



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

MAR 15 1988

MEMORANDUM FOR: Charles E. Rossi, Director  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

FROM: Wayne Lanning, Chief  
Events Assessment Branch  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

SUBJECT: THE OPERATING REACTORS EVENTS MEETING  
March 15, 1988 - MEETING 88-11

On March 15, 1988 an Operating Reactors Events meeting (88-11) was held to brief senior managers from NRR, RES, AEJD and Regional Offices on events which occurred since our last meeting on March 8, 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 tabulation of long-term followup assignments to be completed, two events suggested for long term followup, and a summary of reactor scrams. One significant event was identified for input to NRC's performance indicator program.

Wayne Lanning, Chief  
Events Assessment Branch  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

Enclosures:  
As stated

cc w/Enclo.:  
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8803240393 880315  
PDR ORG NRRB  
PDR

IDAR-5-1  
OPERATING  
EXPERIENCE

cc:

T. Murley  
F. Miraglia  
E. Jordan  
E. Beckjord  
W. Russell, RI  
B. Davis, RIII  
J. Nelson Grace, RII  
R. D. Martin, RIV  
J. B. Martin, RV  
W. Kane, RI  
L. Reyes, RII  
E. Greenman, RIII  
J. Callan, RIV  
D. Kirsch, RV  
S. Varga  
D. Crutchfield  
B. Boger  
G. Laines  
G. Holahan  
L. Shao  
J. Partlow  
B. Grimes  
F. Congel  
E. Weiss  
S. Black  
T. Martin  
J. Stone  
R. Hernan  
H. Bailey  
J. Guttmann  
A. Thadani  
S. Rubin

J. Sniezek  
J. Forsyth, INPO  
K. Jabbour  
M. Thadani  
W. Butler

LIST OF ATTENDEES

OPERATING REACTORS EVENTS BRIEFING (88-11)

March 15, 1988

<u>NAME</u>	<u>ORGANIZATION</u>	<u>NAME</u>	<u>ORGANIZATION</u>
P. Baranowsky	NRR/DOEA	R. Lobel	NRR/DOEA
C. Schulten	NRR/DOEA	S. Varga	NRR/DRP
M.L. Reardon	NRR/DOEA	G. Klingler	NRR/PMAS
W. Jensen	NRR/DOEA	C.E. Rossi	NRR/DOEA
B. Boger	NRR/ADRI	J. Roe	NRR/DLPQ
D. Hood	NRR/PD 2-3	J. Thompson	NRR/DOEA
R. Wright	NRR/DRSP	K. Eccleston	NRR/ADR-2
B. Grimes	NRR/DRIS	C. Berlinger	NRR/DOEA
W. Minners	RES/DRPS	F.J. Miraglia	NRR/ADP
S. Rubin	AEOD/DOA	J. Zwolinski	NRR/DLPQ
C. McCracken	NRR/EAD	G.E. Gears	OSP
E.G. Adensam	NRR/DRPR	T.H. Novak	AEOD/DSP

OPERATING REACTORS EVENTS BRIEFING 88-11

LOCATION: 12-B-11 WHITE FLINT

TUESDAY, MARCH 15, 1988, 11:00 A.M.

THIS INFORMATION MAY ALSO BE OBTAINED BY DIALING EXTENSION 21449.

CATAWBA 1 & 2

DEGRADATION OF SERVICE WATER  
SYSTEM BY MARINE SHELLFISH  
MAKES FEEDWATER SYSTEM  
INOPERABLE

MULTI PLANTS

LEAKAGE PROBLEMS

SUSQUEHANNA 2

DEGRADATION OF INSULATION  
COVERINGS INSIDE CONTAINMENT

CATAWBA 1 & 2  
DEGRADATION OF SERVICE WATER SYSTEM  
BY MARINE SHELLFISH MAKES FEEDWATER SYSTEM INOPERABLE  
MARCH 9, 1988

PROBLEM

DEGRADED FLOW TO THE "A" AFW PUMP CAUSED BY ASIATIC CLAMS IN SERVICE WATER SYSTEM.

SIGNIFICANCE

POTENTIAL LOSS OF BOTH TRAINS OF THE AUXILIARY FEEDWATER SYSTEM AND OTHER SERVICE WATER-COOLED EMERGENCY SYSTEMS, ALSO APPLICABLE TO UNIT 1.

