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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-334/82-13

Docket No. 50-334

License No. DPR-66 Priority -- Category C

Licensee: Duquesne Light Company

435 Sixth Avenue

Pittsburgh, Pennsylvania

Facility Name: Beaver Valley Power Station, Unit 1

Inspection at: Shippingport, Pennsylvania

Inspection conducted: June 1 - July 7, 1982

Inspectors: Wm. Troskoski July 13, 1982
W. M. Troskoski, Resident Inspector date signed

W. Lazarus, Reactor Inspector July 19 1982
date signed

Approved by: L. E. Tripp 7/20/82
L. E. Tripp, Chief, Reactor Projects date signed
Section No. 2A, Reactor Projects Branch 2

Inspection Summary: Inspection on June 1 - July 7, 1982 (Inspection No. 50-334/82-13).
Areas Inspected: Routine inspections by the resident inspector (151 hours) and one region based inspector (34 hours) of: licensee action on previous inspection findings, plant operations, housekeeping, fire protection, radiological controls, physical security, radwaste operations, surveillance testing, maintenance activities, inoffice and onsite licensee event report review, and startup testing.
Results: One violation (Failure to follow radiation protection procedures) - detail 2.

DETAILS

1. Persons Contacted

F. Bissert, Manager, Nuclear Support Services
J. Carey, Vice President, Nuclear Support Division
H. Caldwell, Assistant Station Superintendent
M. Coppula, Superintendent of Technical Services
K. Grada, Superintendent of Licensing and Compliance
R. Hansen, Maintenance Supervisor
H. Harper, Security Assistant
J. Indovina, I&C Supervisor
T. Jones, Manager, Nuclear Operations
J. Kosmal, Radiological Operations Coordinator
W. Lacey, Chief Engineer
V. Linnenbom, Radiochemist
J. Lukehart, Security Director
L. Schad, Operations Supervisor
E. Schnell, Radcon Supervisor
J. Sieber, Manager, Nuclear Safety and Licensing
R. Swiderski, Superintendent of Nuclear Construction
N. Tonet, Manager, Nuclear Engineering
H. Williams, Station Superintendent
J. Wenkhous, Reactor Control Chemist
R. Zabowski, Testing and Plant Performance Supervisor

The inspector also contacted other licensee employees and contractors during this inspection.

2. Licensee Action on Previously Identified Inspection Findings

The NRC Outstanding Items (OI) List was reviewed with responsible licensee personnel. Items below were reviewed through discussions with licensee personnel, documentation review, and field inspection to determine whether licensee actions specified in the OIs had been satisfactorily completed.

(Closed) Violation (81-08-06): Failure to adequately establish, implement and maintain procedures for RHR system surveillance tests. Technical Specifications 4.7.10d and 4.7.11, Plant Systems, contained surveillance requirements for the RHR system that were not correctly translated into the operational surveillance test (OST) acceptance criteria. In response to this violation, dated September 21, 1981, the licensee stated that erroneously worded acceptance criteria in the referenced TS would be changed and the OST rewritten to (1) obtain repeatable data, (2) to correctly identify acceptance criteria and (3) to verify that no degradation of the RHR pumps had occurred. The inspector reviewed the RHR surveillance requirements contained in TS 3/4.4, Reactor Coolant Systems, (Amendment 43 deleted TS 3/4.7.10 and 3/4.7.11 specifications and revised TS 3/4.1.3 to reflect current RHR loop operability requirements) and verified that OST 1.10.1, RHR Pump Performance Test, Revision 14, contained the appropriate acceptance criteria.

(Closed) Violation (81-08-07): Failure to notify the NRC Operations Center pursuant to 10CFR50.72(3) regarding degradation of RHR flow. 10CFR50.72(3) requires the licensee to notify NRC Headquarters of ". . . any event that results in the nuclear power plant not being in a controlled or expected condition while operating or shutdown . . ." within one hour of the event. On March 5, 1981 at 6:25 p.m. an unexpected degradation on RHR system flow occurred and was not reported until 8:39 p.m. that day. The licensee addressed this violation in a letter to the NRC dated September 21, 1981. The inspector reviewed this response, the BVPS Operating Manual Chapter 1.48.9D, Section C, Prompt Notification of the NRC Pursuant to 10CFR50.72, and interviewed several senior reactor operators to verify that they were cognizant of the reporting requirements. Based on those discussions, this item is closed.

