50-397

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

June 19, 1998

MEMORANDUM TO: Jeffrey Shackelford, Senior Reactor Analyst

FROM: Ellis W. Merschoff, Regional Administrator

SUBJECT: AUGMENTED INSPECTION TEAM AT WASHINGTON NUCLEAR PLANT-2

On June 17, 1998, at 2:14 p.m., PDT, with the reactor in Mode 4, cold shutdown, the license declared an Unusual Event, in response to extensive flooding of two emergency core cooling system pump rooms in the reactor building from a failed fire main valve. The flooding was stopped by securing all fire pumps. The Hanford Fire Department dispatched fire trucks to the site to provide firefighting capability while the fire pumps were secured. The flooding did not interrupt or challenge core cooling, which was being provided by a residual heat removal pump throughout the event. The initiating event, cause of the valve failure, and plant and system responses were complex. Additionally, two divisions of the emergency core cooling system were affected, and the event may involve possible adverse generic implications. Therefore, in accordance with Management Directive 8.3, an augmented inspection team (AIT) was formed to followup on this event.

You are appointed the leader for this AIT. The AIT is tasked with developing a better understanding of the event chronology, plant and system responses, actions of operators involved, the safety and risk significance of the event, as well as, the extent of equipment damage, the root causes of the event, and the corrective actions. The team is expected to perform fact finding in order to address the following.

SEQUENCE OF EVENTS TIMELINE

- Develop a detailed timeline for the sequence of events.
- Determine the initiating event and contributing factors for the event.
- Determine what preexisting conditions, both known and unknown, contributed to the event.
- Determine, to the extent possible, the specific response of the fire protection system with respect to actuation and failure of system valves.
- Determine how many gallons of fire water were spilled during the event.

PLANT AND SYSTEM RESPONSE

- Determine how the flooding experienced compared to design basis analysis and individual plant examination results.

- Determine how reactor building integrity performed relative to design basis event analysis, particularly with respect to design barrier (e.g., doors and sumps) and interconnection (e.g., sumps, floor drains, penetrations, doors) performance.

- Determine whether plant system and structure configuration control problems resulted in, contributed to, or complicated recovery from the event.

- Identify the cause of the Division II 125 vdc bus ground.

- Identify the cause to the fire protection system preaction valve actuation.

- Determine whether the fire protection system components performed as designed and whether there were any pre-existing indications of valve failure.

- Ascertain the fire protection system capabilities (that existed prior to the event) to respond to an actual fire, including any recovery actions.

- Ascertain the current fire protection system capabilities to respond to an actual fire, including any compensatory actions.

- Establish the cause and extent of fire protection system damage.

- Determine whether the licensee was aware of any fire protection system water hammer events and the status of any corrective actions to prevent recurrence.

- Identify which components and systems challenged by the event were within the scope of the Maintenance Rule program.

- Determine whether there were any material condition problems, (known and unknown) which contributed to the event or complicated operator actions in response to the event.

- Determine the extent of damage to affected components caused by the flooding.

- Identify any common mode failure sequences and other system vulnerabilities from the component failures identified.

OPERATOR ACTION AND PROCEDURE USE AND ADHERENCE

- Determine whether the diesel generator room work activity was properly planned, controlled, and conducted.
- Determine whether the operating crew adhered to governing procedures during the event.
- Determine whether the operating crew correctly identified the indications of event initiators and system actuations during the first moments of the event.
- Determine whether the operating crew's initial response to the event was timely and appropriate.
- Determine whether operating crew communications met licensee expectations during the event.
- Determine whether personnel actions contributed to the cause of the fire protection system actuation, the flooding, or the spread of the flooding.
- Determine whether appropriate compensatory measures were identified and established in a timely manner when the fire protection system was secured, including fire watch postings.

EMERGENCY CLASSIFICATION

- Determine whether the licensee's declaration of an unusual event was consistent with the governing emergency procedure, and was declared in a timely manner.
- Determine whether the licensee provided the required offsite notifications of the unusual event.
- Ascertain the effectiveness of the licensee's decision to activate the technical support center and operations support center to control ongoing personnel access and work activities.

CONTAINMENT INTEGRITY

- Determine whether primary containment integrity was maintained when required.

RADIOACTIVE EFFLUENTS

- Determine whether any radioactive liquids were discharged to the environs, such as the storm drain system and, if so, whether any such discharges exceeded regulatory limits and if all required offsite notifications were completed.

