

December 21, 1990

MEMORANDUM FOR: Charles E. Rossi, Director
 Division of Operational Events Assessment

FROM: Alfred E. Chaffee, Chief
 Events Assessment Branch
 Division of Operational Events Assessment

SUBJECT: THE OPERATING REACTORS EVENTS MEETING
 DECEMBER 19, 1990 - MEETING 90-30

On December 19, 1990, we conducted an Operating Reactors Events meeting (90-30) to inform senior managers from NRR, ACRS, RES, and regional offices of selected events that occurred since our last briefing on November 28, 1990. Enclosure 1 lists the attendees. Enclosure 2 presents the significant elements of the discussed events.

Enclosure 3 contains reactor scram statistics for the weeks ending 12/16/90, 12/09/90 and 12/02/90. No significant events were identified for input into the NRC performance indicator program.

HENRY BAILEY

/FOR/ Alfred E. Chaffee, Chief
 Events Assessment Branch
 Division of Operational Events Assessment

Enclosures:
 As stated

cc w/Encl.:
 See Next Page

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

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On December 19, 1990, we conducted an Operating Reactors Events meeting (90-30) to inform senior managers from NRR, ACRS, RES, and regional offices of selected events that occurred since our last briefing on November 28, 1990. Enclosure 1 lists the attendees. Enclosure 2 presents the significant elements of the discussed events.

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Harry Bailey
for Alfred E. Chaffee, Chief
Events Assessment Branch
Division of Operational Events Assessment

Enclosures:
As stated

cc w/Encl.:
See Next Page

cc:

T. Murley, NRR
F. Miraglia, NRR
W. Russell, NRR
F. Gillespie, NRR
J. Partlow, NRR
S. Varga, NRR
R. Wessman, NRR
G. Lainas, NRR
D. Crutchfield, NRR
J. Zwolinski, NRR
B. Boger, NRR
W. Travers, NRR
J. Richardson, NRR
A. Thadani, NRR
F. Rosa, NRR
B. Grimes, NRR
F. Congel, NRR
J. Roe, NRR
T. Martin, RI
W. Kane, RI
C. Hehl, RI
S. Ebnetter, RII
L. Reyes, RII
B. Davis, RIII
E. Greenman, RIII
R.D. Martin, KIV
S. Collins, RIV
J.B. Martin, RV
R. Zimmerman, RV
P. Boehnert, ACRS
E. Jordan, AEOD
T. Novak, AEOD
L. Spessard, AEOD
G. Zech, AEOD
E. Weiss, AEOD
S. Rubin, AEOD
M. Harper, AEOD
W. Bateman, EDO
R. Newlin, GPA
J. Cowan, INPO
E. Beckjord, RES
A. Bates, SECY

A. Johnson, NRR
R. Wessman, NRR

LIST OF ATTENDEESOPERATING REACTORS EVENTS BRIEFING (90-30)

December 19, 1990

<u>NAME</u>	<u>ORGANIZATION</u>	<u>NAME</u>	<u>ORGANIZATION</u>
P. Boehnert	ACRS	A. Chu	NRR/DRP
A. Chaffee	NRR/DOEA	E. Rossi	NRR/DOEA
H. Bailey	NRR/DOEA	M. Case	NRR/DLPQ
E. Greenman	NRR/DRP	R. Pelton	NRR/DLPQ
A. Young	NRR/DOEA	D. Fischer	NRR/DOEA
M. Reardon	NRR/DOEA	B. Boger	NRR/DRP
R. Benedict	NRR/DOEA	W. Minners	RES/DSIR
R. Pedersen	CE	F. Orr	NRR/SRXB
A. Johnson	DRP/DRP	S. Long	NRR/PRAB
N. Fields	NRR/DOEA	K. Baumann	NRR/DOEA

OPERATING REACTORS EVENTS BRIEFING 90-30
EVENTS ASSESSMENT BRANCH
LOCATION: 10B-11, WHITE FLINT
WEDNESDAY, DECEMBER 19, 1990, 11:00 A.M.

