

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-313/87-39
50-368/87-39

Licenses: DPR-51
NPF-6

Dockets: 50-313
50-368

Licensee: Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Facility Name: Arkansas Nuclear One (ANO), Units 1 and 2

Inspection At: ANO Site, Russellville, Arkansas

Inspection Conducted: December 1, 1987, through January 19, 1988

Inspectors:

W D Johnson
W. D. Johnson, Senior Resident Reactor
Inspector

1/30/88
Date

C C Harbuck
C. C. Harbuck, Resident Reactor Inspector

1/30/88
Date

Approved:

R H Harrell for
P. H. Harrell, Acting Chief, Project
Section A, Division of Reactor Projects

3/1/88
Date

Inspection Summary

Inspection Conducted December 1, 1987, through January 19, 1988
(Report 50-313/87-39)

Areas Inspected: Routine, unannounced inspection including operational safety verification, maintenance, surveillance, NRC Bulletin followup, followup on previously identified items, and followup on Licensee Event Reports.

Results: Within the six areas inspected, no violations or deviations were identified.

Inspection Conducted December 1, 1987, through January 19, 1988
(Report 50-368/87-39)

Areas Inspected: Routine, unannounced inspection of areas including operational safety verification, maintenance, and surveillance, NRC Bulletin followup, followup on previously identified items, and followup on LERs.

Results: Within the six areas inspected, one deviation (failure to provide supplements to LERs, paragraph 7) was identified.

DETAILS1. Persons Contacted

- J. Levine, Executive Director, ANO Site Operations
- A. Armstrong, Maintenance Coordinator
- B. Baker, Plant Modifications Manager
- A. Cox, Unit 1 Operations Superintendent
- E. Ewing, General Manager, Technical Support
- B. Garrison, Operations Technical Support
- J. GoBell, Mechanical Maintenance Engineer
- L. Gulick, Unit 2 Operations Superintendent
- C. Halbert, Engineering Supervisor
- G. Helmick, Planning and Scheduling Supervisor
- H. Hollis, Security Superintendent
- *D. Howard, Special Projects Manager
- *L. Humphrey, General Manager, Nuclear Quality
- *R. Lane, Engineering Manager
- *D. Lomax, Plant Licensing Supervisor
- A. McGregor, Engineering Services Supervisor
- *J. McWilliams, Maintenance Manager
- B. Michalk, Engineer
- *P. Michalk, Licensing Engineer
- V. Pettus, Mechanical Maintenance Superintendent
- *S. Quennoz, General Manager, Plant Operations
- P. Restivo, B&W Field Services Engineer
- R. Rispoli, Fire Protection Engineer
- P. Rogers, Special Projects Coordinator
- S. Strasner, Quality Control Engineer
- C. Taylor, Unit 2 Operations Technical Support Supervisor
- L. Taylor, Special Projects Coordinator
- J. Taylor-Brown, Quality Control Superintendent
- *J. Vandergrift, Operations Manager

*Present at exit interview.

The NRC inspectors also contacted other plant personnel, including operators, technicians, and administrative personnel.

2. Operational Safety Verification (Units 1 and 2)

The NRC inspectors observed control room operations, reviewed applicable logs, and conducted discussions with control room operators. The NRC inspectors verified the operability of selected emergency systems, reviewed tagout records, and ensured that maintenance requests had been initiated for equipment in need of maintenance. The NRC inspectors made spot checks to verify that the physical security plan was being implemented. The NRC inspectors verified implementation of radiation protection controls during observation of plant activities.

The NRC inspectors toured accessible units to observe plant equipment conditions, including potential hazards, fluid leaks, and excessive vibration. The NRC inspectors also observed plant housekeeping and cleanliness conditions during tours.

The NRC inspectors walked down the accessible portions of the following Unit 1 systems to verify operability:

- . DC power
- . High pressure injection
- . Low pressure injection
- . Service water
- . Emergency feedwater
- . AC power
- . Power conversion

For each of these systems an abbreviated walkdown was performed. This walkdown included those components whose failure has been determined to contribute to risk of core melt in a probabilistic risk analysis. All components were found to be properly aligned. No discrepancies which would affect component operability were identified.

During a tour of the Unit 1 intake structure, it was observed that one of the four batteries for the diesel engine driven fire pump P6B had been leaking acid. However, there did not appear to be an immediate effect on operability. The battery was replaced under Job Order 746024. It was also noted that floor drainage in the P6B pump room appeared inadequate as evidenced by standing water in much of the room. This housekeeping concern had no affect on plant safety.