- Determine whether discharges of radioactive materials occurred through "non-standard" release paths and, if so, whether any affected areas that may have been contaminated were characterized and identified for decommissioning records.

ROOT CAUSE AND CORRECTIVE ACTION

- Determine whether the fire protection system restoration was appropriate and adequate compensatory measures were implemented.
- Analyze the licensee's root cause investigation and determine whether it properly identified all significant findings in the areas above.
- Determine whether the licensee's corrective actions were appropriate for the findings.
- Determine whether the licensee's analysis and corrective actions were sufficiently broad, and considered management expectations, process, and human performance.

During the conduct of this inspection, the team will utilize the findings of the licensee's internal event review process to the maximum extent possible. This is in keeping with the NRC's emphasis on encouraging licensee self-assessment and corrective actions. Licensee-provided information need not be independently developed; however, portions of the information should be verified to confirm the licensee's investigation.

It is not the responsibility of the AIT to examine the regulatory process (to determine whether that process contributed directly to the cause or course of the event). Additionally, the scope of the investigation does not include determining whether any NRC rules or requirements were violated, addressing licensee actions related to plant restart, or addressing the applicability of generic safety concerns to other facilities.

This memorandum designates you as the AIT Leader. Your duties will be as specified in Management Directive 8.3. The team composition will be discussed with you directly. During the performance of the AIT, designated team members are separated from their normal duties and report directly to you. The AIT is to be conducted in accordance with NRC Manual Chapter 93800, "Augmented Inspection Team Implementing Procedure." The team is to emphasize fact-finding in its review of the circumstances surrounding the event. Safety concerns identified that are not directly related to the event should be reported to the Region IV office for appropriate action.

The AIT should report to the site on June 19, 1998. Tentatively, the inspection should be completed by June 24, 1998, with a report documenting the results of the inspection issued by July 19, 1998. While the team is on site, you will provide daily status briefings to Region IV management, who will coordinate with NRR to ensure that all other parties are kept informed.

Should you have any questions concerning this Charter, contact Arthur T. Howell III, Director, Division of Reactor Safety (817)860-8180.

cc:
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C. Poslusny, NRR
P. Qualls, NRR
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M. Fields, NRR
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bcc to DCD (IE10)

bcc:
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K. Brockman
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RIV:ABC\EB	DRPW/PDIV-2/NRR	C:PSB:DSSA/SCSB/NRR	AEOD/SPB/C/RAB	D:DRS
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06/18/98	06/18/98	06/18/98	06/19/98	6/ 9/98

D:DRP	DRA	RA		
TPGwynn	JEDyer	EWMerschoff		
06/18/98	6/ /98	6/ /98		

*concurred per e-mail OFFICIAL RECORD COPY

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ATTACHMENT 2

Detailed Sequence of Events for the June 17, 1998 Fire Main Rupture and Flooding Event at WNP-2 (ALL TIMES ARE PACIFIC DAYLIGHT)

TIME	DATE	SOURCE	DESCRIPTION
0715	6/17	a. Control Room log	Initial plant status: Mode 4; RHR Pump 2A providing core cooling; plant startup planned for later in the shift.
1100	6/17	a. Ignition Source Permit (98-203) b. Work Order (KFC9) c. Transient Combustible Permit (98-165) d. interviews (workers)	Ignition Source Permit issued and work order approved for diesel generator room cutting and grinding activity.
1300	6/17	a. CAS printer b. Card Reader printout c. HP fire door type d. interview notes	A security officer (fire tour) and quality assurance (plant walkdown) individual transited through RHR C pump and LPCS pump rooms.
1324	6/17	a. interview notes	A fire watch was posted at door to DG-2.
1330	6/17	a. Work Order (KFC9)	Four WIN maintenance personnel began hot work in DG 2 per work order KFC 901.
1340	6/17	a. Maintenance Incident Review b. interview notes	A mechanic contacted Control Room Shift Manager concerning smoke from work activity in DG 2 room that was flowing into laundry room. The control room advised the mechanic to continue work.
1343:49	6/17	a. TDAS record	TDAS record of drop in Fire Main Pressure from normal, 142 PSIG, to low pressure, 33 PSIG.
1345	6/17	a. Control Room Log	Control Room fire alarms System 66 (Pre-action DG Bldg. 441 corridor/Store Room) and System 81 (Pre-action DG2/Day Tank Room), All Fire Pumps started.
1345:25	6/17	a. alarm type	RHR C Pump Room Water Level High Alarm received
1345:45	6/17	a. Control Room log	Control Room received RHR C Pump Room Water Level High Alarm, Entered EOP 5.3.1 on ECCS Pump Room high water level.
1348	6/17	a. Control Room log	Loss of RHR-P-3, started RHR-P-2B in Suppression Pool Cooling to ensure system pressure.
1348	6/17	a. Ops Crew Debrief	Received a Reactor Bldg. radiation high alarm and entered EOP 5.3.1. due to ARM-RIS-11 reading greater than 10000 Mr/Hr (down scale light also on). Alarm is believed to be caused by flooding.
1351	6/17	a. Control Room log	Isolated Fire Protection Systems 66 and 81.
1352	6/17	a. Control Room log	Control Room received report of water seepage around the door of the RCIC Pump Room from RHR-C Pump Room.