CINNA

LOSS OF ESFAS AUTOMATIC AND
MANUAL (PUSH-BUTTON) ACTUATION
CAPABILITY

GINNA UNIT 1
LOSS OF ESFAS AUTOMATIC AND
MANUAL (PUSH-BUTTON) ACTUATION CAPABILITY
DECEMBER 12, 1990

PROBLEM:

THE DC POWER SUPPLY FOR THE A AND B ESFAS LOGIC TRAINS WAS INTERRUPTED WHILE UNIT 1 WAS AT 3 PERCENT POWER. THE SYSTEM'S AUTOMATIC AND MANUAL (PUSH-BUTTON) ACTUATION CAPABILITIES WERE DISABLED.

CAUSE:

PERSONNEL ERROR INITIATED BY AN IMPROPER MAINTENANCE PROCEDURE THAT WAS NOT IDENTIFIED BY MULTIPLE LEVELS OF REVIEW.

SAFETY SIGNIFICANCE:

THE UNIT WAS OPERATED OUTSIDE ITS DESIGN BASIS FOR A PERIOD OF TWENTY MINUTES.

DESCRIPTION OF EVENTS:

- o WHILE STARTING UP FROM DECEMBER 11, 1990 REACTOR TRIP, AN UNDERVOLTAGE (UV) SIGNAL WAS RECEIVED ON THE NO. 14 SAFEGUARDS BUS, ONE OF TWO BUSES SERVED BY EDG "A".
- o EDG "A" STARTED BUT DID NOT LOAD SINCE NO UV CONDITION ACTUALLY EXISTED. A FAILED "BX" RELAY CARD INITIATED THE SPURIOUS UV SIGNAL.
- o TO FACILITATE THE REPLACEMENT AND TESTING OF THE FAILED RELAY CARD IT WAS NECESSARY TO DE-ENERGIZE THE UV CABINET. THIS WAS TO BE ACCOMPLISHED BY TRANSFERRING THE POWER SUPPLY FOR THE NO. 14 ESFAS BUS FROM ITS NORMAL OFFSITE SOURCE TO THE OPERATING EDG "A".
- o A WORK REQUEST INDICATING THE STEPS REQUIRED TO ACCOMPLISH THE TRANSFER WAS PREPARED BY THE ELECTRICAL PLANNER. THE WORK REQUEST INCLUDED MAINTENANCE PROCEDURE (MP) M-48.14.

CONTACT: NICK FIELDS SIGEVENT: YES
REFERENCE: 10#CFR 50.72's 20046, 20060, AND 20062 AND
REGION I MORNING REPORT 12/13/90

DESCRIPTION OF EVENTS (CONTINUED)

