

February 28, 1995

MEMORANDUM TO: Brian K. Grimes, Director
Division of Project Support

FROM: Alfred E. Chaffee, Chief (original signed by Robert L. Dennig
Events Assessment and for)
Generic Communications Branch
Division of Project Support

SUBJECT: OPERATING REACTORS EVENTS BRIEFING
FEBRUARY 22, 1995 - BRIEFING 95-05

On February 22, 1995, we conducted an Operating Reactors Events Briefing (95-05) 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 15, 1995. Attachment 1 lists the attendees. Attachment 2 presents the significant elements of the discussed events.

Attachment 3 contains reactor scram statistics for the week ending February 19, 1995. No significant events were identified for input into the NRC Performance Indicator Program.

Attachments: As stated (3)

cc w/atts:
See next page

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

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DATE	02/23/95		02/28/95		02/28/95		02/28/95	

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RETURN TO REGULATORY CENTRAL FILES

TDTR-5-1
Operating Experiences

DF03

CC:

W. Russell, NRR (O-12G18)
F. Miraglia, NRR (O-12G18)
F. Gillespie, NRR (O-12G18)
R. Zimmerman, NRR (O-12G18)
A. Thadani, NRR (O-12G18)
S. Varga, NRR (O-14E4)
J. Zwolinski, NRR (O-14H3)
J. Roe, NRR (O-13E4)
E. Adensam, NRR (O-13E4)
B. Sheron, NRR (O-7D26)
G. Lainas, NRR (O-7D26)
G. Holahan, NRR (O-8E2)
M. Virgilio, NRR (O-8E2)
S. Rosenberg, NRR (O-10E4)
R. L. Spessard, NRR (O-9A2)
J. Calvo, NRR (O-10E2)
B. Boger, NRR (O-10H5)
C. Thomas, NRR (O-10H5)
B-D. Liaw, NRR (O-11E4)
D. Crutchfield, NRR (O-11H21)
W. Travers, NRR (O-11H21)
D. Coe, ACRS (T-2E26)
E. Jordan, AEOD (T-4D18)
C. Rossi, AEOD (T-4A9)
F. Congel, AEOD (T-4D28)
K. Brockman, AEOD (T-4A23)
S. Rubin, AEOD (T-4D28)
M. Harper, AEOD (T-4A9)
V. McCree, EDO (O-17G21)
F. Ingram, PA (O-2G5)
E. Beckjord, RES (T-10F12)
A. Bates, SECY (O-16G15)
T. Martin, Region I
R. Cooper, Region I
S. Ebnetter, Region II
E. Merschhoff, Region II
S. Vias, Region II
J. Martin, Region III
E. Greenman, Region III
L. Callan, Region IV
A. Beach, Region IV
K. Perkins, Region IV/WCFO
S. Newton, INPO
J. Zimmer, DOE

D. Brinkman (O-14B2)
T. Marsh (O-13D18)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 28, 1995

MEMORANDUM TO: Brian K. Grimes, Director
Division of Project Support

FROM: Alfred E. Chaffee, Chief *Robert L. Dwyer*
Events Assessment and
Generic Communications Branch
Division of Project Support

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LIST OF ATTENDEES

OPERATING REACTORS EVENTS FULL BRIEFING (95-05)

FEBRUARY 22, 1995

<u>NAME</u>	<u>OFFICE</u>	<u>NAME</u>	<u>OFFICE</u>
A. CHAFFEE	NRR	H. RICHINGS	NRR
V. HODGE	NRR	D. BRINKMAN	NRR
R. DENNIG	NRR	D. DESAULNIERS	NRR
K. GRAY	NRR	M. FLEISHMAN	OCM/KR
E. GOODWIN	NRR	D. COE	ACRS
B.D. LIAW	NRR	R. MCWHORTER	OCM/IS
B. GRIMES	NRR	J. SORENSEN	OCM/KR
C. THOMAS	NRR	C. ROSSI	AEOD

TELEPHONE ATTENDANCE
(AT ROLL CALL)

Regions

Region I
Region II
Region III
Region IV

Resident Inspectors

Misc.

