March 17, 1997

MEMORANDUM	TO:	Thomas T.	Martin,	Director	
		Division	of Reacto	r Program	Management

FROM: Alfred E. Chaffee, Chief |Original signed by| Events Assessment and Generic Communications Branch Division of Reactor Program Management

OPERATING REACTORS EVENTS BRIEFING SUBJECT: MARCH 12. 1997 - BRIEFING 97-02

On March 12, 1997, we conducted an Operating Reactors Events Briefing (97-02) to inform senior managers from offices of the Commission, ACRS, AEOD, NRR and regional offices of selected events that occurred since our last briefing on February 12, 1997. Attachment 1 lists the attendees. Attachment 2 presents the significant elements of the discussed events.

Attachment 3 contains reactor scram statistics for the weeks ending February 16, February 23, March 2, and March 9, 1997. No significant events were identified for input into the NRC Performance Indicator Program.

The statements contained in the attached briefing slides represent the best information currently available to the NRC. Future followup could produce new information that may alter the NRC's current view of the events discussed.

Attachments: As stated (3)

cc w/atts: See next page

CONTACT: Kathy Gray, NRR (301) 415-1166

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S. Collins, NRR (0-12G18) F. Miraglia, NRR (0-12G18) F. Gillespie, NRR (0-12G18) R. Zimmerman, NRR (0-12G18) A. Thadani, NRR (0-12G18) B. Sheron, NRR (0-12G18) S. Varga, NRR (0-14E4) J. Zwolinski, NRR (0-14H3) J. Roe, NRR (0-13E4) E. Adensam, NRR (0-13E4) G. Lainas, NRR (0-7D26) G. Holahan, NRR (0-8E2) D. O'Neal, NRR (0-10E4) B. Boger, NRR (0-9E4) M. Markley, ACRS (T-2E26) C. Rossi, AEOD (T-4A9) F. Congel, AEOD (T-4D28) R. Barrett, AEOD (T-4A43) S. Rubin, AEOD (T-4D28) M. Harper, AEOD (T-4A9) W. Leschek, AEOD (T-4A9) V. McCree, EDO (0-17G21) J. Gilliland, PA (0-2G4) D. Morrison, RES (T-10F12) W. Hill, SECY (0-16G15) H. Miller, Region I C. Hehl, Region I L. Reyes, Region II J. Johnson, Region II S. Vias, Region II A. Beach, Region III J. Caldwell, Region III E. Mershoff, Region IV A. Howell (Acting), Region IV K. Perkins, Region IV/WCFO G. Fader, INPO J. Zimmer, DOE

D. Skay, NRR (013D1)

R. Capra, NRR (013D1)



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20565-0001

March 17, 1997

MEMORANDUM TO: Thomas T. Martin, Director Division of Reactor Program Management FROM: Alfred E. Chaffee, Chief alfred E chaffee

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SUBJECT: OPERATING REACTORS EVENTS BRIEFING MARCH 12, 1997 - BRIEFING 97-02

On March 12, 1997, we conducted an Operating Reactors Events Briefing (97-02) to inform senior managers from offices of the Commission, ACRS, AEOD, NRR and regional offices of selected events that occurred since our last briefing on February 12, 1997. Attachment 1 lists the attendees. Attachment 2 presents the significant elements of the discussed events.

Attachment 3 contains reactor scram statistics for the weeks ending February 16, February 23, March 2, and March 9, 1997. No significant events were identified for input into the NRC Performance Indicator Program.

The statements contained in the attached briefing slides represent the best information currently available to the NRC. Future followup could produce new information that may alter the NRC's current view of the events discussed.

Attachments: As stated (3)

cc w/atts: See next page

CONTACT: Kathy Gray, NRR (301) 415-1166

LIST OF ATTENDEES

OPERATING REACTORS EVENTS FULL BRIEFING (97-02)

MARCH 12, 1997

NAME	OFFICE	NAME	OFFICE
A. Chaffee K. Gray R. Dennig E. Goodwin T. Koshy J. Munday W. Burton R. Capra G. Galletti	NRR NRP N' NRR NRR NRR NRR NRR NRR	J. Rosenthal A. Hsia C. Rossi E. Collins M. Markley J. Carter D. Lynch E. Adensam	AEOD OCM-ND AEOD OCM ACRS NRR NRR NRR

TELEPHONE ATTENDANCE (AT ROLL CALL)

Regions Region II Region III Region IV

Resident Inspectors M. Miller, St. Lucie

<u>Misc.</u> M. Dapas, AIT Team Leader

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ATTACHMENT 1

OPERATING REACTORS EVENTS BRIEFING 97-02

LOCATION: 0-10B11, WHITE FLINT WEDNESDAY, MARCH 12, 1997 11:00 A.M.

