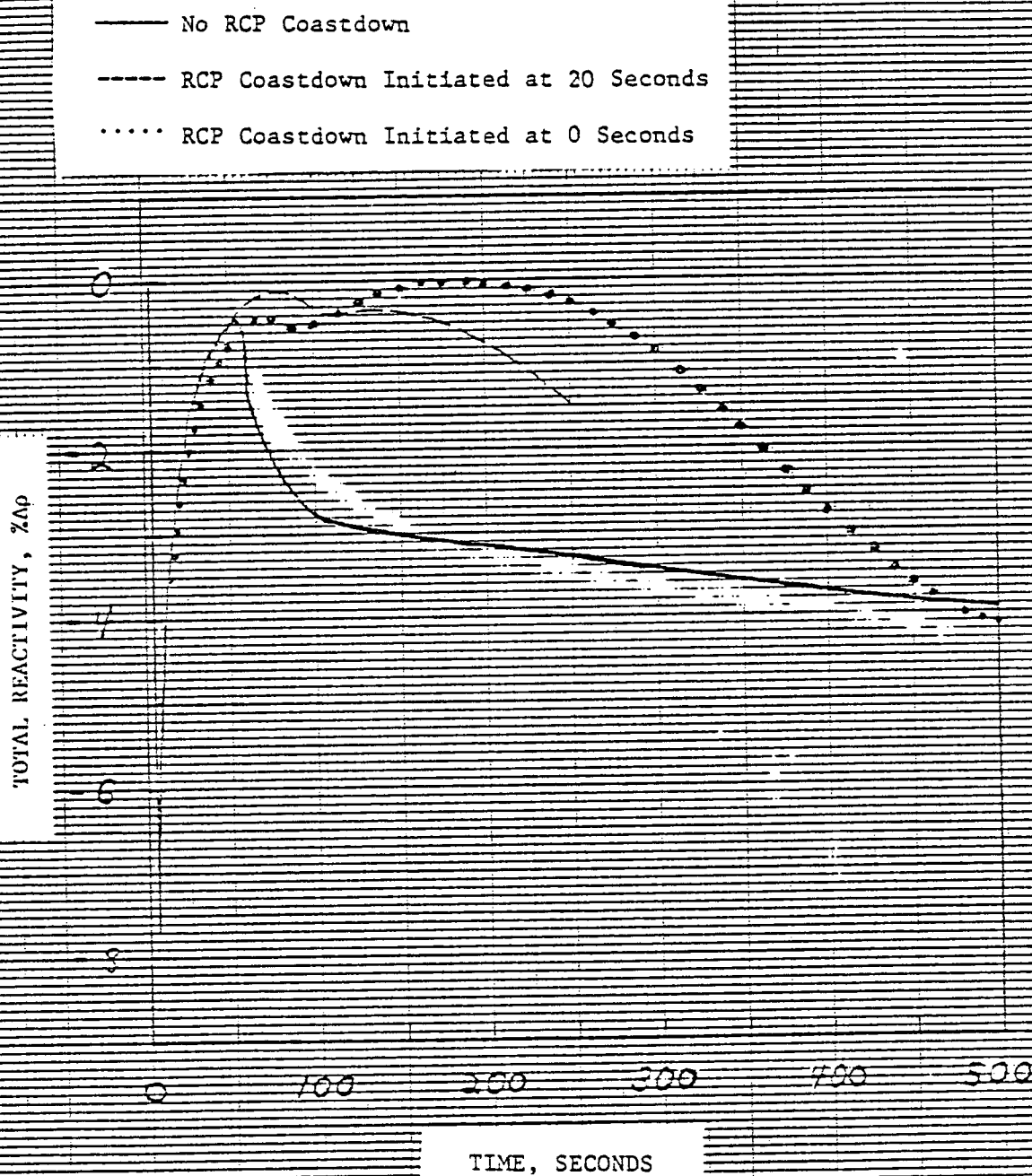


FIGURE 1-2 COMPARISON OF STEAM LINE BREAK HEAT FLUXES  
OBTAINED WITH DIFFERENT TIMES FOR  
INITIATION OF REACTOR COOLANT PUMP  
COASTDOWN