J. Shedlosky

OPERATING REACTORS EVENTS BRIEFING 95-05

**LOCATION: 0-10 B11, WHITE FLINT
WEDNESDAY, FEBRUARY 22, 1995, 11:00 A.M.**

NINE MILE POINT, UNIT 1

**RECIRCULATION PUMP
RUNBACK AND TURBINE
TRIP**

PRESENTED BY:

**EVENTS ASSESSMENT AND GENERIC COMMUNICATIONS BRANCH
DIVISION OF PROJECT SUPPORT, NRR**

NINE MILE POINT, UNIT 1
RECIRCULATION PUMP RUNBACK AND TURBINE TRIP
FEBRUARY 1, 1995

PROBLEM

RECIRCULATION PUMP SPEED INADVERTENTLY REDUCED AND INDICATED CORE FLOW BELOW OPERATING MAP NATURAL CIRCULATION (ABOUT 20 PERCENT RATED FLOW).

CAUSE

RECIRCULATION PUMP SPEED RUNBACK DUE TO PERSONNEL ERROR.

SAFETY SIGNIFICANCE

REACTOR POWER AND FLOW PASSED THROUGH RESTRICTED ZONE OF OPERATING MAP, MISSING SCRAM ZONE. END STATE IN AN UNDEFINED AREA FOR FLOW LESS THAN MINIMUM.

DISCUSSION

• EVENT

- WHILE AT 77 PERCENT RATED POWER AT END OF CYCLE WITH ONE OF FIVE RECIRCULATION PUMPS OUT OF SERVICE, MAINTENANCE OF FLOW CONTROLS FOR THE IDLE PUMP GENERATED A RUNBACK SIGNAL FOR ALL THE ACTIVE PUMPS (THEY WERE IN MASTER MANUAL CONTROL MODE, NOT INDIVIDUAL MANUAL CONTROL MODE), CAUSING REDUCTION IN INDICATED FLOW BELOW OPERATING MAP MINIMUM.

CONTACT: V. HODGE, NRR/DOPS/OECB
REFERENCE: PN19503

AIT: NO
SIGEVENT: TBD

• PLANT RECOVERY

- POWER DECREASED, LAG IN FEEDWATER CONTROL RESULTED IN FEED FLOW TO STEAM FLOW MISMATCH AND INCREASED REACTOR WATER LEVEL TO TURBINE TRIP SETPOINT
- NO REACTOR SCRAM BECAUSE POWER WAS LESS THAN 45 PERCENT RATED POWER AT TURBINE TRIP AND WITHIN BYPASS VALVE CAPACITY
- OPERATOR INSERTED CONTROL RODS
- PUMP SPEED DECREASED IN 95 SECONDS TO ABOUT 10 PERCENT OF SPEED FOR RATED FLOW (NORMAL MINIMUM IS ABOUT 20 PERCENT BY PROCEDURE)
- CORE FLOW DECREASED TO ABOUT 13 PERCENT (DETERMINED AFTERWARDS)
- OPERATORS INCREASED RECIRC PUMP SPEEDS INDIVIDUALLY IN MANUAL CONTROL AFTER ABOUT 20 MINUTES TO 20 PERCENT OF RATED

• NSSS VENDOR (GE NE) ANALYSIS INDICATES THAT:

- ACTUAL FLOW EXCEEDS INDICATED FLOW BECAUSE INSTRUMENTS ARE CALIBRATED AT HIGH FLOW RATHER THAN AT LOW FLOW
- INDICATED FLOW WAS NEVER BELOW TECH SPEC SAFETY LIMIT (POWER MUST BE LESS THAN 25 PERCENT RATED POWER WHEN FLOW IS LESS THAN 10 PERCENT RATED FLOW)