TIME	DATE	SOURCE	DESCRIPTION
1352:04	6/17	a. Control Room log b. alarm typer	Received E773-B1-2 battery ground circuit alarm
1354	6/17	a. Control Room log	Control Room received report that Reactor Bldg. NE stairway is flooded and that the fire main riser is ruptured. Directed all Fire Pumps to be stopped.
1358:05	6/17	a. alarm typer	Fire Pump FP-P-2B stopped.
1358:12	6/17	a. alarm typer	Fire Pump FP-P-2A stopped.
1358:28	6/17	a. TDAS trace	TDAS record of last Circ Water Pump House Fire Pump stopped.
1359	6/17	a. Control Room log	Control Room received report that Reactor Bldg. NE stairway water level is approaching 441' elevation.
1401:57	6/17	a. Control Room log b. alarm typer	Control Room received LPCS Pump Room Water Level High Alarm, entered EOP 5.3.1 on ECCS Pump Room high water level.
1401:40	6/17	a. TDAS trace	TDAS record of last Fire Pump stopped.
1401:59	6/17	a. TDAS trace	TDAS record of LPCS Pump Room Water Level High Alarm.
1402	6/17	a. Control Room log	Control Room received report that water level in Reactor Bldg. NE stairwell has stopped rising. Started Pump LPCS-P-1 to maintain system operability, stopped Pump LPCS-P-2.
1409	6/17	a. Control Room log	Control Room opened breaker to Pump LPCS-P-2 (LPCS keepfill pump).
1412	6/17	a. Control Room log	Control Room received report that RCIC Pump Room has very little water in leakage from RHR C Pump Room.
1414	6/17	a. Control Room log	WNP-2 Declared an UNUSUAL EVENT due to flooding. OSC and TSC are being activated by Team "C" (EAL 9.1.U.1, judgment of Emergency Director).
1415	6/17	a. Control Room log	Control Room stopped Pump LPCS-P-1, removed fuses from control power circuit for Pump LPCS-P-1 due to rising water level in LPCS Pump Room.
1415	6/17	a. Chemistry log	Initial grab sample taken of water in Reactor Bldg. NE stairwell (98-1972).
1418	6/17	a. Notification Checklist b. Security log entry	ANS Autodialer activated.

TIME	DATE	SOURCE	DESCRIPTION
1419	6/17	a. Control Room log	Control Room declared Secondary Containment inoperable to open Doors to aid in dewatering the reactor bldg.
1421	6/17	a. Control Room log	Required Offsite notifications completed as required by the UNUSUAL EVENT.
1427	6/17	a. Security log entry	Hanford Fire Department notified. Fire engines were dispatched to provide compensatory fire protection.
1428	6/17	a. Chemistry log	Grab sample analysis count started for Reactor Bldg. NE stairwell water (98-1972).
1428	6/17	a. Notification Checklist	Confirmation of all off-site notifications complete.
1433	6/17	a. Control Room log	Control Room received a report that 2' of water is in the LPCS Room with level rising. Received a report that the RHR-P-2C pump and motor are submerged. Water is at 433' and rising slowly.
1434	6/17	a. Control Room log	One hour notification to the NRC on the UNUSUAL EVENT and the 50.72 non-emergency notification completed.
1443	6/17	a. Control Room log	Hanford Fire Department arrived on station at WNP-2 to support the loss of the Fire Protection System.
1444	6/17	a. Control Room log	Control Room received a report that the water level in RHR-C Pump Room is 8' greater than the maximum safe operating limit. The Pump RHR-P-2C breaker has been racked out.
1448	6/17	a. Control Room Log	OSC activated.
1452	6/17	a. TSC log	TSC declared operational.
1456	6/17	a. Control Room log	The LPCS Pump Room water level has been verified to be less than the maximum safe operating level.
1500	6/17	a. Control Room log	Commenced pumping the Reactor Bldg. NE stairwell water to storm drains after a satisfactory preliminary chemistry free-release sample (98-1972).
1504	6/17	a. Control Room log	Transferred Emergency Director duties to the TSC.
1508	6/17	a. Control Room log	Control Room received a report that the LPCS Pump Room is 6" greater than the maximum safe operating level.
1510	6/17	a. Control Room log	Entered EOP 5.3.1 due to Secondary Containment at 0 PSIG. This is expected with Secondary Containment open. Secondary Containment remains inoperable.