(Closed) Violation (81-25-02): Failure to handle/disposition excess Category I material in accordance with OQA procedures. The BVPS Maintenance Manual Chapter 1, Section R, Disposition of Material, was revised to direct that untagged or non-QA salvageable material not be used in Category I applications without proper documentation in order to provide required traceability of an item from issuance from storage to installation in the station. This provides for the control of untagged parts and non-QA spares to prevent inadvertant use in QA Category I applications, as specified by QA Procedure No. OP-6, Material Control. Additionally, the inspector verified that cognizant personnel were informed of the above requirements by review of a maintenance training meeting roster dated February 11, 1982.

(Closed) Unresolved Item (81-25-06): Review DLC actions for boric acid storage tank (CH-TK-1A & 1B) chlorides. After maintenance on the defective deborating subsystem valves had been completed, the boric acid storage tank water inventory was recirculated through the deborating demineralizer to reduce the chloride concentration. The inspector reviewed chemistry log records for January through June 1982 and verified that the chlorides had been reduced to less than 0.05 ppm in CH-TK-1A & 1B and were being controlled at less than 0.15 ppm in the boric acid hold tank (BR-TK-7). The Reactor Control Chemist informed the inspector that a method was currently under consideration to further reduce the chloride levels in BR-TK-7, the contamination source of CH-TK-1A & 1B. Based on current tank chloride concentrations of less than 0.05 ppm, this item is closed.

(Closed) Violation (81-25-07): Failure to establish and implement procedures for chemistry corrective action. The BVPS Chemistry Manual, Chapter 1, Part 8, Corrective Action, Issue 1, Revision 5 was revised to:

-- Provide instructions for corrective actions when the referenced parameters exceed provided specifications.

-- Identify the parties responsible for implementing corrective actions;

-- Provide for management escalation/review of out-of-specification parameters as an alternative to parameter-specific procedures; and

-- Provide methods of documentation and followup of corrective actions to ensure their implementation and/or effectiveness.

The Open Item Log was established in March, 1982 to provide the referenced documentation. The inspector reviewed this log and checked selected entries against chemistry data records to verify proper implementation. The inspector had no further questions on this item.

(Closed) Violation (81-28-02): Failure to make log entries for jumper removal. The inspector verified that actual equipment conditions were confirmed and appropriate log entries completed. The licensee revised Maintenance Manual Chapter 1, Section A.9, Post Maintenance Checkout and Return to Operations, to ensure that jumper and lifted lead tags are returned with the completed MWR to the Shift Supervisor for proper documentation. This concludes the licensee's corrective action on this item.

(Closed) Unresolved Item (81-28-03): DLC to incorporate scaffold reviews into area permit system. The inspector reviewed Operating Manual Chapter 1.48.10, Figures and Tables, Revision 29, and verified that the Area Permit Checklist incorporated a review of proposed scaffold installation by the Operations Department for potential safety impact. This item is closed.

(Closed) Violation (81-28-11): Improper chemist log entry and shift turnover resulted in chlorine ETS violation. Administrative Directive 82-1, Turnover Practices, issued January 27, 1982 was reviewed by all chemistry personnel. This directive reinstructed individuals on proper logging and shift turnover practices and critiqued the incident. As this appears to be an isolated case involving only chemistry personnel, the above actions are currently sufficient.

(Closed) Unresolved Item (81-28-13): DLC to confirm IEB 80-15 requirements met for new Emergency Notification System (ENS) installation. The inspector reviewed BVT 1.3-2.5.7.1, ENS Operability Test, Revision 0, performed June 15, 1982. This test successfully verified the operability of the ENS phones, powered from onsite sources, per the requirements of IE Bulletin 80-15.