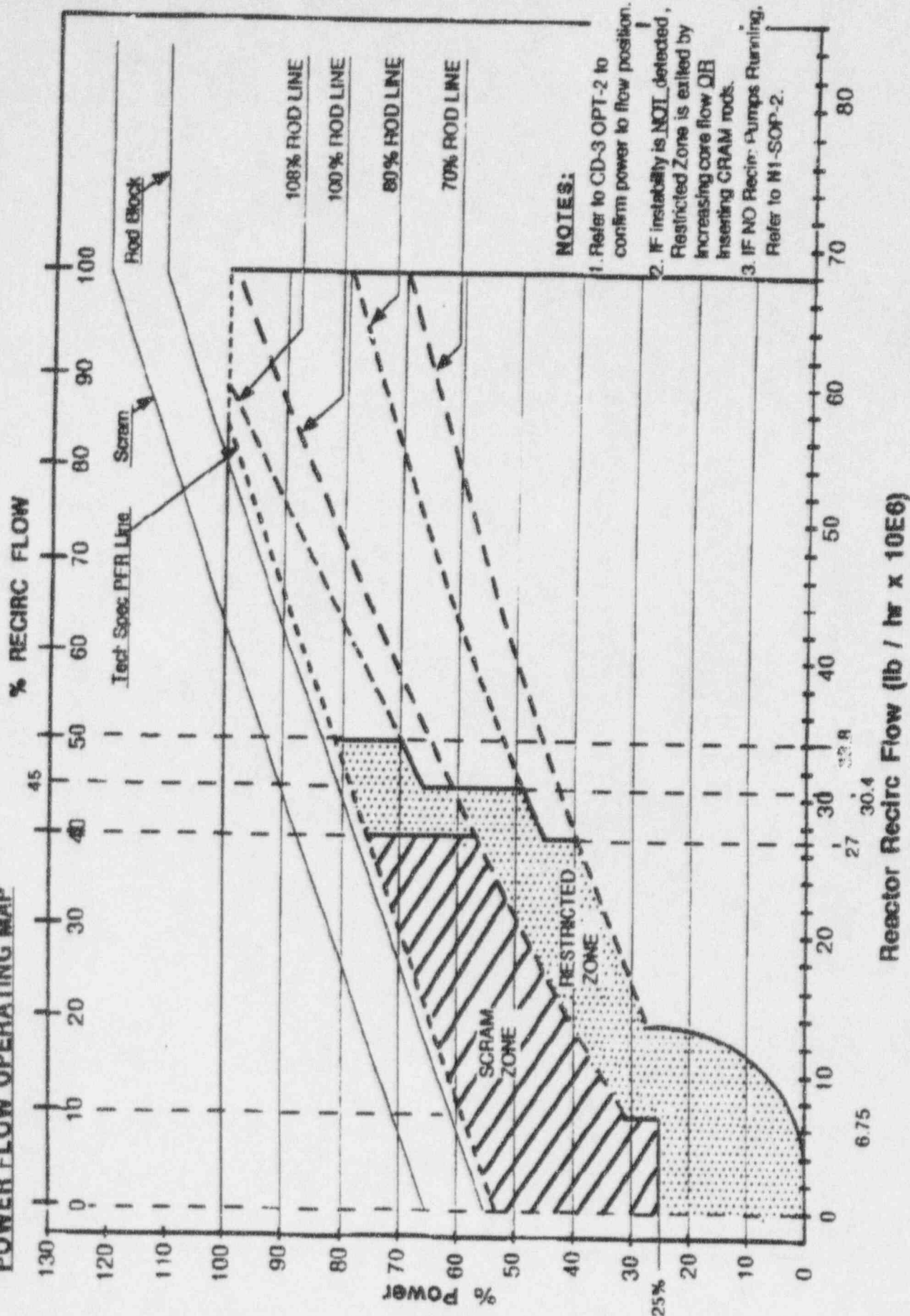
- FSAR SCENARIOS BOUND THIS EVENT. MOST SEVERE TRANSIENT ANALYZED IN FSAR IS TRIP OF ALL RECIRC PUMPS, DROPPING FLOW FASTEST TO NATURAL CIRCULATION
- PREVIOUS EVENTS OF INTEREST AT THIS PLANT.
 - REACTOR SCRAM DURING SURVEILLANCE TESTING (50.72 #27975, NOVEMBER 2, 1994)
 - REACTOR SCRAM DURING SURVEILLANCE TESTING ON ONE OF TWO RECIRC FLOW CONVERTER CHANNELS (50.72 #24944, JANUARY 26, 1993)
 - REACTOR SCRAM FROM OVERHEATED REACTOR PROTECTION SYSTEM RELAY (PNO-I-92-065, NOVEMBER 4, 1992)