TIME	DATE	SOURCE	DESCRIPTION
1512	6/17	a. Control Room log	TSC reported personnel accountability completed.
1515	6/17	a. Control Room log	Control Room received a report that Valve FP-V-29D, in the NE Stairwell, has a split in the body and is the source of the flooding. Pumping out the LPCS Pump Room has lowered the water level by 3".
1517	6/17	a. Crash Network System Log	Crash call initiated to inform offsite agencies of transfer of Emergency Director duties.
1520	6/17	a. Control Room log	Temporary pumps are pumping water from the LPCS Pump Room to the RHR-C Pump Room.
1520	6/17	a. Chemistry log	Grab sample taken at discharge to pump hose (98-1973).
1533	6/17	a. Control Room log	The TSC reports that the RHR-C pump room water is being routed, via submersible pump, to sump T-4 (under the main condenser). The water level in the Reactor Bldg. NE stairwell is decreasing.
1535	6/17	a. Chemistry log	Initial sample count completed of water from the Reactor Bldg. NE stairwell indicated no detectable activity (98-1972).
1537	6/17	a. Control Room log	The CRS has entered the following PPMs: EOP 5.3.1 on high radiation (ARM-RIS-11) and high water level in RHR-C Room. 5.5.27, 4.11.2.1, 4.12.4.10, 4.8.7.1, 4.7.8.1, and 4.12.2.2.
1538	6/17	a. Control Room log	I&C disconnected ARM-RIS-11 due to false alarms because it is flooded.
1541	6/17	a. Control Room log	Control Room received a report that the LPCS pump room water level is rising again.
1541	6/17	a. Chemistry log	Count started on grab sample (98-1973).
1559	6/17	a. TSC log	Control room requested review by TSC to determine if we meet conditions of EAL 8.4.A.5.
1608	6/17	a. Control Room log	Started Pump FP-P-3 to confirm the leak in the Fire Protection system has been isolated. No increase in the drainage from Valve FP-V-29D was observed.
1620	6/17	a. Chemistry log	A review of in-progress count for 98-1973 indicated the possibility of Co-60.
1620	6/17	a. Control Room log	Stopped pumping water from the Reactor Bldg. NE stairwell to storm drains, after increasing activity levels in the water. Aligned the discharge to T-SUMP-T4.