DISCUSSION

- o MARCH 9, 1988 - FEEDWATER TRANSIENT RESULTED IN SG "B" REACHING THE LOW-LOW LEVEL AND CAUSING A R<sub>X</sub> TRIP.
- o BOTH AFW PUMPS AUTO STARTED.
- o "A" TRAIN AFW SWITCHED TO NUCLEAR SERVICE WATER HEADER, REASON UNKNOWN, FLOW RATES (AFTER 20 MIN.) WERE APPROX 100 GPM TO SG'S "A" & "B", SG'S "C" & "D" NOT AFFECTED.
- o CAUSE OF DEGRADED FLOW FOUND TO BE ASIATIC CLAMS BLOCKING 1/3 OF HOLES IN STRAINER TO AFW PUMP "A".
- o AIT TEAM SENT TO SITE ON 03/10/88.
- o LICENSEE BELIEVES PROBLEM LIMITED TO STAGNANT PIPE LINES.
- o OTHER POSSIBLE AFFECTED LINES THAT ARE SAFETY-RELATED (AND STAGNANT) ARE (1) SW TO TURBINE-DRIVEN OIL COOLER ON TD AFW PUMP, AND (2) CONNECTION TO PRESSURIZATION SYSTEM FOR CONTAINMENT ISOLATION.
- o LICENSEE HAD NO PROGRAM IN PLACE TO SPECIFICALLY ADDRESS BIOFOULING.
- o CHLORINATION NOT PERMITTED BY STATE WATER AUTHORITY.
- o SERVICE WATER TO AFW WAS TESTED FOR VALVE OPERABILITY NOT FLOW RATE.
- o LICENSEE DID ROUTINE CLEANING TO SAFETY-RELATED HEAT EXCHANGERS.
- o REGION II HAS ISSUED A CAL TO LICENSEE.

CONTACT: J. THOMPSON  
REFERENCE: 50.72 #11704

FOLLOWUP

- o THE AIT INVESTIGATION IS CONTINUING.
- o MCGUIRE WAS NOTIFIED OF THE CATAWBA EVENT AND THEIR INSPECTIONS DID NOT REVEAL ANY PROBLEMS WITH THEIR OPEN WATER SYSTEMS.

MULTI PLANTS LEAKAGE PROBLEMS

LICENSEE RESPONSE TO REACTOR COOLANT  
LEAKS OF LESS THAN 1.0 GPM

PROBLEM

SMALL REACTOR SYSTEM LEAKS.

SIGNIFICANCE

- o SMALL LEAKS ARE A COMMON OCCURRENCE.
- o NEW DATA BY WESTINGHOUSE INDICATES FASTER BORIC ACID CORROSION.
- o BORIC ACID CORROSION HAS BEEN A PROBLEM AT TURKEY POINT 4, SALEM 2, ANO 2, AND SAN ONOFRE 2.

<u>PLANT</u>	<u>DATE</u>	<u>LEAK RATE &amp; LOCATION</u>	<u>LICENSEE ACTION</u>
WOLF CREEK	1-5	VESSEL HEAD INNER O-RING	CLOSED OFF LEAK DETECTION TUBE AND CONTINUED OPERATION.
WOLF CREEK	1-25	BOTH VESSEL HEAD O-RINGS	PLANT SHUTDOWN O-RINGS REPLACED.
SALEM 1	1-7	CONTROL ROD DRIVE SEAL WELDS	PLANT TAKEN FROM MODE 3 TO MODE 5 FOR REPAIR.
PALO VERDE 1	1-11	REACTOR COOLANT PUMP SHAFT SEALS	TAKEN FROM MODE 3 TO MODE 5 FOR REPAIR.

CONTACT: W. JENSEN

REFERENCES: MORNING REPORTS OF JANUARY 8, 11, 14, 25, FEBRUARY 12,  
26, MARCH 1, 3, 11 AND PRELEMINARY NOTIFICATION PNC-88-06  
OF JANUARY 22, 1988, AND MARCH 12, 1988 50.72 #11741 .

<u>PLANT</u>	<u>DATE</u>	<u>LEAK RATE &amp; LOCATION</u>	<u>LICENSEE ACTION</u>
VOGTLE 1	1-23	3/4 INCH SAFETY VALVE DRAIN	PLANT TAKEN FROM MODE 3 TO MODE 5 FOR REPAIR.
IP 2	2-11	.002 GPM CONOSEAL ON VESSEL HEAD	METAL BOX INSTALLED TO CATCH LEAK. CONTINUED OPERATION.
BRAIDWOOD 1	2-25	REACTOR COOLANT PUMP SHAFT SEALS	PLANT TAKEN FROM MODE 3 TO MODE 5 FOR REPAIR.
PRAIRIE ISLAND	3-10	.08 GPM INSTRUMENT LINE CANOPY WELD	PLANT SHUTDOWN.
DIABLO CANYON 1	3-12	MINIMAL SEAL WELD LEAKAGE AT CRDM	PLANT IN MODE 5 AND EVALUATING.