(Closed) Inspector Follow Item (81-29-24): Perform five point calibrations on Class 2 instruments identified in emergency and abnormal procedures prior to startup. DLC committed to performing approximately fifty instrument loop calibrations prior to Cycle Three startup in their April 26, 1982 response to NRC Performance Appraisal findings (Inspection No. 50-334/81-29). The inspector reviewed the master list used by the licensee to track completion of the loop calibrations, and toured the Control Room to verify that the instrument calibrations were current. The inspector observed that three instrument loops (LI-CC-100, PI-TB-201, and PIC-BR-109 A & B) lacked current calibration stickers. This was discussed with the Instrument and Control Supervisor. The inspector reviewed the completed calibration data sheets and verified that they were current. During a subsequent Control Room tour it was noted that the three calibration stickers had been updated. This item is closed.

(Closed) Inspector Follow Item (82-07-08): Verify resolution of security computer uninterruptable power supply (UPS) problems. The UPS has been repaired to eliminate the excess line noise which had been overpowering the supervisory circuitry signals. The inspector verified that the UPS was placed on line and operated satisfactorily since May 8, 1982. Based on this operating experience, this item is closed.

(Closed) Violation (82-08-01): Failure to perform monthly fire extinguisher inspection per OST 1.33.15. The inspector reviewed DLC's response to the violation contained in a letter dated June 9, 1982 and verified that: (1) the OST was subsequently completed on April 17, 1982, (2) the Shift Technical Advisors now check the OST Schedule to assure all items are completed as scheduled, and (3) the OST cover sheet was changed to reflect that the test is required by Amendment 18 of the Facility License. During various plant tours the inspector noted that all observed portable fire equipment had been currently inspected. This item is closed.

(Closed) Unresolved Item (82-10-01): Review corrective action for adherence to Radiological Work Permit (RWP) procedures. During NRC Inspection 50-334/82-10, the inspector identified several instances where individuals failed to enter their final pocket dosimetry readings on the RWP/RACP-Permit Acceptance/Dosimetry Data Records upon exiting the controlled area. This is a violation of Radcon Manual Procedure 8.1, Radiological Work Permit, Issue 2, approved May 12, 1981 and Procedure 8.4, RWP (Access Control), Issue 1, approved June 5, 1981. These findings were discussed with the Radcon Supervisor who stated that corrective action would be taken that included: (1) completing the Dosimetry Data Records with data obtained from TLD booth records used to track individual pocket dosimetry readings on a daily basis, (2) perform an audit of RWP/RACPs to identify any additional violations, and (3) conduct additional training of any Radcon technicians identified in the audit. The inspector verified that the stated corrective actions were implemented.

On June 3, 1982 the inspector conducted an additional audit of the Dosimetry Data Record sheets and noted that ten people failed to comply with the requirements of RM Procedure 8.4, eight on RACP 82-23-R, Radcon-Operations PAB Low Rad, one on RACP 82-141-H, Radcon-PAB High Rad, and one on RACP 82-151-H, Radcon-Containment High Rad. Further discussions were held with the Radcon Supervisor, who informed the inspector that internal audits identified individuals from other departments who were also failing to comply with RM Procedures.

The inspector noted that though the required dosimetry data is recorded at the TLD booth before issue and upon return of the pocket dosimeters, the initial corrective actions undertaken by the licensee were not effective in forcing procedure compliance. Failure to complete the Dosimetry Data Records prior to exiting the controlled area is a violation of RM Procedure 8.1, RWP, Issue 2 and 8.4, RWP (Access Control), Issue 1. (82-13-01).

3. Review of Plant Operations

a. General

The facility was shutdown for part of the inspection period. Inspections and plant tours were conducted during day and night shifts with respect to outage activities and maintenance of safe shutdown conditions. Acceptance criteria for these inspections included:

-- BVPS FSAR Appendix A, Technical Specifications
-- BVPS Operations Manual, Chapter 48, Conduct of Operations
-- OM 1.48.5 Section D, Jumpers and Lifted Leads
-- OM 1.48.6, Clearance Procedures
-- OM 1.48.8, Records
-- OM 1.48.9, Rules of Practice
-- BVPS Operations Manual, Chapter 55A, Periodic Checks - Operating Surveillance Tests
-- BVPS Maintenance Manual, Chapter 1, Conduct of Maintenance, Section J, Housekeeping
-- BVPS Radcon Manual, various sections
-- 10CFR50.54(k), Control Room Manning Requirement
-- Inspector Judgement
-- BVPS Physical Security Plan