TIME	DATE	SOURCE	DESCRIPTION
1620	6/17	a. TSC log	Decision made by TSC to remain at Unusual Event classification.
1634	6/17	a. Chemistry log	A third grab sample, 98-1974 was taken after the discharge was terminated.
1647	6/17	a. Control Room log	Recommenced pumping the Reactor Bldg. NE stairwell and RHR-C Pump Room to T-SUMP-T4.
1650	6/17	a. Chemistry log	Count of sample 98-1973 completed indicating Co-60 at 5.21E-08 µCi/ml.
1653	6/17	a. Chemistry log	Grab sample 98-1974 count was started.
1657	6/17	a. Control Room log	Valves FP-V-19, FP-V-17P, and FP-V-17G have been Red Tagged closed to isolate Valve FP-V-29D.
1702	6/17	a. Control room log	Completed isolating the LPCS Pump Room from the RHR-C Pump Room by closing FDR-V-609 (cross-tie between the rooms). This had been attempted before unsuccessfully.
1725	6/17	a. Chemistry log	A composite sample from the discharge to the storm drain was taken (98-1975).
1800	6/17	a. Chemistry log	Third grab sample count completed (98-1974) and indicated no activity.
1802	6/17	a. TSC log	TSC determines time to boil estimate to be 2.78 hours if shutdown cooling capability is lost.
1811	6/17	a. Chemistry log	Composite sample analysis count started (98-1975).
1832	6/17	a. Control Room log	Ground alarm on E-B1-2 cleared (reasons for ground remains unknown at this time).
1903	6/17	a. Control Room log	Reactor Building water level reports in TSC: RHR-C room at 428'7" and dropping approximately 6"/hr RB NE stairwell at 428' and dropping approximately 1'/hr LPCS pump room at 426' and dropping approximately 1'/hr.
1911	6/17	a. Chemistry log	Composite sample analysis completed indicating no radioactivity (98-1975).
2059	6/17	a. Control room log	Fire Protection Pre-action Systems 66 and 81 have been drained and returned to service.
2144	6/17	a. Control room log	RHR-C Pump Room Water Level High Alarm has cleared.
2151	6/17	a. Control Room log	LPCS Pump Room Water Level High Alarm has cleared.
2205	6/17	a. Control Room log	RHR and LPCS pump rooms have been pumped down.

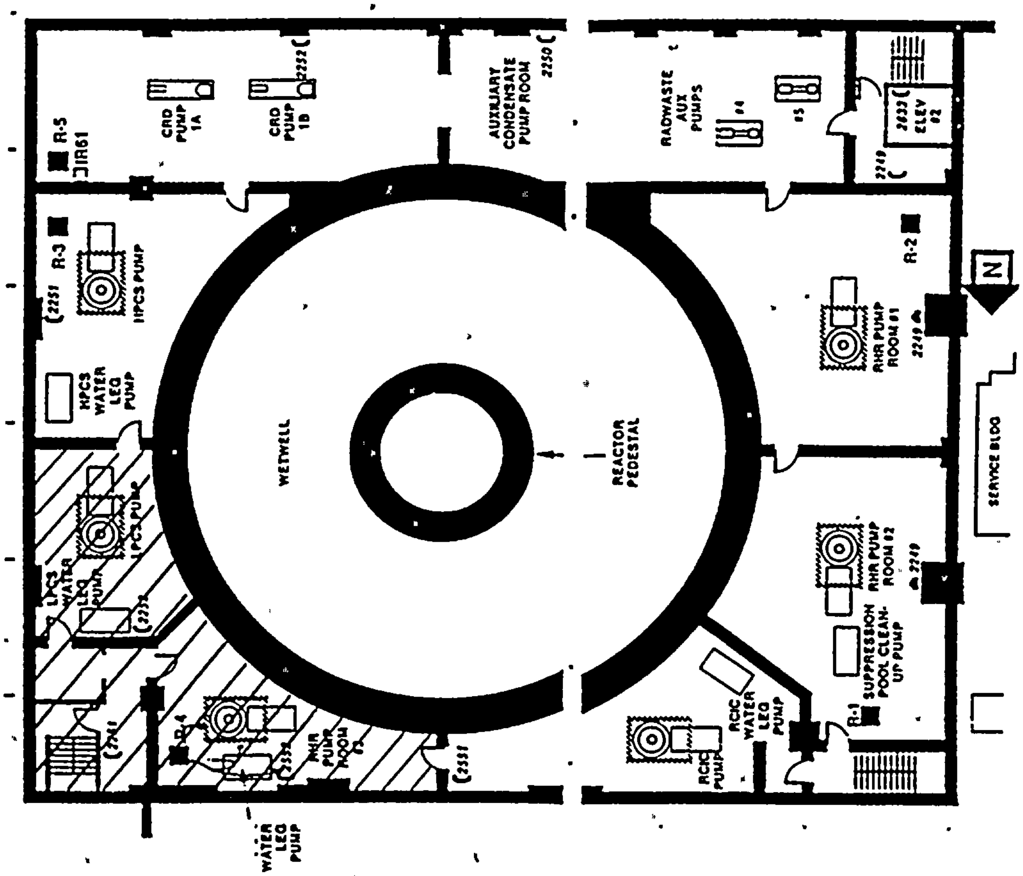
TIME	DATE	SOURCE	DESCRIPTION
2254	6/17	a. Control room log	Exited PPM 4.12.4.10 (Reactor Bldg. Flooding).
0504	6/18	a. Control room log	Opened Valve FDR-V-609 to continue pumping of Reactor Bldg. sumps.
0730	6/18	a. Control Room log	Fire protection system remains inoperable.
1139	6/18	a. Control Room log	Completed filling and venting the fire protection header in the Reactor Bldg. NE stairwell.
1727	6/18	a. Control room log	Transferred Emergency Director duties to Shift Manager.
1727	6/18	a. Control Room log	Deactivated TSC and OSC.
1510	6/19	a. Control room log	Valve FDR-V-609 closed.
1815	6/19	a. Classification Notification Form	Secured from Unusual Event.
1815	6/19	a. Classification Notification Form	NRC notified of event termination.
1830	6/19	a. Control room log	Offsite agencies notified of classification termination.