During tours of the Unit 1 upper north piping penetration room, the NRC inspector noted the following items:

- . A steel, plywood, and glass board for mounting a piping and instrumentation diagram (P&ID) was attached, with the use of four C-clamps, to two pipe supports for the supply and return lines of the postaccident containment atmosphere sampling system. Although these supports were nonseismic restraints, the licensee, during this inspection period, was unable to provide an engineering evaluation which approved this installation. The board was detached from the supports pending resolution.
- . Also noted was a missing screw from the limit switch cover of containment atmosphere postaccident sampling system supply isolation solenoid Valve SV-7512. The licensee was informed and Job Request 793163 was issued to install a new screw.
- . Leakage past the seat of manual drain Valve SW-1033, as indicated by a small leak past the threads of the pipe cap just below the valve, was observed. This deficiency had already been identified by the licensee and outage Job Order 745660 had been written to replace the

valve. The NRC inspector also noted that the packing gland was not tightened down. This was corrected promptly by the licensee. Job Request 795208 was also issued to stop the leakage past the pipe cap in the interim. Valve SW-1033 is located in the service water supply to reactor building cooling coils VCC-2C and VCC-2D. The leak had no adverse affect on system operability.

During a tour of the "A" decay heat vault in Unit 1, Valve DH-1406/ was noted as having minor seat leakage, as evidenced by boric acid crystal buildup on the open discharge piping above the valve. The valve is the normally closed isolation for a local pressure gage on the supply line to the "A" reactor building spray pump and the "A" decay heat pump from the reactor building sump. The pressure gage was not installed. The licensee issued Job Order 744808 to repair the valve.

The NRC inspector followed up on a previously undocumented item noted on November 16, 1987. The NRC inspector had reviewed Temporary Modification (TM) 1-87021 which installed a blank flange to stop a leak on reactor coolant pump (RCP) P32B upper seal cavity sensing line. The temporary modification was completed November 15, 1987. A comment on the TM sheet indicated that the upper cavity pressure alarm should be deleted from scan while the TM was in effect. On November 16, 1987, the NRC inspector pointed out to the shift supervisor that this had been done incorrectly since the seal cavity pressure common annunciator window (RCP Seals Press Hi/Lo) was still lighted. As this alarm annunciator has no reflash capability, the pressure alarms for the other RCP seal cavities were effectively nonfunctional. The problem was promptly corrected by the licensee. The licensee determined the cause of this problem to have been personnel error. A memorandum was issued on January 8, 1988, to establish a clear policy regarding what alarm functions may be altered by operations personnel.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under Technical Specifications, the Code of Federal Regulations, and licensee administrative procedures.

No violations or deviations were identified.

3. Monthly Surveillance Observation (Units 1 and 2)

The NRC inspector observed the surveillance testing required by Technical Specifications on the electrical equipment room emergency cooling system (VCH-4A) (Procedure 1104.27, Attachment 2) and verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, limiting conditions for operation were met, removal and restoration of the affected components were accomplished, test results conformed with Technical Specification and procedure requirements, test results were reviewed by personnel other than the individual directing the test, and any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The NRC inspector also witnessed portions of the following test activities:

- . Overspeed trip test on diesel engine for Fire Water Pump P6B (Procedure 1104.32, Supplement XI)
- . Check of engineered safety feature electrical distribution (Procedure 2107.01, Supplement 4)
- . Capacity flow test of Diesel Firewater Pump P6B (Procedure 1103.21, Supplement X)
- . Emergency Diesel Generator 2K4B monthly test (Procedure 2104.36, Supplement 2). The NRC inspector noted that smoke leaked from the exhaust manifolds for the initial 15 minutes of operation and caused a smoke detector overhead to alarm. Oil was also observed to drip from the exhaust manifolds during this time. These observations have been noted numerous times in the past, on both Unit 2 diesel generators, and outstanding job orders exist to correct these problems. However, they have never been identified as adversely affecting the operation of the diesel generators. Previous attempts to prevent leakage from the exhaust manifolds have failed. During the course of the present cycle, the NRC inspectors have observed an increasing of the leakage. Licensee efforts to correct the problem will continue to be monitored. During the test, the NRC inspector also noted that the flange connection of the turbocharger outlet to the air box duct was missing a bolt. This resulted in an air leak past the flange. The operability of the diesel was apparently not affected by this air leak. The bolt is to be replaced under Job Order 746635.
- . Emergency Diesel Generator K4B monthly test (Procedure 1104.36, Supplement 2)

No violations or deviations were identified.

4. Monthly Maintenance Observation (Units 1 and 2)

Station maintenance activities for the safety-related systems and components listed below were observed in order to ascertain whether they were conducted in accordance with approved procedures, Regulatory Guides, and industry codes or standards and in conformance with Technical Specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service, approvals were obtained prior to initiating the work, activities were accomplished using approved procedures and were inspected as applicable, functional testing and/or calibrations were performed prior to returning components or systems to service, quality control records were maintained, activities were accomplished by qualified personnel,

parts and materials used were properly certified, radiological controls were implemented, and fire prevention controls were implemented.