- o THE WORK REQUEST WAS REVIEWED BY THE PLANNER SCHEDULER (NON-TECHNICAL REVIEW) AND THE SHIFT SUPERVISOR (TECHNICAL REVIEW).
- o THE PROCEDURE WAS THEN PROVIDED TO THE CONTROL ROOM FOREMAN (CRF) WHO QUESTIONED THE PROPRIETY OF THE STEP REQUIRING THE OPENING OF TWO DC SWITCHES IN THE DC DISTRIBUTION PANELS ON THE BACK OF THE MAIN CONTROL BOARD.
- o AFTER ASSURANCES FROM THE PLANNER THAT THE PROCEDURE WAS PROPER, THE CRF OPENED THE SWITCHES. SUBSEQUENTLY, CONTROL ROOM ALARM L-31 INDICATED "SAFEGUARD DC FAILURE".
- o WHEN THE ON-COMING SHIFT SUPERVISOR WHO WAS IN THE CONTROL ROOM QUESTIONED THE ALARM, THE CRF RESPONDED THAT THE ANNUNCIATION WAS THE RESULT OF PERFORMING THE STEPS OF THE PROCEDURE. (THE ANNUNCIATOR RESPONSE PROCEDURES WERE NOT REFERENCED.)
- o THE CRF THEN OPENED THE NORMAL SUPPLY BREAKERS TO THE NO. 14 BUS MOMENTARILY DE-ENERGIZING THE BUS UNTIL THE EDG SUCCESSFULLY LOADED TO THE BUS
- o THE MOMENTARY INTERRUPTION OF POWER TO THE BUS DE-ENERGIZED NUCLEAR INSTRUMENTATION INTERMEDIATE RANGE CHANNEL N-36 WHICH COMPLETED THE REQUIRED 1-OUT-OF-2 LOGIC TO INITIATE A REACTOR TRIP FROM 3% R_x POWER.
- o FOLLOWING THE REACTOR TRIP, MP M-48.14 WAS COMPLETED ALLOWING THE REPOSITIONING (I.E., CLOSING) OF THE DC SWITCHES. THE ON-COMING SHIFT SUPERVISOR CONSULTED WITH VARIOUS PLANT PERSONNEL AND DETERMINED THAT DURING THE TWENTY MINUTE PERIOD THE DC SWITCHES WERE IN THE OPEN POSITION, THE PLANT WAS OPERATING OUTSIDE ITS DESIGN BASIS - THE AUTOMATIC AND MANUAL (PUSH-BUTTON) ESFAS SEQUENCE INITIATION WAS DISABLED.

DISCUSSION:

- o ALTHOUGH MAINTENANCE PROCEDURE M-48.14 HAD BEEN REVIEWED AND APPROVED FOR ALL MODES OF OPERATION, IT WAS INTENDED FOR USE ONLY DURING COLD SHUTDOWN. OPENING THE DC SWITCHES PREVENTS SPURIOUS SI INITIATION WHILE SHUTDOWN. ALSO DURING SHUTDOWN, THE INTERMEDIATE RANGE INSTRUMENTATION CHANNEL IS BLOCKED SO NO REACTOR TRIP SIGNAL IS INITIATED ON TRANSFER OF THE SAFEGUARDS BUSES TO THE EDG.

- o PLANT PERSONNEL FAILED TO RECOGNIZE THAT THE MAINTENANCE PROCEDURE WAS INAPPROPRIATE FOR USE AT POWER.
- o THE CRF FAILED TO PURSUE HIS INITIAL MISGIVINGS ABOUT REPOSITIONING THE DC SWITCHES TO THE ESFAS LOGIC TRAINS.
- o THE PLANNER FAILED TO RECOGNIZE THE IMPACT OF THE PROCEDURE ON THE AUTOMATIC INITIATION OF THE ESFAS.
- o OPERATORS FAILED TO PURSUE APPROPRIATE ANNUNCIATOR RESPONSE PROCEDURES WHEN THE L-31 ALARM WAS RECEIVED.

FOLLOWUP:

- o PRIOR TO UNIT START-UP, LICENSEE BRIEFED THE REGION AND NRR ON ITS PROPOSED CORRECTIVE ACTIONS
 - MAKE PLANT PERSONNEL AWARE OF THE NEED FOR A QUESTIONING ATTITUDE WITH ADEQUATE FOLLOW-UP
 - CONDUCT HUMAN PERFORMANCE ENHANCEMENT SYSTEM EVALUATION OF ALL ASPECTS OF PLANT STAFF AND CREW PERFORMANCE LEADING TO THIS EVENT
 - EVALUATE THE PROCEDURE DEVELOPMENT AND APPROVAL PROCESS AND IMPLEMENT ENHANCEMENTS
 - CONDUCT PERSONNEL TRAINING ON LESSONS LEARNED
 - MONITOR EFFECTIVENESS OF CORRECTIVE ACTIONS
- o REGION IS MONITORING LICENSEE'S ACTIONS