ATTACHMENT 3

Simplified Diagram of Flood Affected Areas

Attachment 3

Simplifed Diagram of Flood Affected Areas



REACTOR BUILDING ELEV. 422'

ATTACHMENT 4

Partial List of Documents Reviewed

Procedure 4.601.A2, Revision 11, "RHR Pump B Discharge Pressure High/low"
Procedure 4.601.A2, Revision 11, "RHR-P-3 Power Loss/Over Load"
Procedure 4.601.A2, Revision 11, "RHR B Out of Service"
Procedure 4.601.A2, Revision 11, "RHR C Pump Room Water Level High"
Procedure 4.601.A3, Revision 11, "LPCS Pump Room Water Level High"
Procedure 4.601.A3, Revision 11, "ADS A Logic Initiated"
Procedure 4.602.A13, Revision 9, "Reactor Building Floor Sump R4 Level High-High"
Procedure 4.FCP.2, Revision 6, "System 66 Preaction DG Building 441' Corridor/Store Room"
Procedure 4.FCP.2, Revision 6, "System 81 Preaction DG-2/Day Tank Room"
Procedure 4.12.4.10, Revision 5, "Reactor Building 422 Area Flooding".
Procedure 4.11.2.1, Revision 8, "Liquid Radioactive Spills"
Procedure 13.1.1A, Revision 2, "Emergency Action Level Basis"
Procedure 13.4.1, Revision 23, "Emergency Notifications"
Procedure 4.7.8.1, Revision 12, "125 Volt DC Division 1 and 2 Distribution System Failure"
Procedure 4..8.7.1, Revision 8, "Fire Protection System and/or Ring Header Degradation"
Procedure 2.4.3, Revision 17, "Low Pressure Core Spray"
Procedure 2.4.2, Revision 32, "Residual Heat Removal"
Procedure 13.10.2, Revision 12, "TSC Manager Duties"
Procedure 13.10.9, Revision 25, "OSC Manager and Staff Duties"
Procedure 5.5.27, Revision 1, "Reactor Building Max Safe Operating Level Measurement"
Procedure 13.1.1, Revision 24, "Classifying The Emergency"
Procedure 1.10.1, Revision 17, "Notification of Reportable Events"
Procedure 13.10.1, Revision 14, "Control Room Operation and Shift Manager Duties"
Procedure 12.2.14, Revision 2, "Batch Release of Nonradioactive Liquid"
Procedure 12.5.28, Revision 7, "Sampling and Analysis for Unrestricted Release"
Procedure 5.1.1, Revision 13, "RPV Control"
Procedure 5.3.1, Revision 13, "Secondary Containment Control"
EWD-1E-027 through -35, Revision 16, "Automatic Depressurization System"
807E180TC, Revision 18, "Automatic Depressurization System"
Procedure 1.3.10A, Revision 2, "Control of Ignition Sources"
Procedure 1.3.57, Revision 11, "Barrier Impairment"
Lesson Plan EP000011, Revision 7, "Technical Support Center"
Updated Final Safety Analysis Report (UFSAR), Various Sections
Technical Specifications - Various Sections
Emergency Action Level (EAL) Guidance