Work requests were reviewed to determine status of outstanding jobs and to ensure that priority is assigned to safety-related equipment maintenance which may affect system performance.

The following maintenance activities were observed:

- . Troubleshoot breaker for CV-2620 to determine cause for tripping (Job Order 747080). This breaker (D1514) had tripped during performance of Procedure 1304.147. It supplies power to the isolation valve in the emergency feedwater line from Emergency Feedwater Pump P7A to Steam Generator B. The licensee prepared Report of Abnormal Condition 1-87-220 for evaluation of this problem. While the breaker was out of service, the licensee posted a dedicated operator at the valve for manual operation of the valve if necessary. The NRC inspector verified that this dedicated operator was alert, knew his assignment, and had communications with the control room.
- . Diesel Firewater Pump P6B surveillance inspection (Job Order 744166, Procedure 1306.27). This job consisted of performing preventive maintenance on the diesel engine to satisfy Technical Specification requirements and vendor maintenance recommendations. Replacement of oil and fuel filters, belts, a leaking turbocharger, and verification of the overspeed trip setting were among the items completed.
- . Preventive maintenance inspections and tests of vital AC Inverters Y-11 and Y-25 (Procedure 1307.02, Job Orders 533302 and 533298).
- . Hydrostatic pressure drop test on makeup pump room Unit Cooler VUC-7A following replacement of the cooling coils (Job Order 744350, Plant Engineering Action Requests 87-8289 and 87-8338). The basis for the hydrostatic test was ASME Section XI, Winter '81 Addenda, Article IWA 5244, for buried components. A pressure drop test had to be done because two welds within the test boundary were embedded in a wall. The test gage used was calibrated and pressure was observed to be maintained for the 4-hour period required. A licensee quality control inspector was present. No formal procedure was written for this simple test. Instead a combination of instructions listed in the details section of the job order by the work control center, marked up drawings showing the hydrostatic test boundaries, an engineering test specification and data sheet, and operations assistance were used to control and document the test. The lack of formal procedures for performing component level hydrostatic tests was discussed with the licensee. Having previously recognized a need to improve the administrative controls associated with this category of hydrostatic testing, the licensee is preparing a plant administrative procedure to define responsibilities in this area for the engineering, maintenance, and operations departments and the Work Control Center. This procedure will provide the basis for

departmental implementation procedures where deemed appropriate. For tracking purposes, the conduct of component level hydrostatic tests is designated as an open item (313/8739-01).

Repair of level indicator 2LI-1133B, the B steam generator level indication which is used during local control of the emergency feedwater isolation control valves during an alternate shutdown (Procedure 2304.111, Job Order 4704).

Corrective maintenance to restore proper operation of the A charging pump seal water system (Job Order 747536). The quarter-inch tubing of the seal water system of the charging pump had become plugged with paraffin and what is thought to be fibers or debris still present from past failures of the old design plunger packing. The new design packing utilizes a paraffin impregnated ring for starting lubrication and was installed under Design Change 87-0857 in August 1987. When a check valve in the pump failed to open recently, the packing apparently overheated, melting the paraffin which then entered the return line of the seal water system. A smaller amount of paraffin buildup in the seal water lines of the other two charging pumps was also found by the licensee, apparently the result of routine operation. Since installing the new packing, the licensee has noted marked improvement in the packing life compared to the old design. However, continued improvements in the design are being sought and tested. Currently, under a temporary change to the applicable maintenance procedure (Procedure 2402.032), the paraffin impregnated ring has been replaced with a graphite impregnated ring in the A charging pump packing. The intent is to prevent paraffin intrusion into the seal water system. The licensee has also changed the method of operating the seal water system for all three charging pumps. The seal water pump is now run continuously when a pump is idle as well as when operating. The NRC inspector found that the licensee appeared to have adequate control of the modification and testing of the packing of the charging pumps. This effort will continue to be followed by the NRC inspectors.

No violations or deviations were identified.

5. Followup of NRC Compliance Bulletin No. 87-02: Fastener Testing To Determine Conformance With Applicable Material Specifications

The purpose of this part of the report is to document NRC participation in the licensee's sample selection as required by the Bulletin.

The NRC inspector observed a licensee quality control engineer and a Babcock & Wilcox Field Services engineer draw bolt, stud, and nut samples from existing Q and non-Q stock located in the licensee's warehouse on January 15 and 16, 1988.