Findings resulting from these inspections are discussed in paragraph 3h below.

b. Areas Inspected

-- Primary Auxiliary Building, including High Radiation Areas and Loose Surface Contamination Areas
-- Service Building
-- Main Steam Valve Room
-- Purge Duct Room
-- East/West Cable Vaults
-- Emergency Diesel Generator Rooms
-- Containment Building, including High Radiation Areas
-- Penetration Areas
-- Safeguards Areas
-- Various Switchgear Rooms, Cable Spreading Room
-- Protected Area

The inspectors also toured the Control Room regularly to review logs and records and conduct discussions with operators concerning reasons for selected lighted annunciators and knowledge of recent changes to procedures, facility configuration and plant conditions.

c. Daily Control Room tours were conducted by the inspector to:

(1) Observe instrument and recorder traces of systems required during various reactor modes for abnormalities. Systems included:

-- Residual Heat Removal (RHR) System
-- Chemical and Volume Control System (CVCS)
-- Fuel Pool Cooling and Purification System
-- Supplementary Leak Collection and Release (SLCRS) System
-- Liquid (LW) and Gaseous (GW) Radioactive Waste Systems
-- Fire Protection Systems
-- Nuclear Instrument (NI) System
-- Process and Area Radiation Monitors (RMs)
-- Offsite and Onsite Electrical Power Systems

(2) Verify proper Control Room and shift manning.

(3) Review of the following licensee logs and documents were performed on a rotating basis during the inspection to obtain information on plant conditions, determine compliance with regulatory requirements and assess the effectiveness of the communications provided by the documents:

* -- Nuclear Shift Supervisors Logs
* -- Nuclear Control Operator Logs
-- Equipment Clearance Logs
-- Caution Tag Log
-- Special Operating Orders
-- Waste Handling Systems 7 Day Running Logs
-- Chemistry Log Sheets
* -- Nuclear Shift Operating Foreman Logs
* -- Radcon Foreman Logs
-- Equipment Out of Service (OOS) Logs
-- Temporary Operating Procedures & Log
-- Temporary Logs Sheets (for special surveillances or operations)
-- Nuclear (auxiliary) Operator Logs

(4) The inspector observed Control Room instrumentation, controls, and indicators to verify that ongoing operations and maintenance of shutdown conditions were in conformance with Technical Specification (TS) Limiting Conditions for Operations (LCOs).

(5) The inspector reviewed completed surveillance tests to verify that the tests were completed as scheduled, test results were reviewed by responsible supervisors, and corrective actions initiated for test identified deficiencies.

*Note: Each of these logs was reviewed for the entire inspection period. All other logs were reviewed at least weekly.

d. The following activities were inspected during tours of the plant areas listed in paragraph 3.b:

(1) On a sampling basis, safety related tagouts were verified to be properly posted with equipment properly positioned and redundant equipment operable (if required).

(2) The inspector independently verified plant conditions and equipment status required for conformance with TS LCOs for various reactor modes during inspection tours outside the Control Room.

(3) The inspector verified that Maintenance Work Requests (MWRs) had been initiated for equipment in need of maintenance and that proper priorities had been assigned to the repairs.

(4) Toured areas were observed for fire hazards, availability and operability of fire fighting equipment and emergency equipment, and general condition of fire alarms and actuating controls. The inspector verified that observed ignition sources were being controlled in accordance with BVPS OM Section 1.56.

(5) Plant housekeeping conditions and cleanliness were observed to confirm that:

-- Critical clean areas are controlled.
-- Excess materials are returned to storage areas.

-- Combustible materials and debris are promptly removed from the facility.

The inspector noted that the Containment, Primary Auxiliary Building and Turbine Deck showed a marked improvement in housekeeping over the previous inspection period.

(6) The inspector observed implementation of the Physical Security Plan, including:

-- Proper manning of the security organization.
-- Security personnel were capable of performing their assinged functions.
-- Protected Area barriers were not degraded.
-- Isolations Zones were clear.
-- Persons and packages were properly checked prior to Protected Area entry.

