

NOV 25 1988

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

FROM: Wayne D. Lanning, Chief
Events Assessment Branch
Division of Operational Events Assessment

SUBJECT: THE OPERATING REACTORS EVENTS MEETING
November 22, 1988 - MEETING 88-46

On November 22, 1988, an Operating Reactors Events meeting (88-46) was held to brief senior managers from NRR, AEOD, OSP, RES, Commission Staff, and Regional Offices on events which occurred since our last meeting on November 15, 1988. The list of attendees is included as Enclosure 1.

The events discussed and the significant elements of these events are presented in Enclosure 2. Enclosure 3 presents a summary of reactor scrams. No significant events were identified for input to NRC's performance indicator program.

Original Signed by
Wayne D. Lanning

Wayne D. Lanning, Chief
Events Assessment Branch
Division of Operational Events Assessment

Enclosures:
As stated

cc w/Encl.:
See Next Page

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OFC	: EAB/DOEA	: C: EAB/DOEA	:	:	:	:	:
NAME	: MLReardon	: WDLanning	:	:	:	:	:
DATE	: 11/23/88	: 11/22/88	:	:	:	:	:

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cc:

T. Murley, 12G-18
F. Miraglia, 12G-18
J. Sniezek, 12G-18
E. Jordan, AEOD
J. Taylor, 17G-13
E. Beckjord, NL-007
W. Russell, RI
M. Ernst, RII
B. Davis, RIII
R. D. Martin, RIV
J. B. Martin, RV
W. Kane, RI
L. Reyes, RII
E. Greenman, RIII
L. Callan, RIV
D. Kirsch, RV
S. Varga, 14E-4
D. Crutchfield, 13A-2
B. Boger, 14A-2
G. Lainas, 14H-3
G. Holahan, 13H-4
L. Shao, 8E-2
J. Partlow, 7D-24
B. Grimes, 9A-2
F. Congel, 10E-4
E. Weiss, AEOD
T. Martin, EDO
J. Guttman, SECY
A. Thadani, 7E-4
S. Rubin, AEOD
J. Forsyth, INPO
R. Barrett, 10E-2
M. Harper, MNBB 4210

B. Buckley, 14B-20
E. Adensam, 14B-20
R. Martin, 14E-21
W. Butler, 14E-21
D. Pickett, 13D-18
J. Calvo, 13D-18



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

NOV 23 1988

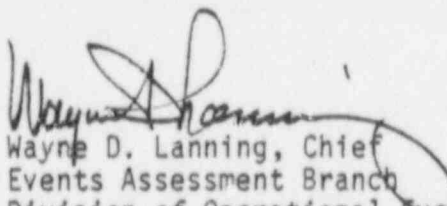
MEMORANDUM FOR: Chairman E. Rossi, Director
 Division of Operational Events Assessment

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Wayne D. Lanning, Chief
Events Assessment Branch
Division of Operational Events Assessment

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LIST OF ATTENDEESOPERATING REACTORS EVENTS BRIEFING (88-46)

November 22, 1988

<u>NAME</u>	<u>ORGANIZATION</u>	<u>NAME</u>	<u>ORGANIZATION</u>
S. Varga	NRR/DRP	C.E. Rossi	NRR/DOEA
B. Boger	NRR/ADRI	P. Baranowsky	NRR/DOEA
R. Capra	NRR/PD1-4	C. Berlinger	NRR/DOEA
W. Lanring	NRR/DOEA	B. Grimes	NRR/DRIS
C. Haughney	NRR/DRIS	J. Roe	NRR/DLPQ
C. Schulten	NRR/DOEA	M.L. Reardon	NRR/DOEA
G. Lainas	NRR/DRP	E. Adensam	NRR/PD2-1
J. Guttman	SECY	M. Fields	OSP
D. LaBarge	NRR/DRP		

OPERATING REACTORS EVENTS BRIEFING 88-46

EVENTS ASSESSMENT BRANCH

LOCATION: 12-B-11 WHITE FLINT

TUESDAY, NOVEMBER 22, 1988, 11:00 A.M.

WOLF CREEK

CONTROL RODS CLADDING PROBLEMS

PEACH BOTTOM UNITS 2 & 3

POTENTIAL COMMON MODE FAILURE
OF EDGs OUTPUT BREAKERS ON A
SEISMIC EVENT

BRUNSWICK UNITS 1 & 2

SCRAM WITH SUBSEQUENT EQUIPMENT
MALFUNCTION

WOLF CREEK
CONTROL RODS CLADDING PROBLEMS
NOVEMBER 8, 1988

PROBLEM

PLANNED INSPECTION DURING REFUELING OUTAGE REVEALED UNEXPECTED SWELLING OF CONTROL ROD CLADDING.