The NRC inspector reviewed the process used by the licensee to generate the sample selection list and found it to be consistent with the

guidelines of the Bulletin. Specifically, sample selection was based on the following points:

Bolts and studs with the following chemical and mechanical properties were selected:

<u>Material Type</u>	<u>Number of Samples</u>			
	<u>Unit 1</u>		<u>Unit 2</u>	
	<u>Q</u>	<u>Non-Q</u>	<u>Q</u>	<u>Non-Q</u>
SA 453 gr 660	1	2	2	0
SA 193 gr B7	1	1	1	2
A325 Type I	1	0	0	0
SAE J429 gr 5	1	2	0	1
SA 193 gr B8M Type 316	1	0	0	0
A307 gr B	0	2	0	2
SAE J429 gr 8	0	0	2	0

Typical nuts for the fasteners chosen were selected, with particular attention given to a specification of A-194, as follows:

<u>Material Type</u>	<u>Number of Samples</u>			
	<u>Unit 1</u>		<u>Unit 2</u>	
	<u>Q</u>	<u>Non-Q</u>	<u>Q</u>	<u>Non-Q</u>
SA-194 gr 8M Type 316	2	2	4	1
SA-194 gr 2H	3	1	1	2
A307 gr B	0	2	0	2

Q samples were required to have documentation showing traceability from the bolting manufacturer, to the licensee's storage location. Additionally, Q samples were required to have a certificate of compliance from the manufacturer or vendor. Care was taken to choose samples which had clear markings to facilitate identification should problems be found. Some non-Q samples had no markings. The actual sampling was simplified because the licensee has always stored fasteners by purchase order as well as by size and specification.

All samples were clearly tagged with a unique number and individually segregated in plastic bags for shipment to the testing laboratory.

Sample sizes ranged from 1/2 to 1-1/4 inches in diameter and 2-1/2 to 12 inches in length. Both bolts and studs were selected (9 studs and 11 bolts).

The sample selection was not based on in-plant usage. However, after sample selection, usage was determined to be either structural or pressure boundary. The sample selection was done using computer generated inventory lists.

The NRC inspector reviewed the testing instructions provided to the testing laboratory, Westmoreland Mechanical Testing and Research Company. The instructions were part of Babcock & Wilcox (B&W) Technical Document 19-1171114-01 entitled "Fastener Testing Requirements For Compliance With NRC Bulletin 87-02," approved January 15, 1988. The instructions were appropriate to the specification, grade, and class of the fasteners. Types of tests were as follows:

	<u>Chemical Composition</u>	<u>Mechanical Properties</u>	<u>Hardness</u>
Q - Bolts and Studs	X	X	X
Q - Nuts	X		X
Non-Q Bolts, Studs, and Nuts	X		X

The licensee stated that Westmoreland was approved by B&W. B&W is on the licensee's qualified vendor list.

No violations or deviations were identified.

6. Followup on Previously Identified Items (Units 1 and 2)

- a. (Closed) Violation 313/86-01(II.A): Failure to assure that design controls were properly performed.

- . Item II.A.1.a (Unresolved Item 313/8601-04): The consequences of high energy line breaks on emergency feedwater components were not addressed.

The licensee's letter of July 30, 1987, provided additional response to this item. This letter described the evaluations performed concerning a break of the 4-inch steam supply piping to the emergency feedwater turbine, effects of high energy line breaks on new targets related to the emergency feedwater upgrade, and a break of the 8-inch lines to the atmospheric dump valves. This item is closed.

- . Item II.A.1.b (Unresolved Item 313/8601-04): The determination as to whether safety-related room cooling was needed when both emergency feedwater pumps were operating was not performed.

The licensee's letter of July 30, 1987, provided additional response on this item. This letter discussed the results of an analysis which demonstrated that room cooling is not needed to maintain the operability of components in the emergency feedwater pump room when both pumps are running. This item is closed.

- b. (Closed) Violation 313/8621-01: Evaluations were inadequate to meet the requirements of 10 CFR Part 50.59.

The review performed in NRC Inspection 50-313/87-36 in followup of unresolved item 313/8601-01 was sufficient to form a basis for closure of this item. This item is closed.

- c. (Closed) Open Item 313/8017-03: Reactor building purge alarm setpoint.

The licensee has issued Procedure 1104.21, "Eberline Radiation Monitoring System." This procedure provides instructions for operators to adjust the Eberline monitor (SPING) setpoints before and after a reactor building purge. It also provides guidance on required actions if an alarm is received on the monitors. Training on the use of this new procedure is being provided in the current requalification training cycle. Procedure 1104.33 has been revised to provide instructions for operators to reset the setpoint of RE-7400 after a reactor building purge. The licensee has evaluated a release which was performed from the Unit 1 reactor building to determine whether the Xenon-133 calibration of RE-7400 produced a useful and realistic alarm setpoint. This evaluation concluded that the alarm setpoints were appropriate for both the RE-7400 and SPING monitors. This item is closed.

- d. (Closed) Violation 368/8523-01: Failure to maintain fire doors shut.

Local audible alarms have been installed on the four fire doors which had been causing the most problems. An alarm bell rings continuously whenever these doors are open. This, together with increased awareness of plant personnel of fire door closure requirements, has improved performance in the area of keeping fire doors shut. The waste control operators also check fire door status during their rounds and make log entries on fire door status once or twice per shift. This item is closed.