STANDARD TECHNICAL SPECIFICATION  
FOR LEAKAGE LIMITS

3.4.6.2 REACTOR COOLANT SYSTEM LEAKAGE SHALL BE LIMITED TO:

- A. NO PRESSURE BOUNDARY LEAKAGE,
- B. 1 GPM UNIDENTIFIED LEAKAGE,
- C. 1 GPM TOTAL PRIMARY-TO-SECONDARY LEAKAGE THROUGH ALL STEAM GENERATORS NOT ISOLATED FROM THE REACTOR COOLANT SYSTEM AND (500) GALLONS PER DAY THROUGH ANY ONE STEAM GENERATOR NOT ISOLATED FROM THE REACTOR COOLANT SYSTEM,
- D. 10 GPM IDENTIFIED LEAKAGE FROM THE REACTOR COOLANT SYSTEM, AND
- E. 40 GPM CONTROLLED LEAKAGE AT A REACTOR COOLANT SYSTEM PRESSURE OF  $2235 \pm 20$  PSIG.
- F. 1 GPM LEAKAGE AT A REACTOR COOLANT SYSTEM PRESSURE OF  $2235 \pm 20$  PSIG FROM ANY REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVE SPECIFIED IN TABLE 3.4-1.

PRESSURE BOUNDARY LEAKAGE

1.19 PRESSURE BOUNDARY LEAKAGE SHALL BE LEAKAGE (EXCEPT STEAM GENERATOR TUBE LEAKAGE) THROUGH A NONISOLABLE FAULT IN A REACTOR COOLANT SYSTEM COMPONENT BODY, PIPE WALL, OR VESSEL WALL.

CONTACT: W. JENSEN

SUSQUEHANNA UNIT 2  
DEGRADATION OF INSULATION COVERINGS INSIDE CONTAINMENT  
MARCH 14, 1988

PROBLEM

DELAMINATION OF ALUMINUM FOIL COVERING ON INSULATION COVERINGS INSIDE CONTAINMENT.

SIGNIFICANCE

POTENTIAL SOURCE OF ECCS, RHR RECIRCULATION FLOW BLOCKAGE.

DISCUSSION

- o WALKDOWN OF UNIT 2 INSIDE CONTAINMENT DURING REFUELING OUTAGE, DISCOVERED EXTENSIVE DELAMINATION OF ALUMINUM FOIL COVERING ON PIPE INSULATION.
- o INSULATION CONSISTS OF FIBERGLASS BATS COVERED BY ALUMINUM FOIL (1 MIL THICK),
- o APPROXIMATELY 5000 FT<sup>2</sup> (UPPER BOUND) IN UP TO 300 LOCATIONS.
- o SUPPLIED BY ALPHA ASSOCIATES THROUGH BECHTEL.

FOLLOWUP

- o LICENSEE TO FILE PART 21.
- o EAB DETERMINING GENERIC APPLICABILITY.

CONTACT: P. BARANOWSKY

LONGTERM FOLLOWUP ASSIGNMENTS TO BE COMPLETED

<u>ORGANIZATION</u>	<u>LONGTERM FOLLOWUPS OUTSTANDING</u>				
	<u>02/16/88</u>	<u>02/23/88</u>	<u>03/01/88</u>	<u>03/08/88</u>	<u>03/15/88</u>
AEDD	0	0	1	1	1
EAB	2	2	2	2	2
EMTB	0	1	0	0	1
ESGE	1	1	1	1	1
HLFB	1	1	1	1	1
ICSB	2	2	2	2	2
OGCB	1	1	1	1	0
OTSB	1	1	1	1	1
FD2-2	1	1	1	1	1
FD2-3	1	1	1	1	1
FD3-2	1	1	1	1	1
FD5	2	2	2	2	2
R111	1	1	1	1	1
RVIB	4	3	2	2	3
SELB	5	6	5	5	5
SFLB	5	5	5	5	5
SRXB	3	4	3	3	4
TOTAL	<u>31</u>	<u>33</u>	<u>30</u>	<u>30</u>	<u>32</u>