-- Vehicles are properly authorized, searched and escorted or controlled within the Protected Area.
-- Persons within the Protected and Vital Areas display photo identification badges and are properly escorted if required.
-- Communications checks were conducted and proper communications devices were available.
-- Compensatory measures were employed when required by security equipment failure or impairment and were effective.
-- Security access controls to Vital Areas are properly implemented.

(7) Shift turnovers of the Nuclear Shift Supervisor, Reactor Operator, Health Physics, and Security groups/departments were periodically observed to ensure continuity of information.

(8) The following radiological control activities were observed on day and night shifts:

(a) During tours of the Primary Auxiliary Building and controlled personnel exit points, radiation protection instruments were inspected to verify operability and adherence to calibration frequency requirements.

(b) The following Radiation Work Permits and Radiation Access Control Permits were reviewed for completeness. The permit(s) denoted by asterisk were reviewed in the field to verify that the permit requirements were being followed.

* -- RWP 10,000, Work in 1C Charging Pump Cubicle-PAB, June 21, 1982.
* -- RWP 9988, 1A Reactor Coolant Pump Motor Repair-Containment, June 22, 1982.
* -- RWP 10,072, Moving Liners from Solid Waste to Decon, July 2, 1982.
* -- RWP 9913, SWP-6 Solid Waste 735 PAB, June 4, 1982.
* -- RWP 9956, Valve Pit-Safeguards-Rework MOV-RS-156B, June 7, 1982.

e. The inspector audited the licensee's Jumper and Lifted Lead controls on June 21, 1982 in accordance with BVPS OM Section 1.48.5 to ensure no conflicts with Technical Specifications and that the licensee is actively pursuing correction of conditions requiring the jumpers or lifted leads.

f. The inspector witnessed selected portions of the below radioactive releases to verify conformance with approved procedures, that required release approvals had been obtained, that required sampling was accomplished, and that effluent release instrumentation was operable.

-- RWDA 570-Gas, Discharge of Gas Decay Tank 1B, June 7, 1982.
-- RWDA 568-Gas, Discharge of Gas Decay Tank 1A, June 4, 1982.
-- RWDA 586-Gas, Discharge of Gas Decay Tank 1B, July 7, 1982.

g. The inspector observed solid radioactive waste disposal activities to verify implementation of administrative controls. Labelling, surveys, and shipment records for RSR No. B0534 were witnessed on June 10, 1982 to assure completeness. In addition, the inspector performed independent radiological surveys of the liner, truck bed and cab. No discrepancies were identified.

h. Findings

(1) Operational Surveillance Test (OST) 1.1.1, Control Rod Assembly Partial Movement Test, Revision 28, was performed on July 6, 1982 without meeting the initial conditions specified for Mode 3 (Hot Standby). Those conditions required the Shutdown Banks to be fully withdrawn prior to performing rod manipulations. BVT 1.1-1.1.3, RPI Calibration Test, was in progress at the time and required the shutdown banks to be fully inserted. To allow the BVT to proceed, the initial condition section of OST 1.1.1 was annotated and the test conducted with the shutdown banks inserted.

Technical Specification 6.8.1C requires that written procedures be established and implemented for surveillance and test activities of safety related equipment. ANSI Standard N18.7-1972, Administrative Controls for Nuclear Power Plants, requires test procedures to specify prerequisites that identify plant conditions that shall exist prior to its use. Contrary to the above, the initial conditions specified in OST 1.1.1 were not met prior to performing the surveillance test. The inspector discussed this with the Station Superintendent and expressed a further concern that initial conditions and/or acceptance criteria contained in an OST might not be compatable with a BVT, even though the OST is used as a vehicle to accomplish a task specified in the BVT. This item is unresolved (82-13-02) pending inspector review of licensee corrective actions and clarification or development of administrative controls that address such possible conflicts.

(2) During a tour of the Primary Auxiliary Building on July 5, 1982 the inspector checked the integrity of a double metal door at the entrance of the containment personnel air hatch cubicle. The inspector was able to pull the door open. Security personnel responded as required and performed appropriate actions. The inspector discussed this matter with the Security Director and requested that all Vital Area doors be checked for similar deficiencies. No other deficiencies were identified by the licensee. During a subsequent tour, it was noted that the subject doors were appropriately modified to preclude forced entry. The inspector had no further questions on this item.