- e. (Closed) Violation 313/8527-01; 368/8528-01: Procedures for control room ventilation were inadequate.

This item was reviewed in NRC Inspection Report 50-313,368/87-18. The only items open at that time were discrepancies in Procedure 1104.34 in Sections 7.2 and 3.6.2. Revision 15 of this procedure was approved on August 16, 1987. This revision corrected the discrepancies. This item is closed.

- f. (Closed) Open Item 368/8528-06: Control room air flow drawings had errors.

The identified errors on Drawing M-2263, Sheet 2 have been corrected (Revisions 21 and 22). The licensee has revised Procedures 1000.13 and 1032.02 to implement a policy of keeping these drawings and others in the M-200 through 299 and M-2200 through 2299 series up to date.

- g. (Closed) Violation 313/8705-01: Only one makeup pump room cooler was operating.

The licensee has revised Supplements II, III, and IV of Procedure 1104.02 to specify the required operating status of makeup pump room coolers at the end of a surveillance test. The waste control operator's log has been revised to record the status of these coolers once per shift. Procedure 1015.11, "Operations Department Procedure Revision Control," has been revised to specify guidelines for determining the need for operator training in procedure revisions. It also provides methods for administering procedure revision training. This item is closed.

- h. (Closed) Violation 313/8718-01: Failure to station a dedicated operator during a surveillance test as required.

The motor in the operator for CV-2870 has been replaced with a qualified motor and the operator has been functionally tested under Job Order 724687. Procedure 1106.06 has been revised to delete the requirement for stationing a dedicated operator at this valve when it is open. This item is closed.

- i. (Closed) Violation 368/8722-01: Failure to perform a safety evaluation for operation of the containment atmospheric monitoring system.

Procedure 2104.33 has been revised to include a new Section 8, "Periodic Containment Building Depressurization." This change received a 10 CFR 50.59 safety evaluation and was approved on August 5, 1987. The licensee has reviewed other operating activities and did not identify other activities for which there was no procedure. The shift supervisors discussed this incident in one of their regular meetings. Procedure 1015.01 has been revised to provide guidance on the requirement for having a procedure in hand when performing certain types of operations activities. This item is closed.

- j. (Closed) Open Item 313/8730-02: Revise makeup pump maintenance procedure.

Revision 4 of Procedure 1402.019, "Primary Makeup Pumps (P36A, B & C) Inspection/Repair," was approved on November 20, 1987. The NRC inspector reviewed this procedure and noted that Attachment 1 provides detailed instructions for disassembling and reassembling the pump couplings. This item is closed.

- k. (Closed) Violation 313/8713-01: Improper temporary modification to Condensate Storage Tank T-41B.

The licensee has revised Procedure No. 1000.28, "Temporary Modification Control," to provide additional guidance on what

constitutes a temporary modification (Revision 8, October 28, 1987). The licensee has issued a new procedure (No. 6030.01, "Installation Plan"). Section 6.7 of this procedure (Revision 1, November 16, 1987) includes a formalized process for turning over modified systems from engineering to operations. Procedure No. 1409.63 was established on May 13, 1987, to provide a method for using the degasification system piping for filling T-41B while bypassing the degasification towers. This item is closed.

1. (Closed) Open Item 313;368/8640-01: Clarification of procedural guidance to Quality Control (QC) Inspectors for using deficiency reporting documents.

The NRC inspector concluded that the concerns of this open item have been resolved based on a review of the current procedural guidance for the use of the various types of deficiency reporting documents and through discussions with the QA General Manager and the QC Superintendent. This conclusion is based on the following discussion.

- (1) The two previous site QC organizations and their governing procedures (1004.01 for Plant QC and 1004.18 for Plant Modifications QC) have been replaced. There is now a single QC organization or section under the QC Superintendent. This section is divided into three groups, each with a QC Supervisor. These groups are QC Engineering, QC Modifications, and QC Maintenance. The QC section operates under a series of QC Operating (QCO) procedures. Those pertaining to discrepancy documentation guidance for QC inspection activities are:

QCO-2	QC Document Review
QCO-6	Welding Inspection
QCO-8	Maintenance and Modification QC Inspections
QCO-9	QC Discrepancy Identification and Corrective Action System

- (2) QC modification and maintenance inspection activities are generally performed in accordance with QC Inspection Instructions (QCIIIs) and documented with a QC Inspection Record (QCIR). The QCIIIs, prepared by the QC Engineering group, are performed by the QC maintenance or modification group. Normally, a discrepancy found during the conduct of a QC inspection activity is documented with a QC Finding Report (QCFR).
- (3) The four pertinent types of deficiency reporting documents available for use by QC personnel and the guidance for their use are as follows:
 - (a) Quality Control Finding Report (QCFR).