ZION, UNIT 1

IMPROPER CONTROL ROD MOVEMENT DURING SHUTDOWN (AIT)

PRESENTED BY:

EVENTS ASSESSMENT AND GENERIC COMMUNICATIONS BRANCH DIVISION OF REACTOR PROGRAM MANAGEMENT, NRR

ATTACHMENT 2

97-02

ZION UNIT 1

IMPROPER CONTROL ROD MOVEMENT DURING SHUTDOWN FEBRUARY 21, 1997

PROBLEM

A REACTOR OPERATOR DID NOT UNDERSTAND A STEP IN THE SHUTDOWN PROCEDURE AND CONTINUOUSLY INSERTED RODS INTO SHUTDOWN CONDITION. HE THEN CONTINUOUSLY WITHDREW RODS IN AN ATTEMPT TO RESTART THE REACTOR WITHOUT DIRECTION FROM SHIFT MANAGEMENT.

CAUSE

- INADEQUATE COMMAND AND CONTROL IN THE CONTROL ROOM.
- SIGNIFICANT DEFICIENCY IN THE KNOWLEDGE OF REACTOR PHYSICS.

SAFETY SIGNIFICANCE UNCONTROLLED ADDITION OF REACTIVITY.

SEQUENCE OF EVENTS

2/19 1203 CONTAINMENT SPRAY PUMP DECLARED INOPERABLE. ENTERED TECH SPEC (TS).

2/21 0700 MAIN FOCUS OF SHIFT TURNOVER IS THE RESTORATION OF THE 1C CONTAINMENT SPRAY (CS) PUMP TO AVOID A REQUIRED SHUTDOWN OF UNIT 1.

CONTACTS:	Μ.	DAPAS,	AIT TEAM LEADER	AIT:	YES
	Τ.	KOSHY,	NRR/DRPM/PECB		
REFERENCE :	10	CFR 50	.72 #31828	SIGEVENT:	TBD

97-02

2/21 0930 PLANT MANAGEMENT REQUESTS THAT NUCLEAR ENGINEERS AND OPERATIONS SUPERVISION DISCUSS SHUTDOWN STRATEGY REGARDING THE USE OF CONTROL RODS VERSUS BORATION, AND OTHER REACTIVITY CONCERNS.

> BRIEFING NOT CONDUCTED DUE TO LACK OF SUPPORT FROM SHIFT ENGINEER (SE) AND UNIT SUPERVISOR (US).

- 2/21 1100 INFORMAL DISCUSSION BETWEEN PLANT MANAGEMENT AND OPERATIONS MANAGEMENT REGARDING CS STATUS AND WHEN TO SHUTDOWN UNIT 1.
- INADEQUATE COMMUNICATIONS RESULTS IN DIFFERENT UNDERSTANDINGS OF WHEN TO ABANDON 1C CS PUMP RESTORATION ATTEMPTS AND PLACE THE PLANT IN HOT SHUTDOWN.
- 2/21 1110 FORMAL SHUTDOWN BRIEFING CONDUCTED BY US. THIS BRIEFING FOCUSES ON THE REACTIVITY STRATEGY TO RETURN TO POWER.

2/21 1209 RAMPDOWN COMMENCES AT 0.25 PERCENT POWER PER MINUTE.

97-02

- 2/21 1255 LICENSEE IDENTIFIES THAT CS PUMP SHOULD HAVE BEEN DECLARED INOPERABLE AT 10:20 A.M. VS 10:40 A.M. ON FEBRUARY 19. CONSEQUENTLY PLANT SHUTDOWN REQUIRED BY TECH SPEC BY 2:20 P.M. VS 2:40 P.M. RATE OF RAMP DOWN INCREASED TO 0.5J PERCENT PER MINUTE BY 12:59 P.M.
- 2/21 UNIT 1 AT 7 PERCENT POWER.
- PRIOR TO 1407 SE DIRECTS US TO MAINTAIN THE REACTOR CRITICAL DUE TO THE EXPECTED RETURN OF THE 1C CS PUMP.