FOLLOWUP

- SPECIAL INSPECTION TEAM DISPATCHED FEBRUARY 3, 1995, FOCUSING ON MULTIPLE OPERATOR ERRORS OVER PAST YEAR.
 - OPERATORS FOLLOWED TRAINING AND PROCEDURES.
 - IDENTIFIED HUMAN PERFORMANCE WEAKNESSES RELATED TO PREVIOUS EVENTS.
 - OPEN ITEM ON ACCURACY OF FLOW INSTRUMENTATION.

FIGURE 2.1

POWER FLOW OPERATING MAP



REACTOR SCRAM

Reporting Period: 02/13/95 to 02/19/95

<u>DATE</u>	<u>PLANT & UNIT</u>	<u>POWER</u>	<u>TYPE</u>	<u>CAUSE</u>	<u>COMPLICATIONS</u>	YTD ABOVE 15%	YTD BELOW 15%	YTD TOTAL
02/14/95	NINE MILE POINT 2	100	SM	Maintenance Error	NO	1	0	1
02/18/95	WASHINGTON NUCLEAR 2	100	SA	Operating Error	NO	1	0	1

Attachment 3

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
02/19/95

SCRAM CAUSE	NUMBER OF SCRAMS	1995 WEEKLY AVERAGE (YTD)	1994 WEEKLY AVERAGE	1993 WEEKLY AVERAGE	1992 WEEKLY AVERAGE	1991* WEEKLY AVERAGE
POWER GREATER THAN OR EQUAL TO 15%						
EQUIPMENT FAILURE*	0	1.68	1.52	1.83	2.62	2.83
DESIGN/INSTALLATION ERROR*	0	0.00	0.08	0.04	-	0.02
OPERATING ERROR*	1	0.14	0.21	0.27	0.31	0.04
MAINTENANCE ERROR*	1	0.14	0.54	0.52	0.50	-
EXTERNAL*	0	0.00	0.17	0.13	-	-
OTHER*	0	0.00	-	0.02	-	0.62
Subtotal	2	1.96	2.52	2.81	3.43	3.51
POWER LESS THAN 15%						
EQUIPMENT FAILURE*	0	0.14	0.27	0.38	0.42	0.27
DESIGN/INSTALLATION ERROR*	0	0.00	0.02	-	-	-
OPERATING ERROR*	0	0.14	0.08	0.13	0.15	-
MAINTENANCE ERROR*	0	0.00	-	0.02	0.08	-
EXTERNAL*	0	0.00	-	0.04	-	-
OTHER*	0	0.00	-	-	-	0.19
Subtotal	0	0.28	0.37	0.57	0.65	0.46
TOTAL	2	2.24	2.89	3.38	4.08	3.97

SCRAM TYPE	NO. OF SCRAMS	1995 WEEKLY AVERAGE (YTD)	1994 WEEKLY AVERAGE	1993 WEEKLY AVERAGE	1992 WEEKLY AVERAGE	1991 WEEKLY AVERAGE
TOTAL AUTOMATIC SCRAMS	1	1.54	2.19	2.44	3.06	3.25
TOTAL MANUAL SCRAMS	1	0.70	0.69	0.94	1.02	0.69

TOTALS MAY DIFFER BECAUSE OF ROUNDING OFF

* Detailed breakdown not in database for 1991 and earlier

- EXTERNAL cause included in EQUIPMENT FAILURE
- MAINTENANCE ERROR and DESIGN/INSTALLATION ERROR causes included in OPERATING ERROR
- OTHER cause included in EQUIPMENT FAILURE 1991 and 1990

NOTES

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 COMPLICATED BY EQUIPMENT FAILURES OR PERSONNEL ERRORS UNRELATED TO CAUSE OF SCRAM.
4. "OTHER" INCLUDES AUTOMATIC SCRAMS ATTRIBUTED TO ENVIRONMENTAL CAUSES (LIGHTNING), SYSTEM DESIGN, OR UNKNOWN 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	--(YTD 02/19/95)--	16