(3) While performing the System Restoration section of MSP 1.05, Reactor Protection Logic System Train B Bi-Monthly Test, Revision 17 on June 4, 1982, a safety injection signal passed through the solid state protection system and started the No. 2 diesel generator. No safety injection occurred because of system lineups during shutdown. The inspector reviewed the procedure and discussed the event with the Instrument & Control (I&C) Supervisor and the Meter and Control Repairmen (MCRs) who performed the test. Apparently either the Pressurizer Safety Injection or Steamline Pressure/Flow Safety Injection block did not make up prior to placing the "Input Error Inhibit" switch to normal with the reactor coolant system pressure at less than 2000 psi (p-11). MSP 1.05 did not require that the light indication for the block resets be checked. The I&C Supervisor informed the inspector that the procedure would be revised to reflect this check. This is Inspector Follow Item (82-13-03).

(4) On June 14, 1982 an operator became contaminated during a containment entry when water condensing on 1C recirculation air cooler distribution duct splashed down on him. The inspector reviewed the Radcon investigation. The operator had a maximum external contamination of 1100 counts per minute on the face and hand before being decontaminated. A whole body count identified only background levels with no internal uptake (less than 12 nano Curies). No discrepancies were identified.

4. In Office Review of Licensee Event Reports (LERs)

The inspector reviewed LERs submitted to the NRC:RI office to verify that the details of the event were clearly reported, including the accuracy of the description of cause and adequacy of corrective actions. The inspector determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted onsite followup. The following LERs were reviewed.

--	LER 82-14/01T	Postulated Overstress on Excess Letdown Heat Exchanger Support Beam
* --	LER 82-16/03L	Turbine Auto-Stop Oil Pressure Switches Inoperable or Outside TS Setpoint Limits
* --	LER 82-17/01T	Containment Void Discovered in Concrete Reinforced Equipment Hatch Ring
* --	LER 82-18/03L	Failure of B RHR Pump to Start Due to Circuit Breaker Racking Mechanism Problem
* --	LER 82-19/03L	Pin Hole Leak in River Water Expansion Joint on 1B Recirculation Spray Heat Exchanger
--	LER 82-20/03L	Chlorine Detector Inoperable

No unacceptable conditions were identified.

b. Onsite LER Followup

The inspector reviewed the licensee's actions for the following LERs:

LER 82-16: All three reactor protection system Turbine Trip Auto-Stop Oil Pressure switches (PS-TB63-4AST, 5AST, 6AST) were found inoperable during performance of their annual maintenance surveillance test (MSP 26.07) on April 7, 1982. A mechanical trip mechanism was reported blocked by a lug on one of the switches. The inspector queried Instrument & Control (I&C) personnel about the lug's origin. The report author and the Supervisor were not knowledgeable of the specifics, but knew that the switch was repaired and subsequently recalibrated. The I&C Supervisor contacted the technician who performed the test and later accompanied the inspector on a field trip to demonstrate the failure cause. Apparently an electrical connector, internal to the switch, became loose and physically blocked the mechanical operation. Similar problems were not observed in the other switches.

Technical Specification 2.2.1, Reactor Trip System Instrument Setpoints, specifies an allowable trip range of 45 $\pm$ 5 psig for the auto-stop oil pressure. The other two pressure switch as-found setpoints were 51 and 37 psig. The inspector reviewed as-found data from the previous test and noted that only a nominal drift was recorded with no apparent trend yet established. The licensee was cognizant of the as-found setpoint history.

LER 82-17: On May 28, 1982, a void was discovered in the outer equipment hatch concrete reinforced ring while drilling anchor holes for conduit installation. The void contained a slurry of water and sand that showed no evidence of being mixed with concrete. Approximate dimensions of the irregular shaped void were less than 37 inches long and varied 4 to 13 inches in width with average depth of 3 inches.

* Denotes those reports selected for onsite followup.