US READS STEP REGARDING ESTABLISHING POWER AT OR BELOW THE POINT OF ADDING HEAT ALOUD TO THE NUCLEAR STATION OPERATOR (NSO) AND REQUESTS THAT THE NSO IDENTIFY .025 PERCENT POWER ON THE INTERMEDIATE RANGE POWER METER.

NSO ASKS US IF HE WANTS HIM TO DRIVE RODS IN. US PROVIDES NO CLEAR ANSWER TO NSO, BUT MERELY RE-READS THE STEP FOR ESTABLISHING POWER AT OR BELOW THE POINT OF ADDING HEAT.

2/21 1407 OPERATOR TRIPS TURBINE IN ACCORDANCE WITH GOP-4.

US READS STEP ALOUD REGARDING ESTABLISHING POWER AT THE POINT OF ADDING HEAT. NSO ACKNOWLEDGES US AND INITIATES CONTINUOUS CONTROL ROD BANK "D" INSERTION.

QUALIFIED NUCLEAR ENGINEER (QNE) OBSERVES CONTROL BANK "C" INSERTION INDICATION (DUE TO BANK OVERLAP) AS EXPECTED DURING A NORMAL SHUTDOWN.

QNE APPROACHES NSO, AND INDICATES THAT THE REACTOR IS SUBSTANTIALLY SUB-CRITICAL.

NSO INFORMS QNE THAT HE IS FOLLOWING PROCEDURE.

NSO CONTINUES CONTINUOUS CONTROL ROD INSERTION.

- 2/21 1411 NSO HALTS CONTINUOUS CONTROL ROD INSERTION AFTER 3 MINUTES AND 48 SECONDS WHEN INTERMEDIATE RANGE POWER INDICATES .025 PERCENT. (INSERTED 232 STEPS)
- 2/21 1412 NSO OBSERVES THAT POWER HAS DROPPED TO .01 PERCENT (DUE TO SUBSTANTIAL NEGATIVE REACTIVITY ADDITION) AND INFORMS US THAT HE INTENDS TO WITHDRAW RODS TO STABILIZE POWER AT .025 PERCENT.

US ACKNOWLEDGES NSO.

NSO INITIATES CONTINUOUS CONTROL ROD WITHDRAWAL. (PULLED 82 STEPS)

QNE OBSERVES NSO'S ACTIONS, BECOMES CONCERNED WITH EXCESSIVE ROD WITHDRAWAL AND TELLS NSO THAT HE DOES NOT LIKE WHAT NSO IS DOING. THE NSO RESPONDS THAT HE IS NOT COMFORTABLE WITH WHAT HE IS DOING AS WELL.

SE APPROACHES QNE AND QNE INFORMS SE THAT HE IS DISTURBED BY "DOWN AND UP ROD MOVEMENT".

SE DOES NOT UNDERSTAND RELEVANCE AND WALKS AWAY FROM QNE.

- 2/21 1414 SE DIRECTS US TO TRIP THE REACTOR DUE TO IMMINENT EXPIRATION OF TS LCO ACTION STATEMENT.
- 2/21 1415 NSO MANUALLY TRIPS UNIT 1 PLACING THE UNIT IN HOT SHUTDOWN AS REQUIRED BY TS ACTION STATEMENT.
- 2/21 1508 QNE AND LEAD NUCLEAR ENGINEER (LNE) DISCUSS CONCERNS REGARDING CONTROL ROD MANIPULATIONS WITH SE.

SE UNAWARE THAT THE REACTOR HAD BEEN SHUTDOWN AND THE CREW HAD ATTEMPTED TO RESTART THE REACTOR.

NUCLEAR ENGINEERS DIRECTED TO DISCUSS THE ISSUE WITH THE US, NSO, AND ASSISTANT OPERATIONS MANAGER. US AND NSO FAIL TO UNDERSTAND SIGNIFICANCE OF EVENT.

- 2/21 ~1800 NUCLEAR ENGINEERS DISCUSS THEIR CONCERNS REGARDING ROD MOVEMENT WITH SENIOR OPERATIONS MANAGEMENT.
- 2/22 ~0930 PLANT MANAGER BECOMES AWARE OF THE ACTUAL SIGNIFICANCE OF THE EVENT. SENIOR MANAGEMENT WAS INFORMED AND THE CREW WAS TAKEN OFF SHIFT.