REACTOR SCRAM SUMMARY
 WEEK ENDING 12/16/90

1. PLANT SPECIFIC DATA

DATE	SITE	UNIT	POWER	SIGNAL	CAUSE	COMPLI- CATIONS	YTD	YTD	YTD
							ABOVE	BELOW	TOTAL
							15%	15%	
12/10/90	GRAND BULF	1	100	A	EQUIPMENT	NO	3	1	4
12/11/90	GINNA	1	97	A	EQUIPMENT	NO	4	1	5
12/12/90	RIVER BEND	1	80	A	EQUIPMENT	NO	3	0	3
12/12/90	COOK	2	100	A	EQUIPMENT	NO	2	0	2
12/12/90	FITZPATRICK	1	100	A	EQUIPMENT	NO	4	0	4
12/12/90	GINNA	1	2	A	EQUIPMENT	NO	4	2	6
12/13/90	DAVIS BESSE	1	100	A	EQUIPMENT	NO	2	0	2

REACTOR SCRAM SUMMARY
WEEK ENDING 12/09/90

1. PLANT SPECIFIC DATA

DATE	SITE	UNIT	POWER	SIGNAL	CAUSE	COMPLI- CATIONS	YTD	YTD	YTD
							ABOVE	BELOW	TOTAL
							15%	15%	
12/03/90	BYRON	1	98	A	EQUIPMENT	NO	3	0	3
12/05/90	YANKEE ROWE	1	100	A	EQUIPMENT	NO	1	1	2
12/05/90	DIABLO CANYON	0	100	A	EQUIPMENT	NO	1	0	1
12/06/90	SAH DODFRE	2	100	A	EQUIPMENT	NO	1	0	1
12/08/90	VOGTE	1	21	M	EQUIPMENT	NO	4	0	4

REACTOR SCRAM SUMMARY
WEEK ENDING 12/02/90

1. PLANT SPECIFIC DATA

DATE	SITE	UNIT	POWER	SIGNAL	CAUSE	COMPLI- CATIONS	YTD	YTD	YTD
							ABOVE	BELOW	TOTAL
							15%	15%	
12/01/90	BRAIDWOOD	1	99	A	EQUIPMENT	NO	4	0	4

II. COMPARISON OF WEEKLY STATISTICS WITH INDUSTRY AVERAGES

SCRAMS FOR WEEK ENDING 12/16/90

SCRAM CAUSE	POWER	NUMBER OF SCRAMS (5)	1990 WEEKLY AVERAGE YTD	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE	1986 WEEKLY AVERAGE (3)(4)
** POWER >15%							
EQUIP. RELATED	>15%	6	3.4	2.9	3.1	3.9	4.3
PERS. RELATED(6)	>15%	0	0.5	1.0	1.0	1.3	1.8
OTHER(7)	>15%	0	0.0	0.1	0.5	1.2	0.4
** Subtotal **		6	3.9	4.0	4.6	6.4	6.5
** POWER <15%							
EQUIP. RELATED	<15%	1	0.4	0.4	0.5	1.2	1.4
PERS. RELATED	<15%	0	0.1	0.3	0.3	0.6	0.8
OTHER	<15%	0	0.0	0.7	0.1	0.3	0.2
** Subtotal **		1	0.5	1.4	0.9	2.1	2.4
*** Total ***		7	4.4	5.4	5.5	8.5	8.9

MANUAL VS AUTO SCRAMS

TYPE	NUMBER OF SCRAMS	1990 WEEKLY AVERAGE YTD	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE	1986 WEEKLY AVERAGE
MANUAL SCRAMS	0	1.2	0.9	1.0	1.4	1.0
AUTOMATIC SCRAMS	7	3.2	3.8	4.5	7.0	7.9