As noted above, this is used to document discrepancies found during the conduct of a QC inspection activity. This includes most modification and maintenance inspection activities. The use of a QCFR is defined in Procedures QCO-8 and QCO-9.

(b) Nonconformance Report (NCR).

This is used to document discrepancies specifically limited to the categories listed below. Its use is governed by Procedure 1000.07 "Deviations and Nonconformances," and also Procedures QCO-6, QCO-8, and QCO-9.

- Section 5.14 of QCO-6 states that an NCR is used to document discrepancies found on a completed weld previously accepted by a welding inspector. Section 5.14.1 of QCO-6 specifies five types of discrepancies that should cause an NCR to be written.
- Section 5.4 of QCO-8 states that discrepancies identified during in-process welding or nondestructive examination (NDE) are not documented with an NCR, but are noted in the remarks section of the applicable welding/NDE inspection document. The QC Inspector must describe the discrepancy, state if rejectable, and initial and date the entry. The welding/NDE inspection document noted above is governed by the licensee's 1092.XX series procedures, and is used to document QC inspection activity in this area in lieu of the QC Inspection Record (QCIR).
- Section 5.1.3 of QCO-9 states that an NCR would be used to initiate corrective action for a plant discrepancy noted by a QC Inspector not directly involved in inspection or surveillance work, the same as other plant personnel would.
- Section 6.1 of Procedure 1000.07, states general requirements for when to write an NCR. Since the identification of the concerns of this open item, this procedure has been revised. The guidance of this procedure is consistent with the QCO-6, 8, and 9 procedures.

In summary, a QC Inspector would use an NCR to document noninspection-related deficiencies or welding deficiencies identified on a previously completed and tested weld.

(c) Report of Abnormal Conditions (RAC).

This document is governed by Procedure 1000.08 "NRC Reporting and Communications." A RAC may be initiated by any individual in lieu of an NCR if it is suspected that the deficiency is reportable as defined by 10 CFR Parts 50.72 and 50.73. This includes a QC inspector not directly involved in a QCII directed inspection activity. However, QCO-8, Section 5.1.2, states that when a significant condition adverse to safety is identified, then a RAC is used apparently in addition to a QCFR, if it is determined to be a potentially reportable occurrence by the QC Superintendent.

In summary, then, a QC inspector may initiate a RAC for a deficiency found other than while performing a QCII, but a QCFR could result in a RAC if so determined by QC management.

(d) Document Discrepancy Notice (DDN).

Procedure QCO-2, Section 5.3 states a DDN is used to identify and document resolution of documentation discrepancies found during QC Engineer review of quality records during the initiation or closeout process. Section 5.1.5 of QCO-2 states that the DDN is not intended to replace the NCR or RAC for problems within the scope of the procedure governing those documents. Types of documents that are included in these reviews are:

- Design Change Packages (DCPs)
- DCP Implementing/Testing Procedures
- Maintenance Workplans
- Licensee Administrative Procedures
- Job Orders
- Modification Installation Procedures
- Weld Packages
- ASME Section XI Repair Packages

- (4) The licensee appears to have an adequate training program for QC personnel regarding the administrative controls for documenting deficiencies. This training covers the QC Operating Procedures thoroughly. Additionally, contractor QC personnel are subjected to a screening and indoctrination process prior to being approved to perform QC inspection activities.

Based on the above, this open item is considered closed.

7. Followup On Licensee Event Reports (LERs) Units 1 and 2

The purpose of this part of the inspection was to determine whether the licensee has taken the corrective actions stated in the LER and whether the response to each event was adequate and met regulatory requirements,

license conditions, and commitments. The NRC inspectors reviewed the following LERs. Those marked with an asterisk (*) are considered closed. Remarks regarding each follow:

<u>Unit 1</u>	<u>Unit 2</u>
85-001-00	84-022-00
86-001-00	*85-002-00
86-002-01	*85-007-00
86-006-00	*86-011-00
*87-004-00	86-012-00
*87-007-00	*86-014-00
	*87-001-00
	*87-002-00
	*87-004-00

a. Unit 1 Licensee Event Reports

- (1) (Open) LER 85-001-00, Steam Driven Emergency Feedwater Pump (P7A) Inoperable.

The NRC inspector noted that a supplemental report originally planned for submittal by 8/1/85, had not yet been issued. Two items were noted which should be addressed by the licensee in the supplemental report:

A complete scenario of the events should be provided. One deficiency was not discussed in the original report. This was the miswiring of the pump turbine speed controller which was believed to be the cause for the pump failing the first attempted surveillance test on January 6, 1985.

The future corrective action of licensee management addressing the identified weaknesses in design package review should be discussed in the context of recent improvements in the plant modifications process.

This LER remains open pending NRC review of the supplemental report.

- (2) (Open) LER 86-001-00, Emergency Diesel Generator K4A Failure.