PRELIMINARY AIT FINDINGS

- LACK OF COGNIZANCE BY OPERATIONS MANAGEMENT
 - NSO ACTION TO CONTINUOUSLY WITHDRAW RODS
 - SE AND US NOT COGNIZANT OF THE EXTENT OF ROD MANIPULATION
- CONTROL ROOM DISTRACTIONS
 - 39 PEOPLE IN CONTROL ROOM ENVELOPE INCLUDING 15 IN THE VICINITY OF NSO & US OPERATING STATIONS DURING 8 MINUTES BETWEEN TRIPPING TURBINE AND REACTOR
 - US AND SE TOO INVOLVED IN CS PUMP RECOVERY EFFORTS
 - "SAVE THE UNIT" MIND-SET IMPACT SE FOCUS

- SPECIFIC CONTROL ROOM COMMUNICATION DEFICIENCIES DURING THIS EVENT
 - FORMAL SHUTDOWN BRIEFING FAILED TO FOCUS ON CONTROLLED SHUTDOWN
 - 15 MINUTES BEFORE REQUIRED SHUTDOWN SE DIRECTED US TO KEEP REACTOR CRITICAL. SE DID NOT INFORM ENTIRE CREW OF INTEND TO KEEP REACTOR CRITICAL
 - FAILURE OF US TO CLARIFY CRITICAL STEP IN SHUTDOWN PROCEDURE
 - QNE FAILED TO ADEQUATELY COMMUNICATE HIS CONCERNS REGARDING ROD MANIPULATIONS BY NSO TO US AND SE
 - INAPPROPRIATE RESPONSE TO ROD INSERTION LIMIT ALARM
- INEFFECTIVE INFORMATION FLOW TO PLANT MANAGEMENT
 - QNE AND HIS SUPERVISOR RECOGNIZED THE PROBLEM ON AFTERNOON OF FEBRUARY 21; ATTEMPT TO GO FROM SUBCRITICAL TO CRITICAL NOT DISCUSSED WITH PLANT MANAGER ON FEBRUARY 21.
 - OPERATIONS MANAGEMENT FAILED TO RECOGNIZE THE SIGNIFICANCE OF THE NSO ACTIONS. OPERATIONS MANAGEMENT RETURNED STAFF TO LICENSED DUTIES WITHOUT SENIOR MANAGEMENT CONSULTATION.
- OPERATOR TRAINING DEFICIENCIES
 - POINT OF ADDING HEAT ONLY ADDRESSED IN INITIAL TRAINING
 - NORMAL SHUTDOWN NOT DONE IN REQUALIFICATION
 - NSO'S LACK OF KNOWLEDGE IN REACTOR PHYSICS THAT RESULTED IN CONTINUOUS INSERTION OF 232 STEPS AND WITHDRAWAL OF 82 STEPS.

- RELATED HISTORIC EVENTS AT ZION
 - INSPECTION REPORT ISSUED ON APRIL 8, 1996 ADDRESSED INADVERTENT MODE CHANGE IN JANUARY FROM COLD WATER ADDITION
 - FEBRUARY 28, 1996 NUCLEAR ENGINEERING REPORT ON ADVERSE TREND IN REACTIVITY MANAGEMENT
 - VIOLATIONS ISSUED ON JANUARY 28, 1997 FOR INAPPROPRIATE ROD WITHDRAWAL IN SEPTEMBER 1996 DURING START UP

FOLLOW UP

- CONDUCTED AN AIT INSPECTION WITH NRR AND TRAINING CENTER PARTICIPATION. CONCLUDED WITH A PUBLIC EXIT ON MARCH 7, 1997
- PECB WILL EVALUATE GENERIC IMPLICATIONS FROM THE AIT FINDINGS.

RELATED GENERIC COMMUNICATIONS

- IN 92-39: UNPLANNED RETURN TO CRITICALITY DURING REACTOR SHUTDOWN
- IN 94-90: TRANSIENT RESULTING IN A REACTOR TRIP AND MULTIPLE SAFETY INJECTION SYSTEM ACTUATIONS AT SALEM