The inspector discussed the safety implications of this discovery and possible causes with both DLC Engineering and NRC Region I management. The licensee evaluated the problem and prepared a repair procedure contained in Engineering Memorandum (EM) 11086, dated June 6, 1982. At the inspector's request, a followup to the evaluation and repair procedure was prepared to perform an additional review of Nonconformance & Disposition (N&D) reports related to the production and placement of concrete. EM 11102 contained the results of this review which considered all N&Ds issued for the subject concrete pour, the circumstances believed to have occurred to produce the void (the only one discovered) and the fact that the containment had been pressurized on several occassions for successful Type A Containment Integrity Leak Rate Tests, and concluded that the void was an isolated problem with a low probability of occurrence elsewhere. Copies of both EM 11086 and 11102 were forwarded to Region I for review by specialists. The inspector verified that the repair was made and had no further questions on this item.

LER 82-18: This event was discussed in detail in NRC Inspection Report 50-334/82-10.

LER 82-19: A pin hole leak was discovered in an expansion joint on the river water discharge of 1B Recirculation Spray Heat Exchanger. The expansion joint was replaced and EM 21110 issued to determine the cause of failure. This is the second expansion joint failure in two years (see LER 80-48).

5. Maintenance Activities

The inspector observed and reviewed selected maintenance activities to verify compliance with technical specifications (reportability and limiting conditions for operation in applicable mode), administrative and maintenance procedures, appropriate industrial codes and standards, equipment clearances, QA/QC involvement, jumper use, fire prevention controls, proper radiological controls, and equipment testing prior to returning to service. The following activities were included:

(1) Repair of mechanical seals on outside recirculation spray pump RS-P-2A. While completing Mode 2 (reactor startup), prerequisite operational surveillance tests (OST), RS-P-2A experienced excessive mechanical seal leakage and was declared inoperable on June 13, 1982. The inspector verified compliance with the technical specification action statement (TS 3.6.2.1, Containment Quench Spray System), reviewed MWR 821332 issued to repair the seal, verified the mechanical and electrical clearance tagouts (per clearance permit 465995), and observed portions of the repair work in the field. The inspector also reviewed OST 1.13.5, 2A Recirculation Pump Dry Test, Revision 26, performed June 16, 1982 prior to returning

the pump to service and observed control room status boards and panels to verify proper system alignment. It was noted that: (1) the emergency equipment status board still showed RS-P-2A as being on clearance, and (2) the pump suction and discharge valves of RS-P-2A were closed while 2Bs were open. This was brought to the licensee's attention and the status board was updated. During discussions with the onduty reactor operator it was ascertained that because the reactor was in the process of entering cold shutdown (due to reactor coolant pump motor bearing problems), all four recirculation spray system pumps had been disabled per the shutdown procedure, but valve lineups were as yet incomplete. The inspector verified that the valve alignments were subsequently completed in a timely manner.

(2) Repair of seat ring on valve TV-MS-105A. The steam driven auxiliary feedwater pump, FW-P-2, was declared out-of-service on June 13, 1982 with approximately 200 psig discharge pressure leaking by valve TV-MS-105A. The inspector reviewed MWR 821328 and Corrective Maintenance Procedure No. 1-75-245 used to effect a welding repair to the steam cut seat ring, and observed portions of the field work, including QC inspection activities.

(3) Repair of reactor coolant pump (RCP) 1A motor thrust bearing. Abnormal temperature increases in RCP motor 1A thrust bearing forced the licensee to terminate reactor start up efforts on June 15, 1982. During the initial review of work scope, the inspectors noted that the licensee had planned to effect repairs by use of vendors' manuals (for the motor work) and equipment clearance procedures only. The licensee stated that this was sufficient because the RCP motor is not a safety related piece of equipment. However, the inspectors noted that job required uncoupling the reactor coolant pump shaft and jacking it down while "floating" the pump under 200 psi reactor coolant system pressure. In doing so, seal leakage from the primary pressure boundary is expected to be encountered and must be controlled. ANSI Standard N18.7-1972, Administrative Controls for Nuclear Power Plants, provide guidance for conducting facility operations and controlling maintenance activities with approved procedures that include prerequisites, precautions, limitations and actions. This was discussed with the Station Superintendent, who acknowledged the inspector's concerns. Temporary Operating Procedure 82-38, Reactor Coolant Pump 1A Motor Bearing Ground Measurement, was prepared and approved to control the general maintenance activities before work began. Lube oil analysis indicated the presence of babbitt (bearing metal lining), an expected condition from bearing failures. Investigation by the licensee failed to definitively identify the initiating cause.