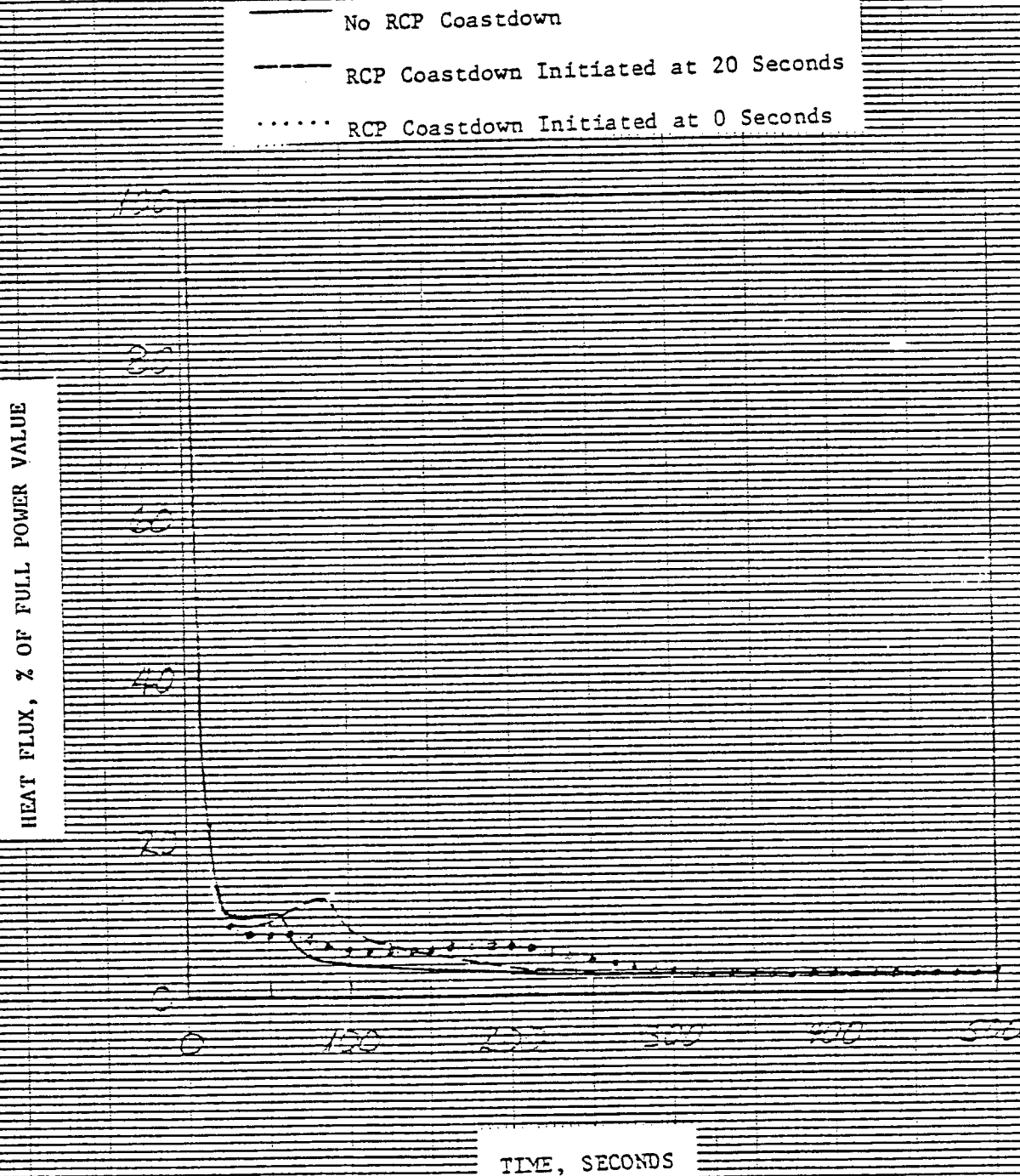


FIGURE 2-1 COMPARISON OF STEAM LINE BREAK REACTIVITIES OBTAINED WITH DIFFERENT CESEC VERSIONS

----- San Onofre FSAR Version

—— SLB Version Used for Calvert Cliffs Unit 1, Cycle 5 Reload