The NRC inspector reviewed Revision 1 of the licensee's Investigation Report of this event dated January 1986. This report contained nine recommendations. The LER listed only five of these as potential corrective actions. Also, the licensee committed to submit a supplemental report on January 7, 1987, but has yet to do so. This LER remains open pending NRC review of the supplemental report and determination of the adequacy of the corrective actions described therein.

- (3) (Open) LER 86-006-00, Boric Acid Corrosion of Carbon Steel High Pressure Injection Nozzle and Reactor Coolant System Cold Leg Piping.

The NRC inspector found that the root cause had been determined and that the corrective actions taken appeared adequate. Records of inspections conducted to identify additional boric acid leaks and the program for performing periodic inspections were reviewed. Locations designated for inspection appeared to be comprehensive. However, a concern was identified regarding the licensee's judgment of when to take action to stop small leaks. This concern is based on the recent example of the leakage from the "B" once-through steam generator lower primary inspection port hand hole. Some evidence of leakage had been identified there in a November 1986 inspection, but action to repair it was delayed until the October 1987 midcycle outage, when the leakage was found to have increased and to have caused minor damage to stud hole threads. This concern was addressed in NRC Inspection Report 50-313/87-37.

The NRC inspector verified that the following two corrective actions had been accomplished. One was the modification of operating procedures regarding the required actions upon identification of boric acid leaks (Procedure 1102.01, Attachment G, and 2102.01, Attachment D). The other was a design modification on the high pressure injection line insulation, such as below Valve MU-45A to deflect any future leakage from the valve outside the insulation.

However, the NRC inspector determined that another corrective action had not been accomplished yet. This was the performance of a detailed stress analysis for the repaired nozzle to further qualify extended operation. Pending completion of this stress analysis by the licensee, this LER remains open.

- (5) (Closed) LER 87-004-00, Reactor Trip and Emergency Feedwater Actuation During Power Ascension Due To Main Feedwater (MFW) Pump Control System Problems.

The NRC inspector verified that the corrective actions stated in the report had been completed. Installation of signal limiters in the integrated control system to eliminate a negative voltage being supplied to the Lovejoy MFW pump turbine control systems was verified by reviewing Field Change No. 19 to Design Change 86-1002. Plant startup Procedure 1102.02 was reviewed to verify it contained operator guidance to keep the MFW pump in manual control until 20 percent power is reached. This LER is considered closed.

- (6) (Closed) LER 87-007-00, Single Failure Design Criteria Not Met For The Standby Penetration Room Ventilation System.

The installation of the design change and the successful post-modification testing were observed by the NRC inspectors. This LER is considered closed.

b. Unit 2 Licensee Event Reports

- (1) (Open) LER 84-022-00, Loss of Two of Three Reactor Coolant System Leakage Detection Systems.

The NRC inspector found that the only preventive corrective action completed in response to this event was directed at reducing the ambient temperature in the upper north piping penetration room (UNPPR) so that the sample pump overload relays for Containment Atmosphere Monitoring System (CAMS) Unit 2, RITS-8271-2, would not trip erroneously. The insulation on the main feedwater piping was replaced with nonencapsulated insulation during the last refueling outage, 2R5, under Design Change 84-D-2043.

Additional actions proposed were the installation of temperature compensated thermal overloads in both CAMS units and the addition of chill water cooling coils in the ventilation supply to the UNPPR. These actions are apparently still under consideration by the licensee.

The NRC inspector noted that the licensee committed to submit a supplemental report by May 15, 1985, but has yet to do so. This LER remains open pending review of the supplemental report by the NRC.

- (2) (Closed) LER 85-002-00, Refueling Water Tank (RWT) Level Transmitters Inoperable Due To Freezing.

As documented in NRC Inspection Report 50-368/85-25, the licensee's corrective action to improve the freeze protection of RWT level transmitters was verified completed under Design Change 85-2127. Since that time no additional freezing problems with these transmitters have occurred. This LER is considered closed. It should be noted that the licensee committed to submit a supplemental report on August 30, 1985, but has yet to do so.

- (3) (Closed) LER 85-007-00, Fire Door Not Functional As Fire Barrier.

The NRC inspector reviewed the licensee's Mechanical Periodic Test Procedure 1306.005, "Fire Door Inspection Procedure," Revision 6, effective date of December 18, 1987, and found that it neither addressed the frequency of inspection nor designated which fire doors were high usage. However, through discussions with the licensee it was determined that all fire doors are

inspected every 6 months as an interim measure until further evaluation is completed. This evaluation, Safety Review Committee Action Item 87-1303, is to update fire door specifications in general and to include additional requirements for high use doors. Based on the interim 6-month inspection interval this LER is considered closed. A supplemental report originally planned for submittal on September 16, 1985, has not been issued yet.