11. COMPARISON OF WEEKLY STATISTICS WITH INDUSTRY AVERAGES

SCRAMS FOR WEEK ENDING
12/09/90

SCRAM CAUSE	POWER	NUMBER OF SCRAMS (5)	1990 WEEKLY AVERAGE YTD	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE	1986 WEEKLY AVERAGE (3) (4)
** POWER >15%							
EQUIP. RELATED	>15%	5	3.3	2.9	3.1	3.9	4.3
PERS. RELATED(6)	>15%	0	0.6	1.0	1.0	1.3	1.8
OTHER(7)	>15%	0	0.0	0.1	0.5	1.2	0.4
** Subtotal **		5	3.9	4.0	4.6	6.4	6.5
** POWER <15%							
EQUIP. RELATED	<15%	0	0.4	0.4	0.5	1.2	1.4
PERS. RELATED	<15%	0	0.1	0.3	0.3	0.6	0.8
OTHER	<15%	0	0.0	0.7	0.1	0.3	0.2
** Subtotal **		0	0.5	1.4	0.9	2.1	2.4
*** Total ***		5	4.4	5.4	5.5	8.5	8.9

MANUAL VS AUTO SCRAMS

TYPE	NUMBER OF SCRAMS	1990 WEEKLY AVERAGE YTD	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE	1986 WEEKLY AVERAGE
MANUAL SCRAMS	1	1.2	0.9	1.0	1.4	1.0
AUTOMATIC SCRAMS	4	3.2	3.8	4.5	7.0	7.9

II. COMPARISON OF WEEKLY STATISTICS WITH INDUSTRY AVERAGES

SCRAMS FOR WEEK ENDING 12/02/90

SCRAM CAUSE	POWER	NUMBER OF SCRAMS(5)	1990 WEEKLY AVERAGE YTD	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE	1986 WEEKLY AVERAGE (3)(4)
** POWER >15%							
EQUIP. RELATED	>15%	1	3.3	2.9	3.1	3.9	4.3
PERS. RELATED(6)	>15%	0	0.6	1.0	1.0	1.3	1.8
OTHER(7)	>15%	0	0.0	0.1	0.5	1.2	0.4
** Subtotal **		1	3.9	4.0	4.6	6.4	6.5
** POWER <15%							
EQUIP. RELATED	<15%	0	0.4	0.4	0.5	1.2	1.4
PERS. RELATED	<15%	0	0.1	0.3	0.3	0.6	0.8
OTHER	<15%	0	0.0	0.7	0.1	0.3	0.2
** Subtotal **		0	0.5	1.4	0.9	2.1	2.4
*** Total ***		1	4.4	5.4	5.5	8.5	8.9

MANUAL VS AUTO SCRAMS

TYPE	NUMBER OF SCRAMS	1990 WEEKLY AVERAGE YTD	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE	1986 WEEKLY AVERAGE
MANUAL SCRAMS	0	1.2	0.9	1.0	1.4	1.0
AUTOMATIC SCRAMS	1	3.1	3.8	4.5	7.0	7.9

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. COMPLICATIONS: RECOVERY COMPLICATED BY EQUIPMENT FAILURES OR PERSONNEL ERRORS UNRELATED TO CAUSE OF SCRAM.

3. PERSONNEL RELATED PROBLEMS INCLUDE HUMAN ERROR, PROCEDURAL DEFICIENCIES, AND MANUAL STEAM GENERATOR LEVEL CONTROL PROBLEMS.

4. "OTHER" INCLUDES AUTOMATIC SCRAMS ATTRIBUTED TO ENVIRONMENTAL CAUSES (LIGHTNING), SYSTEM DESIGN, OR UNKNOWN CAUSE.

OEAB SCRAM DATA

Manual and Automatic Scrams for 1986	-----	461
Manual and Automatic Scrams for 1987	-----	439
Manual and Automatic Scrams for 1988	-----	287
Manual and Automatic Scrams for 1989	-----	244
Manual and Automatic Scrams for 1990 (YTD 12/16/90)	----	214