CAUSE

UNKNOWN

SAFETY SIGNIFICANCE

POTENTIAL FOR CONTROL ROD CLADDING FAILURE.

DISCUSSION

- o WOLF CREEK IN SHUTDOWN FOR THIRD REFUELING OUTAGE.
- o VISUAL INSPECTION REQUIRED DUE TO NEW DESIGN OF RODS USING HAFNIUM VERSUS SILVER - INDIUM - CADMIUM.
- o PRESENCE OF HAFNIUM IN REACTOR COOLANT AND RESULTS OF CALLAWAY TESTING IN 1987 PROMPT LICENSEE TO PERFORM EDDY CURRENT TESTING.
- o TEST RESULTS SHOW UNEXPECTED INDICATIONS ON INSIDE SURFACE OF CLADDING. PROFIOMETRY REVEALED SWELLING ON OUTSIDE SURFACE.
- o INDICATIONS AND SWELLING SEEM TO COINCIDE.
- o ALMOST ALL ROD CLUSTER CONTROL ASSEMBLIES (RCCAs) ARE AFFECTED.
- o LICENSEE REPLACING ALL RCCAs WITH NEW RCCAs OBTAINED FROM COMANCHE PEAK.
- o ONE SELECTED ROD TO BE SENT TO W LAB FOR HOT CELL TESTING - RESULTS EXPECTED BY END OF 1988.
- o RESULTS OF 1987 EDDY CURRENT TESTING AT CALLAWAY TO BE REASSESSED IN VIEW OF WOLF CREEK RECENT PROBLEMS.
- o FOURTEEN PWRs AND TWENTY BWRs ARE CURRENTLY EQUIPPED WITH HAFNIUM RODS.

FOLLOWUP

- o EAB FOLLOWING UP.
- o W TO ASSESS SAFETY SIGNIFICANCE OF CONTROL RODS CLADDING PROBLEMS BY 11/22/88.

CONTACT: D. OUDINOT

REFERENCE: MORNING REPORT 11/08/88

PEACH BOTTOM UNITS 2 & 3
POTENTIAL COMMON MODE FAILURE OF EDGs
OUTPUT BREAKERS ON A SEISMIC EVENT
SEPTEMBER 15, 1988

PROBLEM

DISCOVERY OF A GENERIC DEFECT THAT MAY PREVENT THE PROPER OPERATION OF 4160 VAC EMERGENCY BUS BREAKERS DURING A SEISMIC EVENT.

CAUSE

GENERIC DEFECT ON GENERAL ELECTRIC MANUFACTURED BREAKERS, MODELS M26, M36, AND AM4.16-250. FAILURE TO RECEIVE AND IMPLEMENT GE SERVICE ADVISORY LETTER (SAL) 073B-302.0

SAFETY SIGNIFICANCE

HAD THIS CONDITION EXISTED DURING A SEISMIC EVENT WITH THE NEED FOR EMERGENCY POWER, IT IS POSSIBLE THAT ONE OR MORE OF THE EMERGENCY DIESEL GENERATORS WOULD BE UNAVAILABLE, RESULTING IN A PARTIAL OR TOTAL STATION BLACKOUT.

DISCUSSION

- o DAMAGE OCCURS UPON ROLLING THE BREAKER OUT OF CABINET.
- o CELL SWITCH CONTROL LINKAGE OCCASIONALLY INTERFERES WITH BREAKER ASSEMBLY WHEN REMOVED FROM ITS CUBICLE.
- o UPON RACKING BREAKER IN, HAD NO INDICATION OF BREAKER POSITION IN THE CONTROL ROOM.
- o THE FAILURE OF THE LINKAGE DISABLES AUTOMATIC AND MANUAL CLOSURE CIRCUITRY.
- o OTHER 4.16KV BREAKER COMPARTMENTS CONTAINED DISTORTED LINKAGES.
- o LICENSEE DETERMINED THAT THERE WAS INADEQUATE ENGAGEMENT TO ENSURE LINKAGE INTEGRITY DURING A SEISMIC EVENT WHICH WOULD ELECTRICALLY DISABLE THE BREAKER.
- o FAILURE OF THESE BREAKERS USED ON THE EDG's COULD RESULT IN PARTIAL OR TOTAL SB DURING A SEISMIC EVENT.
- o NPRDS SEARCH OF GE MODEL AM4.16KV BREAKERS REVEALED TWO OTHER CELL SWITCH DISENGAGEMENT FAILURES.