- (4) (Closed) LER 86-011-00, Reactor Trip On High Reactor Coolant System Pressure Due To Turbine Trip

The NRC inspector reviewed the licensee's maintenance procedure for the moisture separator reheater drain tank level control valves 2CV-0417 and 2CV-0418, Procedure 2402.86, Revision 0, effective date June 25, 1987. The procedure appeared to be detailed, comprehensive, and adequate to direct proper maintenance on these control valves. This LER is closed.

- (5) (Open) LER 86-012-00, Inoperable Pressurizer Code Safety Relief Valves (2PSV-4632 and 4634)

The NRC inspector found that the licensee had been unable to identify with certainty the root cause of the low safety valve lift pressures. Followup actions planned include the modification of the pipe supports adjacent to the valves under DCP 87-2041 during the next refueling outage, 2R6. It is thought that the present design of the supports has contributed to the persistent leakage problem with these valves, and that this leakage has contributed to lowering the lift pressure of the valves.

The licensee committed to submit a supplemental report by January 30, 1987, but has yet to do so. This LER remains open pending resolution of the code safety valve leakage problem and review of the supplemental report by the NRC.

- (6) (Closed) LER 86-014-00, Emergency Diesel Generator Failure Due to Fuel Supply System Fouling as a Result of Fuel Oil Degradation.

The NRC inspector found that the licensee has made significant improvements in the maintenance of diesel fuel oil. These improvements were:

- . Monthly sampling of day tanks for solids and water (Procedures 1618.028 and 2618.028)
- . Receipt sampling of new diesel fuel oil prior to off-load (Procedure 1618.035) to include verification of the flash-point (Procedure 1104.23)

- . Monthly sampling of the underground storage tanks from a low point on the tank outlet for sediment, sludge, and water (Procedures 1618.010 and 2618.005)
- . Draining and cleaning of the day tanks and underground storage tanks every 18 months, at least through the next refueling outages (2R6 and 1R8) (Procedures 1402.066 and 2402.028)
- . Addition of fuel preservative to the above ground storage tank, the underground storage tanks, and the Emergency Operating Facility diesel storage tank (Work Plan 1409.09)

Also included was the filtering of the fuel in the above ground and underground storage tanks each refueling outage. Consideration is being given to modifying the fuel oil system so that recirculation piping and filters are permanently installed. Presently temporary hoses and filters must be used.

Based on the above, this LER is considered closed. However, a supplemental report originally planned for submittal on January 30, 1987, has yet to be issued.

- (7) (Closed) LER 87-001-00, Breach of Fire Barriers Caused by Personnel Error While Performing Plant Modification.

The NRC inspector reviewed the lesson plan and attendance records for the training of plant modifications personnel regarding this event. The training emphasized how to identify a breach in a fire barrier and the required actions if a breach occurs. Additionally, a discussion of this event has been permanently included in the orientation training for contractor personnel. This LER is closed.

- (8) (Closed) LER 87-002-00, Degraded Plant Fire Barriers Due to Installation of Improper Seal Material in Seismic Gap Separating Adjacent Buildings.

The NRC inspector verified that the seismic gap between the Unit 1 and 2 auxiliary and turbine buildings had been sealed properly with fire retardant putty under Design Change 87-2030, through reviewing the applicable documentation and visually inspecting the gap at several locations. The NRC inspector also verified that all locations where the gap was sealed were assigned unique fire barrier penetration numbers, and that these penetrations were being incorporated into the licensee's fire barrier inspection program, Procedure 2405.16, and the Fire Barrier Penetration Log. The log is generally updated more frequently than the procedure and is used to supplement the penetration list of the procedure by the person assigned to inspect a particular fire barrier. The NRC inspector found that

the inspection program appeared adequate to comply with the Technical Specification cyclic inspection requirement. This LER is considered closed.

- (9) (Closed) LER 87-004-00, Subcritical Reactor Trip During Plant Cooldown Due to Personnel Error and Procedural Inadequacy.

The NRC inspector verified that plant cooldown Procedure 2102.10 had been revised to require closing the containment main feedwater isolation valves to the steam generators at the beginning of a plant cooldown. This LER is closed.

As noted in the previous remarks for the LERs listed below, supplemental reports committed to by the licensee have not been submitted and are overdue. The due date specified by the licensee on the LER is also provided.

<u>Unit 1</u>	<u>Due Date</u>	<u>Unit 2</u>	<u>Due Date</u>
85-001-00	August 1985	84-022-00	May 1985
86-001-00	July 1987	85-002-00	August 1985
		85-007-00	September 1985
		86-012-00	January 1987
		86-014-00	January 1987

The failure of the licensee to submit LER supplemental reports as committed to when the initial LER was submitted is an apparent deviation. (313,368/8739-01)

8. Exit Interview

The NRC Resident Inspector met with Mr. S. M. Quennoz, General Manager, Plant Operations and other members of the AP&L staff at the end of inspection. At this meeting, the inspector summarized the scope of the inspection and the findings.