REACTOR SCRAM

Reporting Period: 03/03/97 to 03/09/97

						YTD	YTD	
DATE	PLANT & UNIT	POWER	TYPE	CAUSE	COMPLICATIONS	ABOVE 15%	BELOW 15%	TOTAL
RUIE	LEANT W WAT	COMES	And and		10			
03/03/97	TURKEY POINT 3	0	SM	Equipment Failure	NO	U		
03/04/97	SAINT LUCIE 1	100	SA	Other	NO	1	0	1
03/06/97	WATTS BAR 1	100	SA	Equipment Failure	NO	2	0	2
03/09/97	PEACH BOTTOM 3	14	SM	Maintronce Error	NO	0	1	1

Note: Year To Date (YTD) Totals Include Events Within The Calendar Year Indicated By The End Date Of The Specified Reporting Period

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COMPARISON OF WEEKLY SCRAM STATISTICS WITH INDUSTRY AVERAGES

PERIOD ENDING 03/09/97

	NUMBER	1997	1996	1995	1994	1993
	OF	WEEKLY	WEEKLY	WEEKLY	WEEKLY	WEEKLY
SCRAM CAUSE	SCRAMS	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE
		(YTD)				
POWER GREATER THAN OR EQUAL TO	15%					
EQUIPMENT FAILURE	1	0.51	1.52	1.83	1.52	1.83
DESIGN/INSTALLATION ERROR	0	0.10	0.10	0.12	0.08	0.04
OPERATING ERROR	0	0.10	0.08	0.15	0.21	0.27
MAINTENANCE ERROR	0	0.21	0.50	0.38	0.54	0.52
EXTERNAL	0	0.10	0.13	0.21	0.17	0.13
OTHER	1	0.10	0.10	0.06		0.02
Subtotal	2	1.12	2.43	2.75	2.52	2.81
POWER LESS THAN 117						
EQUIPMENT FAILURE	1	0.21	0.23	0.10	0.27	0.38
DESIGN/INSTALLATION ERROR	0	0.00	e presidente de		0.02	
OPERATING ERROR	0	0.00	0.10	0.13	0.08	0.13
MAINTENANCE ERROR	1	0.10	0.06	0.08	1.0	0.02
EXTERNAL	0	0.00	 A 12 121 			0.04
OTHER	0	0.00			1.1	
Subtotal	2	0.31	0.39	0.31	0.37	0.57
TOTAL	4	1.43	2.82	3.06	2.89	3.38

SCRAM TYPE	NO. OF SCRAMS	1997 WEEKLY AVERAGE (YTD)	1996 WEEKLY AVERAGE	1995 WEEKLY AVERAGE	1994 WEEKLY AVERAGE	1993 WEEKLY AVERAGE
TOTAL # MATIC SCRAMS	2	0.72	1.71	1.92	2.19	2.44
TOTAL MANUAL SCRAMS	2	0.72	1.10	1.13	0.69	0.94

TOTALS MAY DIFFER BECAUSE OF ROUNDING OFF

REACTOR SCRAM

Reporting Period: 02/24/97 to 03/02/97

						YTD	YTD	
						ABOVE	BELOW	YTD
DATE	PLANT & UNIT	POWER	TYPE	CAUSE	COMPLICATIONS	15%	15%	TOTAL
02/25/97	SUSQUEHANNA 1	64	SM	Maintenance Error	NO	1	0	1

Note: Year To Date (YTD) Totals Include Events Within The Calendar Year Indicated By The End Date Of The Specified Reporting Period

COMPARISON OF WEEKLY SCRAM STATISTICS WITH INDUSTRY AVERAGES

PERIOD ENDING 03/02/97

	NIMBED	1007	1006	1005	100/	1003
	OF	UESKIN	UPERIN	LIEEVIN	USEVIN	UEEVIV
SCHAM CALISE	SCRAME	AVERACE	AVERACE	AVEDACE	AVEDALE	AVERACE
SCUMP CHOSE	358463	(YTD)	AVERAGE	AVERAGE	AVENAGE	AYERAUL
POWER GREATER THAN OR EQUAL TO	15%	(110)				
EQUIPMENT FAILURE	0	0.46	1.52	1.83	1.52	1.83
DESIGN/INSTALLATION ERROR	0	0.11	0.10	0.12	0.08	0.04
OPERATING ERROR	0	0.11	80.0	0.15	0.21	0.27
MAINTENANCE ERROR	1	0.23	0.50	0.38	0.54	0.52
EXTERNAL	0	0.11	0.13	0.21	0.17	0.13
OTHER	0	0.00	0.10	0.06	196	0.02
Subtotal	1	1.02	2.43	2.75	2.52	2.81
POWER LESS THAN 15%						
EQUIPMENT FAILURE	0	0.11	0.23	0.10	0.27	0.38
DESIGN/INSTALLATION ERROR	0	0.00		1.1	0.02	
OPERATING ERROR	0	0.00	0.10	0.13	0.08	0.13
MAINTENANCE ERROR	0	0.00	0.06	0.08		0.02
EXTERNAL	0	0.00	10 F. (1994)			0.04
OTHER	0	0.00				
Subtotal	0	0.11	0.39	0.31	0.37	0.57
TOTAL	1	1.13	2.82	3.06	2.89	3.38