SUGGESTED LONGTERM FOLLOWUP

DATE OF PLANT NAME AND UNIT EVENT	SIGNIFICANT INITIAL FOLLOWUP ASSIGNMENT EVENT	SUGGESTED RESOLUTION	SUGGEST TRANSFER TO:	EXPECTED COMPLETION DATE
01/22/88 PEACH BOTTOM 3	.F. CRACKING IN 20TH SHROUD SUPPORT ACCESS HOLE COVERS. ATTRIBUTED TO HIGH RESIDUAL STRESS AND WATER CHEMISTRY. MATERIALS BRANCH EVALUATING PROBLEM. INFORMATION NOTICE HAS BEEN PREPARED.	03/11/88 TAC # 67341 ISSUED FOR: COVER PLATE WELD NBR/EMTB & S41B CRACKING - PEACH BOTTOM 3 - GENERIC ISSUE. EMTR CONTACT: W. HAZELTON		/ /
02/22/88 OYSTER CREEK 1	.F. RPS SCRAM INSTRUMENT BARKSDALE SETPOINT DRIFT.	TAC ASSIGNED FOR BARKSDALE INSTRUMENT FAILURES. FOLLOWUP VENDOR CORRECTIVE ACTIONS TO DETERMINE GENERICA APPLICABILITY OF MICRO SWITCH COMPONENT FAILURES IN BARKSDALE INSTRUMENTS, IF ANY.	NBR/RV1B	/ /

PERFORMANCE INDICATORS SIGNIFICANT EVENTS

PLANT NAME	EVENT DATE	EVENT DESCRIPTION	QTR SIGNIFICANCE
CATAWBA 1	03/09/88	RI TRIP DUE TO L-L ON 'A' S/G. AFW PUMP 'A' AUTO SWITCH TO SERVICE WATER SYSTEM, FLOW DEGRADATION TO 100 GPM CAUSED BY ASIATIC CLAMS BLOCKING A THIRD OF THE STRAINER HOLES	1 POTENTIAL FOR OR ACTUAL DEGRADATION OF SAFETY-RELATED EQUIPMENT
CATAWBA 2	03/09/88	RI TRIP DUE TO L-L ON 'A' S/G. AFW PUMP 'A' AUTO SWITCH TO SERVICE WATER SYSTEM, FLOW DEGRADATION TO 100 GPM CAUSED BY ASIATIC CLAMS BLOCKING A THIRD OF THE STRAINER HOLES	1 POTENTIAL FOR OR ACTUAL DEGRADATION OF SAFETY-RELATED EQUIPMENT

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 109 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.

REACTOR SCREEN SUMMARY  
 WEEK ENDING 03/13/88

I. PLANT SPECIFIC DATA

DATE	SITE	UNIT	POWER	STAND.	CAUSE	COMPLI- CATIONS	YTD ABOVE 15%	YTD BELOW 15%	YTD TOTAL
03/09/88	HARRIS	1	100	A	EQUIPMENT	NO	1	0	1
03/09/88	CATAWBA	2	21	A	EQUIPMENT	YES	1	0	1
03/09/88	LASALLE	2	85	A	EQUIPMENT	NO	1	0	1
03/10/88	BINNA	1	22	A	PERSONNEL	NO	1	1	2
03/10/88	SURRY	1	1	M	EQUIPMENT	NO	1	1	2
03/11/88	BRAIDWOOD	1	0	M	EQUIPMENT	NO	0	1	1
03/12/88	SOUTH TEXAS	1	0	M	PERSONNEL	NO	0	2	2
03/12/88	MILLSTONE	1	100	A	EQUIPMENT	NO	1	0	1
03/12/88	BRAIDWOOD	2	0	M	PERSONNEL	NO	0	2	2
03/13/88	LASALLE	1	15	M	PERSONNEL	NO	0	1	1
03/13/88	NINE MILE PT	2	98	A	EQUIPMENT	NO	3	0	3

SUMMARY OF COMPLICATIONS

SITE	UNIT	COMPLICATIONS
CATAWBA	2	RI TRIP DUE TO L-L LEVEL ON 'A' S/G. AFW PUMP 'A' AUTO SWITCH TO SERVICE WATER SYSTEM, FLOW DEGRADATION TO 100 GPM CAUSED BY ASIATIC CLAMS BLOCKING A THIRD OF THE STRAINER HOLES

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FROM: Wayne Lanning, Chief  
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The events discussed and the significant elements of these events are presented in Enclosure 2. Enclosure 3 presents a tabulation of long-term followup assignments to be completed, two events suggested for long term followup, and a summary of reactor scrams. One significant event was identified for input to NRC's performance indicator program.

Wayne Lanning, Chief  
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MAR 16 1988

MEMORANDUM FOR: Charles E. Rossi, Director  
Division of Operational Events Assessment  
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FROM: Wayne Lanning, Chief  
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NAME	:MLReardon	:WLanning	:	:	:	:	:
DATE	:03/15/88	:03/ /88	:	:	:	:	: