

NOV 21 1991

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: OPERATING REACTORS EVENTS MEETING  
NOVEMBER 20, 1991 - MEETING 91-21

On November 20, 1991, we conducted an Operating Reactors Events meeting (91-21) to inform senior managers from the Commission staff, EDO, NRR, AEOD, SECY, ACRS, and regional offices of selected events that occurred since our last briefing on November 13, 1991. Enclosure 1 lists the attendees. Enclosure 2 presents the significant elements of the discussed events.

Enclosure 3 contains reactor scram statistics for the week ending 11/17/91. No significant events were identified for input into the NRC performance indicator program.

*KSI*

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

Enclosures: As stated

cc w/enclosures:  
See next page

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*KAB*  
EAB/DOEA  
KBaumann:kab  
11/20/91

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EAB/DOEA  
RDennig  
11/20/91

*RAB for*  
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PDR ORG NRRB  
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Operating  
Experience  
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cc:

T. Murley, NRR (12G18)  
F. Mireglia, NRR (12G18)  
W. Russell, NRR (12G18)  
F. Gillespie, NRR (12G18)  
J. Partlow, NRR (12G18)  
S. Varga, NRR (14E4)  
J. Calvo, NRR (14A4)  
G. Lainas, NRR (14H3)  
B. Boger, NRR (14A2)  
J. Zwolinski, NRR (13H24)  
M. Virgilio, NRR (13E4)  
D. Crutchfield, NRR (11H21)  
W. Travers, NRR (11B19)  
J. Richardson, NRR (7D26)  
A. Thadani, NRR (8E2)  
B. Grimes, NRR (9A2)  
F. Congel, NRR (10E2)  
J. Roe, NRR (10H5)  
M. Pohida, NRR (10E4)  
T. Martin, RI  
W. Kane, RI  
C. Hehl, RI  
S. Ebnetter, RII  
L. Reyes, RII  
B. Davis, RIII  
E. Greenman, RIII  
R.D. Martin, RIV  
B. Beach, RIV  
J.B. Martin, RV  
R. Zimmerman, RV  
P. Boehnert, ACRS (P-315)  
E. Jordan, AEOD (MN-3701)  
T. Novak, AEOD (MN-3701)  
L. Spessard, AEOD (MN-3701)  
E. Weiss, AEOD (MN-3206)  
S. Rubin, AEOD (MN-4106)  
M. Parper, AEOD (MN-9112)  
W. Bateman, EDO (17G21)  
R. Newlin, GPA (2G5)  
E. Beckjord, RES (NLS-007)  
A. Bates, SECY (16G15)  
G. Rammling, OCM (16H3)

C. Trammell (PD-V)  
T. Quay (PD-V)

bcc: INPO  
ATTN: J. Cowan  
1100 Circle 75, Suite 1500  
Atlanta, GA 30339

ENCLOSURE 1

LIST OF ATTENDEES

OPERATING REACTORS EVENTS FULL BRIEFING (91-21)

NOVEMBER 20, 1991

<u>NAME</u>	<u>OFFICE</u>	<u>NAME</u>	<u>OFFICE</u>
A. CHAFFEE	NRR/DOEA	F. BURROWS	NRR/DST
K. BAUMANN	NRR/DOEA	C. LIANG	NRR/DST
N. FIELDS	NRR/DOEA	R. GRAMM	NRR/DRIS
R. BENEDICT	NRR/DOEA	E. IGNE	ACRS
C. ROSSI	NRR/DOEA	R. LOBEL	EDO
J. JOHNSON	OCM/IS	V. BENAROYA	AEOD/DSP
K. HART	SECY	B. BOGER	NRR/DRPW
C. TRAMMELL	NRR/PD-V	D. MATTHEWS	NRR/DRIS

OPERATING REACTORS EVENTS BRIEFING 91-21  
EVENTS ASSESSMENT BRANCH  
LOCAT.JN: 10 B11, WHITE FLINT  
WEDNESDAY NOVEMBER 20, 1991, 11:00 A.M.

PALO VERDE, UNIT 3

PARTIAL LOSS OF OFFSITE POWER  
AND DECLARATION OF UNUSUAL  
EVENT (AIT)

PALO VERDE, UNIT 3  
 PARTIAL LOSS OF OFFSITE POWER AND  
 DECLARATION OF UNUSUAL EVENT  
 NOVEMBER 15, 1991

PROBLEM:

PARTIAL LOSS OF OFFSITE POWER.

CAUSE:

THE BOOM OF A CRANE MADE CONTACT WITH AND GROUNDED ONE OF THE TWO 13.8 KV FEEDERS SUPPLYING OFFSITE POWER TO STATION LOADS.

SAFETY SIGNIFICANCE:

- o POTENTIAL THREAT TO OCCUPATIONAL SAFETY OF PLANT MAINTENANCE PERSONNEL.
- o CHALLENGED EMERGENCY DIESEL GENERATORS.
- o POTENTIAL FIRE FROM FUELS IN AREA.

DISCUSSION:

- o ON NOVEMBER 14, 1991, THE "A" PHASE BUSHING OF THE MAIN TRANSFORMER OF PALO VERDE UNIT 3 WAS PROBABLY DAMAGED BY LIGHTNING.
- o ON NOVEMBER 15, 1991 WHILE THE UNIT WAS IN MODE 3, HOT STANDBY, MAINTENANCE PERSONNEL HAD COMPLETED HIGH VOLTAGE TESTING OF A REPLACEMENT BUSHING. A 35 TON CRANE WHICH WAS BEING USED TO POSITION THE BUSHING HAD BEEN LEFT UNATTENDED, BRIEFLY.
- o APPARENTLY THE WIND (LESS THAN 13 MPH) CAUSED THE BOOM OF THE CRANE TO SWING INTO THE 13.8 KV FEEDER LINE SUPPLYING OFFSITE POWER TO "A" TRAIN STATION LOADS.

CONTACT: N. FIELDS, NRR/EAB  
 REFERENCES: 10 CFR 50.72 #22247,  
 PNO-V-91-30, & PNO-V-91-30A

AIT: YES  
 SIGEVENT: TBD

- o THE FAULT CURRENT WHICH RESULTED WAS INSUFFICIENT TO TRIGGER PROTECTIVE RELAYING, HOWEVER IT DID CAUSE THE ASPHALT BENEATH THE OUTRIGGER PADS OF THE CRANE TO BEGIN SMOKING AND A FIRE ERUPTED APPROXIMATELY 4 MINUTES LATER.
- o ELECTRICAL MAINTENANCE FOREMAN INCORRECTLY REQUESTED SHIFT SUPERVISOR TO DEENERGIZE THE 13.8 KV FEEDER FOR TRAIN "B" LOADS (HE IMMEDIATELY CORRECTED HIS ERROR, BUT THE CORRECTION WAS NOT HEARD). THIS CAUSED THE LOSS OF TWO OF FOUR OPERATING REACTOR COOLANT PUMPS (RCPS) AND THE SUCCESSFUL START AND LOADING OF THE TRAIN "B" EMERGENCY DIESEL GENERATOR. THE "B" TRAIN FEEDER WAS REENERGIZED WITHIN APPROXIMATELY 8 MINUTES.
- o SUBSEQUENTLY, THE "A" TRAIN WAS CORRECTLY IDENTIFIED AND DEENERGIZED, RESULTING IN THE LOSS OF THE REMAINING TWO RCPS AND THE SUCCESSFUL START AND LOADING OF THE TRAIN "A" EDG. NATURAL CIRCULATION WAS VERIFIED TO BE ESTABLISHED IN ABOUT 18 MINUTES.
- o THE FIRE WAS EXTINGUISHED IN APPROXIMATELY 14 MINUTES, AND AN UNUSUAL EVENT (UE) WAS DECLARED AS A RESULT OF THE FIRE OCCURRING IN THE PROTECTED AREA AND LASTING LONGER THAN TEN MINUTES.
- o A "B" TRAIN REACTOR COOLANT PUMP WAS RESTARTED AND FORCED CIRCULATION WAS REESTABLISHED. THE UNIT REMAINED IN NATURAL CIRCULATION FOR APPROXIMATELY 38 MINUTES. THE UE WAS TERMINATED APPROXIMATELY 34 MINUTES AFTER ITS DECLARATION.

## FOLLOWUP:

- o REGION DISPATCHED AN AIT TO THE SITE ON NOVEMBER 16, 1991.
- o AN INFORMATION NOTICE IS UNDER CONSIDERATION DESCRIBING THIS EVENT.
- o THE AIT HAS COMPLETED ITS INSPECTION AS OF 10:00 A.M. (EST) ON NOVEMBER 20, 1991.

REACTOR SCRAM SUMMARY  
WEEK ENDING 11/17/91

## 1. PLANT SPECIFIC DATA (1)

DATE	SITE	UNIT	POWER	SIGNAL	CAUSE	COMPLI- CATIONS	(3)YTD		YTD TOTAL	
							ABOVE	BELOW		
							15%	15%		
11/13/91	DRESDEN	2		1	A	EQUIPMENT	NO	4	1	5
11/14/91	PALO VERDE	3	100	A		EQUIPMENT	NO	3	0	3
11/15/91	COOK	2	100	A		EQUIPMENT	NO	3	0	3
11/16/91	CLINTON	1	34	N		EQUIPMENT	NO	1	0	1
11/17/91	WATERFORD	3	100	A		EQUIPMENT	NO	4	1	5



II. COMPARISON OF WEEKLY STATISTICS WITH INDUSTRY AVERAGES

SCRAMS FOR WEEK ENDING  
11/17/91

SCRAM CAUSE	NUMBER OF SCRAMS	1991 WEEKLY AVERAGE (YTD)	1990 WEEKLY AVERAGE	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE
POWER GREATER THAN 15%						
EQUIPMENT RELATED	4	2.9	3.4	3.1	3.0	3.9
PERSONNEL RELATED (2)	0	0.6	0.5	1.0	1.0	1.3
OTHER (4)	0	0.0	0.0	0.1	0.4	1.1
Subtotal	4	3.5	3.9	4.2	4.4	6.3
POWER LESS THAN 15%						
EQUIPMENT RELATED	1	0.3	0.4	0.3	0.6	1.2
PERSONNEL RELATED (2)	0	0.2	0.1	0.3	0.4	0.6
OTHER (4)	0	0.0	0.0	0.0	0.2	0.3
Subtotal	1	0.5	0.5	0.6	1.2	2.1
TOTAL	5	4.0	4.4	4.8	5.6	8.4

MANUAL VS AUTO SCRAMS

TYPE	NO. OF SCRAMS	1991 WEEKLY AVERAGE (YTD)	1990 WEEKLY AVERAGE	1989 WEEKLY AVERAGE	1988 WEEKLY AVERAGE	1987 WEEKLY AVERAGE
MANUAL SCRAMS	1	0.8	1.2	0.9	1.1	1.4
AUTOMATIC SCRAMS	4	3.2*	3.2	3.9	4.5	7.0

\*Corrected to accommodate rounding-off



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	--(YTD 11/17/91)--	185