		1997	1996	1995	1994	1993
	NO. OF	WEEKLY	WEEKLY	WEEKLY	WEEKLY	WEEKLY
SCRAM TYPE	SCRAMS	AVERAGE (YTD)	AVERAGE	AVERAGE	AVERAGE	AVERAGE
TOTAL AUTOMATIC SCRAMS	0	0.57	1.71	1.92	2.19	2.44
TOTAL MANUAL SCRAMS	1	0.57	1.10	1.13	0.69	0.94

TOTALS MAY DIFFER BECAUSE OF ROUNDING OFF

REACTOR SCRAM

Reporting Period: 02/17/97 to 02/23/97

						YTD ABOVE	YTD BELOW	YTD
DATE	PLANT & !"	POWER	TYPE	CAUSE	COMPLICATIONS	<u>15%</u>	<u>15%</u>	TOTAL
02/18/97	SURRY 2	90	SM	Equipment Failure	NO	1	0	1
02/19/97	SURRY 1	55	SM	Equipment Failure	NO	1	0	1

Note: Year To Date (YTD) Totals Include Events Within The Calendar Year Indicated By The End Date Of The Specified Reporting Period

COMPARISON OF WEEKLY SCRAM STATISTICS WITH INDUSTRY AVERAGES

PERIOD ENDING 02/23/97

	NUMBER	1997	1996	1995	1994	1993
	OF	WEEKLY	WEEKLY	WEEKLY	WEEKLY	WEEKLY
SCRAM CAUSE	SCRAMS	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE
		(YTD)				
POWER GREATER THAN OR EQUAL TO	0 15%					
						50Fi
EQUIPMENT FAILURE	2	0.52	1.52	1.83	1.52	1.83
DESIGN/INSTALLATION ERROR	0	0.13	0.10	0.12	0.08	0.04
OPERATING ERROR	0	0.13	0.08	0.15	0.21	0.27
MAINTENANCE ERROR	0	0.13	0.50	0.38	0.54	0.52
EXTERNAL	0	0.13	0.13	0.21	0.17	0.13
OTHER	0	0.00	0.10	0.06		0.02
Subtotal	2	1.04	2.43	2.75	2.52	2.81
POWER LESS THAN 15%						
EQUIPMENT FAILURE	0	0.13	0.27	0.10	0.27	0.38
DESIGN/INSTALLATION ERROR	0	0.00			0.02	
OPERATING ERROR	0	0.00	6.10	0.13	0.08	0.13
MAINTENANCE ERROR	0	0.00	0.06	0.08	8 C. 1	0.02
EXTERNAL	0	0.00		1		0.04
OTHER	0	0.00				
Subtotal	0	0.13	0.39	0.31	0.37	0.57
TOTAL	2	1.17	2.82	3.06	2.89	3.38
		1997	1996	1995	1994	1993
	NO. OF	WEEKLY	WEEKLY	WEEKLY	WEEKLY	WEEKLY
SCRAM TYPE	SCRAMS	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE

SCRAM TYPE	SCRAMS	AVERAGE (YTD)	AVERAGE	AVERAGE	AVERAGE	AVERA
TOTAL AUTOMATIC SCRAMS	0	0.65	1.71	1.92	2.19	2.44
TOTAL MANUAL SCRAMS	2	0.52	1.10	1.13	0.69	0.94

TOTALS MAY DIFFER BECAUSE OF ROUNDING OFF

REACTOR SCRAM

Reporting Period: 02/10/97 to 02/16/97

						YTD	YTD		
						ABOVE	BELOW	YTD	
DATE	PLANT & UNIT	POWER	TYPE	CAUSE	COMPLICATIONS	15%	15%	TOTAL	
02/15/97	PILGRIM 1	20	SM	Equipment Failure	NO	1	0	1	