CONTACT: J. RALEIGH

REFERENCE: 50.72 # 13488 AND LER # 88-022

- o THESE FAILURES WERE ALSO RELATED TO MAINTENANCE.
- o GE SAL OF 1973 NEVER RECEIVED BY PECO WHICH CONTAINED BREAKER UPGRADES TO PREVENT PROBLEM.
- o GE UPGRADE KITS WILL BE INSTALLED OVER NEXT 3 REFUELING OUTAGES.
- o A TOTAL OF 68 BREAKERS INVOLVED. LOOKED AT 50: 3 FAILED AND 2 PARTIAL FAILURES.
- o BREAKERS WILL BE FUNCTIONALLY TESTED UPON ROLLING BREAKER IN.
- o OPERATORS HAVE BEEN TRAINED IN RECOVERY ACTIONS AS WELL AS MECHANICALLY OPERATING THESE BREAKERS WHEN CONTROL POWER IS UNAVAILABLE.

FOLLOWUP

EAB WILL ASSESS THE NEED FOR GENERIC NOTIFICATIONS AS APPROPRIATE.

BRUNSWICK UNITS 1 & 2
SCRAM WITH SUBSEQUENT EQUIPMENT MALFUNCTION
NOVEMBER 16, 1988

PROBLEM

INVERTER POWER SUPPLY INTERRUPTED LEADING TO A REACTOR TRIP; ADDITIONAL OPERATING PROBLEMS WERE SUBSEQUENTLY NOTED.

CAUSE

HIGH VOLTAGE TRIP SETPOINT OF THE RECENTLY REPLACED INVERTER HAD DRIFTED DOWNWARD.

SAFETY SIGNIFICANCE

ONGOING PROBLEMS.

DISCUSSION

UNIT 2 WAS OPERATING AT 100% POWER.

- o INVERTER TRIPPED WHILE CONDUCTING AN EQUALIZING CHARGE OF THE "1B" BATTERY.
- o POWER LOST TO ONE OF TWO FEEDWATER FLOW INSTRUMENTS AND ONE OF FOUR STEAM FLOW INSTRUMENTS RESULTING IN FLOW MISMATCH.
- o BOTH FEEDWATER PUMP AND MAIN TURBINE TRIPPED ON HIGH REACTOR VESSEL LEVEL.
- o SUBSEQUENT ANOMALIES WERE:
 - HPCI INJECTION VALVE NOT OPENING,
 - ONE CONTROL ROD DID NOT GO TO "00",
 - ONE MSIV IN AN INTERMEDIATE POSITION FOR 5 MINUTES,
 - START-UP LEVEL CONTROL VALVE DID NOT OPEN.

UNIT 1 IS REFUELING:

- o UNABLE TO PRESSURIZE BETWEEN 2 MSIVs.
- o LEAKAGE PAST OUTBOARD VALVE OF ANOTHER PAIR OF MSIVs EXCEEDED 53 SCFH (LIMIT IS 11.5).

FOLLOWUP

- o RESIDENT INSPECTORS FOLLOWING RECENT EVENTS.

CONTACT: J. CARTER

REFERENCE: 50.72 #'s 14007, 14009, 13999, AND 14013

- THREE ASSIGNED ONSITE.
- ONE ADDITIONAL SCHEDULED.
- o CP&L HAS REVIEWED PRIOR OVERALL OPERATION.
 - RECOMMENDATIONS HAVE BEEN MADE.
 - DISCUSSED WITH REGIONAL ADMINISTRATOR (11/15/88).
 - STAFF HAS SENT LETTER TO LICENSEE REGARDING ACTIONS TO BE TAKEN BY CP&L.
 - MEETING SCHEDULED WITH HEADQUARTERS (11/22/88).
- o CP&L HAS ENGAGED MANAGEMENT CONSULTING FIRM (CRESAP).
- o SALP ASSESSMENT RECENTLY COMPLETED.

REACTOR SCRAM SUMMARY
WEEK ENDING 11/20/88

ENCLOSURE 3

1. PLANT SPECIFIC DATA

DATE	SITE	UNIT	POWER	SIGNAL	CAUSE	COMPLI- CATIONS	YTD ABOVE 15%	YTD BELOW 15%	YTD TOTAL
11/14/88	CALVERT CLIFFS	1	70 M		PERSONNEL	NO	3	0	3
11/14/88	OCONEE	3	100 A		EQUIPMENT	NO	2	0	2
11/14/88	OCONEE	3	39 A		EQUIPMENT	NO	3	0	3
11/15/88	BRAIDWOOD	1	95 M		EQUIPMENT	NO	3	0	3
11/15/88	BRAIDWOOD	2	80 M		EQUIPMENT	NO	10	4	14
11/16/88	PALO VERDE	2	10 A		EQUIPMENT	NO	0	1	1
11/16/88	BRUNSWICK	2	100 A		EQUIPMENT	NO	2	1	3
11/17/88	BRAIDWOOD	2	6 A		PERSONNEL	NO	10	5	15
11/18/88	SEQUOYAH	1	72 A		EQUIPMENT	NO	1	1	2