ATTACHMENT 5

List of Principal Licensee Persons Contacted

* D. Coleman, Manager, Regulatory Affairs
* D. Kobus, System Engineer
* D. Atkinson, Outage Recovery Manager
* G. Gelhaus, Engineering Technical Assistant
* G. Smith, Plant Manager
J. Hanson, Chemistry Manager
D. Hillyer, Radiation Protection Manager
* J. Fisicaro, WNP-2 Corporate Nuclear Safety Review Board
* J. Peterson, System Engineer
* J. Sexton, WNP-2 Corporate Nuclear Safety Review Board
* J. Parrish, Chief Executive Officer
* L. Olivier, WNP-2 Corporate Nuclear Safety Review Board
D. Mand, Manager, Design and Project Engineering
T. Meade, Plant Manager's Staff
* O. Maynard, WNP-2 Corporate Nuclear Safety Review Board
W. Oxenford, Operations Manager
* P. Inserra, Licensing Manager
* P. Robinson, WNP-2 Corporate Nuclear Safety Review Board
* P. Bemis, Vice-President, Nuclear Operations
J. Parker, Engineering Project Manager for Recovery
T. Powell, Licensing Engineer
R. Webring, Vice-President Operations Support
J. Rhoades, Principal Engineer (Root Cause Analysis Leader)
C. Robinson, Quality Assurance Engineer
* S. Ebneter, WNP-2 Corporate Nuclear Safety Review Board
* S. Wood, Manager, Systems Engineering
R. Vosburgh, System Engineer
* W. Harper, System Engineer
J. Wyrick, Quality Services Supervisor

Other licensee personnel include plant operators, maintenance, engineering and craft support staff.

The exit meeting was also attended by members of the general public as well as the news media.

List of NRC Persons Contacted

* B. Smallridge, Resident Inspector, Wolf Creek Generating Station
* E. Merschoff, Regional Administrator, RIV
* J. Spetz, Resident Inspector, WNP-2
G. Good, Senior Emergency Preparedness Analyst, RIV
J. Nicholas, Senior Radiation Specialist, RIV
* S. Boynton, Senior Resident Inspector, WNP-2
* V. Dricks, NRC Office of Public Affairs

Attended Exit Meeting

ITEMS OPENED

Opened

50-397/9816-01	IFI	Adequacy of procedural guidance for reactor building flooding (Section 2.3.1)
50-397/9816-02	IFI	Adequacy of radio communications (Section 2.3.1)
50-397/9816-03	IFI	Operating crew's decision to start the LPCS pump during the flooding event (Section 2.3.1)
50-397/9816-04	IFI	Implementation of compensatory measures for degraded fire protection system (Section 2.3.1)
50-397/9816-05	IFI	Adequacy of procedural guidance for control of ignition sources (Section 2.3.1)
50-397/9816-06	IFI	Sampling methodology associated with the discharge to the storm drains system (Section 2.3.2)
50-397/9816-07	IFI	Coordination and control between the control room and the TSC (Section 2.3.2)
50-397/9816-08	IFI	Command and control associated with dewatering evolution (Section 2.3.2)
50-397/9816-09	IFI	Review of licensee flooding analyses (Sections 2.5, 2.5.2)
50-397/9816-10	IFI	Assumptions and corrective actions for LER 92-034-02 and SS2-PE-0591 (Section 2.5)
50-397/9816-11	IFI	Corrective actions for previous fire protection system water hammer events (Section 2.5)
50-397/9816-12	IFI	Unexpected response of preaction system 81 (Section 2.5.1)
50-397/9816-13	IFI	Corrective actions associated with multiple preaction scenarios (Section 2.5.1)
50-397/9816-14	IFI	Design adequacy of the fire protection system (Sections 2.2.1, 2.5.1, 2.6)
50-397/9816-15	IFI	Design discrepancies associated with watertight doors (Sections 2.5, 2.5.2)
50-397/9816-16	IFI	Issues related to RHR 2C door being left in an unsecured condition (Section 2.5.2)
50-397/9816-17	IFI	Leakage of watertight doors (Sections 2.5, 2.5.2)
50-397/9816-18	IFI	Corrective actions associated with watertight door maintenance deficiencies (Section 2.5.2)

50-397/9816-19	IFI	Maintenance rule performance criteria for the watertight doors (Section 2.5.2)
50-397/9816-20	IFI	Design issues associated with sump isolation valves (Sections 2.5, 2.5.3)
50-397/9816-21	IFI	Corrective actions associated with sump isolation valve maintenance deficiencies (Section 2.5.3)
50-397/9816-22	IFI	Maintenance and testing program issues for the sump isolation valves (Section 2.5.3)