(4) Replacement of reactor coolant pump (RCP) 1B mechanical seal. During a test of RCP-1B on June 25, 1982, seal leakoff increased from 0.3 gpm to 2.5 gpm, indicating that No. 1 seal failed. The inspector observed portions of the maintenance activities conducted under Corrective Maintenance Procedure 1-GRC-P-1A-B-C-1M, RCP Mechanical Seal Replacement, Revision 9. No unacceptable conditions were observed.

6. Surveillance Activities

Portions of various surveillance tests were observed to verify that: (1) technical specification test frequencies were met, (2) the procedure was followed, (3) testing was performed by qualified personnel, (4) LCOs were being met, and (5) system restoration was correctly accomplished following the tests. The following activities were witnessed by the inspector:

-- MSP 43.11, Radiation Process Monitor RW-101 Component Cooling Heat Exchanger Riverwater Calibration, Revision 3, performed July 6, 1982.

-- MSP 1.02, Loop Stop Valves, Revision 3, performed June 29, 1982.

-- OST 1.1.10, Cold Shutdown Valve Exercise Test, Revision 31, during June 4, 1982.

Other surveillance and testing activities associated with reactor startup are addressed in paragraph 7 of this report.

7. Reactor Startup

a. The inspector reviewed the following licensee post refueling startup procedures to verify that the startup test procedures were technically accurate, required tests were covered, and that the procedures had been properly reviewed and approved.

-- BVT 1.3-2.2.1, Initial Approach to Criticality After Refueling, Issue 1, May 3, 1982.
-- OST 1.49.1, Shutdown Margin Calculation, Revision 14.
-- BVT 1.3-2.2.2, Core Design Check Test, Issue 1, May 6, 1982.
-- OST 1.50.3, Startup Checklist.
-- OM Chapter 1.48.9H, Prerequisites List for Plant Startup, May 5, 1982.

b. Prior to the initial startup attempt, the inspector performed a walk-through of appropriate sections of Auxiliary Feedwater System on June 8, 1982 and the Quench Spray System on June 9, 1982. No discrepancies were noted.

c. The inspector witnessed portions of the unit startup to verify that all required surveillance testing had been successfully completed, and that startup was conducted in accordance with Technical Specification requirements and procedures listed in section A. The reactor achieved criticality at 2:43 a.m., June 7, 1982. At the close of the inspection, low power physics tests to verify core design parameters were being conducted. The inspector is continuing to monitor the startup testing. No discrepancies were identified.

8. Environmental Monitoring Program

a. Inspection of Monitoring Stations

The inspector toured the environmental monitoring stations listed below to verify that the equipment was in place and operating properly. No inadequacies were identified.

Station	Sample Type
13-Meyer's Farm	Air particulate and direct radiation
29B-Beaver County Hospital	Air particulate and direct radiation
32-Midland, PA	Air particulate, direct radiation, surface water
46-Industry, PA	Air particulate and direct radiation

b. Sample Collection and Analysis

The inspector reviewed record cards kept at the sampling stations toured above and licensee records to verify that the licensee's contractor was collecting the required samples and forwarding them to the laboratory for analysis. The analysis data received from the contractor laboratory was reviewed to verify that the samples had been received and analyzed. No inadequacies were identified.

c. Annual Environmental Report

The inspector reviewed the 1981 Annual Environmental Radiological Report, Radiological Volume 2 for Beaver Valley Power Station and Shippingport Atomic Power Plant to verify that it had been submitted as required by Technical Specifications. No inadequacies were identified.

9. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable, violations of NRC requirements or deviations. One unresolved item was identified and is discussed in paragraph 3h of this report.

10. Exit Interview

Meetings were held with senior facility management periodically during the course of this inspection to discuss the inspection scope and findings. A summary of inspection findings was also provided to the licensee at the conclusion of the report period.