Note: Year To Date (YTD) Totals Include Events Within The Calendar Year Indicated By The End Date Of The Specified Reporting Period

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COMPARISON OF WEEKLY SCRAM STATISTICS WITH INDUSTRY AVERAGES

PERIOD ENDING 02/16/97

	NUMBER	1997	1996	1995	1994	1993
	OF	WEEKLY	WEEKLY	WEEKLY	WEEKLY	WEEKLY
SCRAM CAUSE	SCRAMS	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE
		(YTD)				
POWER GREATER THAN OR EQUAL TO	15%					
EQUIPMENT FAILURE	1	0.30	1.52	1.83	1.52	1.83
DESIGN/INSTALLATION ERROR	0	0.15	0.10	0.12	0.08	0.04
OPERATING ERROR	0	0.15	0.08	0.15	0.21	0.27
MAINTENANCE ERROR	0	0.15	0.50	0.38	0.54	0.52
EXTERNAL	0	0.15	0.13	0.21	0.17	0.13
OTHER	0	0.00	0.10	0.06		0.02
Subtotal	1	0.90	2.43	2.75	2.52	2.81
POWER LESS THAN 15%						
EQUIPMENT FAILURE	0	0.15	0.23	0.10	0.27	0.38
DESIGN/INSTALLATION ERROR	0	0.00			0.02	
OPERATING ERROR	0	0.00	0.10	0.13	0.08	0.13
MAINTENANCE ERROR	0	0.00	0.06	0.08		0.02
EXTERNAL	0	0.00			1996 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	0.04
OTHER	0	0.00	1.1.1.1.1			
Subtotal	0	0.15	0.39	0.31	0.37	0.57
TOTAL	1	1.05	2.82	3.06	2.89	3.38

		1997	1996	1995	1994	1993	
	NO. OF	WEEKLY	WEEKLY	WEEKLY	WEEKLY	WEEKLY	
SCRAM TYPE	SCRAMS	AVERAGE (YTD)	AVERAGE	AVERAGE	AVERAGE	AVERAGE	
TOTAL AUTOMATIC SCRAMS	0	0.74	1.71	1.92	2.19	2.44	
TOTAL MANUAL SCRAMS	1	0.30	1.10	1.13	0.69	0.94	

TOTALS MAY DIFFER BECAUSE OF ROUNDING OFF

* NOTES

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- 1. PLANT SPECIFIC DATA BASED ON INITIAL REVIEW OF 50.72 REPORTS FOR THE WEEK OF INTEREST. PERIOD IS MIDNIGHT SUNDAY THROUGH MIDNIGHT SUNDAY. SCRAMS ARE DEFINED AS REACTOR PROTECTIVE ACTUATIONS WHICH RESULT IN ROD MOTION, AND EXCLUDE PLANNED TESTS OR SCRAMS AS PART OF PLANNED SHUTDOWN IN ACCORDANCE WITH A PLANT PROCEDURE. THERE ARE 111 REACTORS HOLDING AN OPERATING LICENSE.
- 2. PERSONNEL RELATED PROBLEMS INCLUDE HUMAN ERROR, PROCEDURAL DEFICIENCIES, AND MANUAL STEAM GENERATOR LEVEL CONTROL PROBLEMS.
- 3. COMPLICATIONS: RECOVERY <u>COMPLICATED</u> BY EQUIPMENT FAILURES OR PERSONNEL ERRORS UNRELATED TO CAUSE OF SCRAM.
- 4. "OTHER" INCLUDES AUTOMATIC SCRAMS ATTRIBUTED TO ENVIRONMENTAL CAUSES (LIGHTNING), SYSTEM DESIGN, OR UNKNOW CAUSE.

OEAB SCRAM DATA

Manual	and	Automatic	Scrams	for	1987		435
Manual	and	Automatic	Scrams	for	1988		291
Manual	and	Automatic	Scrams	for	1989		252
Manual	and	Automatic	Scrams	for	1990		226
Manual	and	Automatic	Scrams	for	1991		206
Manual	and	Automatic	Scrams	for	1992		212
Manual	and	Automatic	Scrams	for	1993		175
Manual	and	Automatic	Scrams	for	1994		150
Manual	and	Automatic	Scrams	for	1995		159
Manual	and	Automatic	Scrams	for	1996		146
Manual	and	Automatic	Scrams	for	1997	(YTD 03/09/97)	14