DCS Nos.	840106	820304	840125	840127
	820930	820525	840110	
	830922	820419	831225	
	821130	820401	840116	

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-334/84-01

Docket No. 50-334

License No. DPR-66 Priority -- Category C

Licensee: Duquesne Light Company

One Oxford Center

301 Grant Street

Pittsburgh, PA 15279

Facility Name: Beaver Valley Power Station, Unit 1

Inspection At: Shippingport, Pennsylvania

Inspection Conducted: January 1 - 31, 1984

Inspector: H. A. Walton for
W. M. Troskoski, Senior Resident Inspector — Feb 3, 1984 date signed

Approved by: R. E. Tripp
R. E. Tripp, Chief, Reactor Projects
Section No. 3A, Reactor Projects
Branch 3 — 2/10/84 date signed

Inspection Summary: Inspection No. 50-334/84-01 on January 1 - 31, 1984.

Areas Inspected: Routine inspections by the resident inspector (110.0 hours) of licensee actions on previous inspection findings, plant operations, housekeeping, fire protection, radiological controls, physical security, surveillance program, maintenance activities, engineered safety features verification, inoffice and onsite LER followup.

Results: One significant safety issue was identified (inoperable river water pump due to not fully charging closure springs before connecting its breaker to an emergency bus - detail 5).

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DETAILS

1. Persons Contacted

F. Bissert, Manager, Nuclear Support Services
J. Carey, Vice President, Nuclear Division
M. Coppula, Superintendent of Technical Services
K. Grada, Superintendent of Licensing and Compliance
T. Jones, Manager, Nuclear Operations
W. Lacey, Station Superintendent
J. Sieber, Manager, Nuclear Safety and Licensing

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

2. The NRC Outstanding Items (OI) List was reviewed with cognizant licensee personnel. Items selected by the inspector were subsequently reviewed through discussions with licensee personnel, documentation review and field inspection to determine whether licensee actions specified in the OIs had been satisfactorily completed. The overall status of previously identified inspection findings were reviewed, and planned and completed licensee actions were discussed for those items reported below.

(Closed) Unresolved Item (83-18-01): Revise appropriate procedures to insure Q-List is included as document requiring a review for each design change. Nuclear Engineering Management Procedure 2.8, Handling of Design Change Packages, now provides administrative controls for updating as necessary, the FSAR, Master Equipment List, Q*5, and Q-List (Appendix B of Operations Quality Assurance Manual) for each DCP. This completes the licensee's action for this item.

(Closed) Violation (83-19-04): Inoperability of RHR System in Mode 6. This item is being administratively closed because it was a subject of escalated enforcement action (a Severity Level III Violation) and was addressed in an October 11, 1983, Enforcement Conference at the Region I office (Enforcement Conference 50-334/83-27). Verification of licensee corrective action will be tracked as Violation (83-27-01).

(Closed) Violation (83-23-01): Failure to follow administrative and managerial control procedures resulting in an inoperable river water subsystem. This item was also a subject of Enforcement Conference 83-27. Licensee corrective action will be reviewed in regards to commitments made to the escalated enforcement action. This item is administratively closed because it is being tracked as part of Violation (83-27-01).

(Open) Violation (83-27-01): Verify corrective actions as outlined in Enforcement Conference 50-334/83-27 and attached Notice of Violation, dated January 6, 1984.

(Closed) Unresolved Item (82-16-03): Review corrective actions taken to assure completion of scheduled Maintenance Surveillance Procedures (MSP). Due to a failure to successfully complete a scheduled MSP during the alloted time, the licensee committed to taking long term corrective actions that included highlighting about due MSPs during the plan of the day meeting. The inspector verified, through attendance at several of those meetings, that scheduled preventative maintenance procedures and MSPs are identified and tracked by the plant scheduling group in the daily schedule report. The licensee's actions are satisfactory.

(Closed) Violation (82-16-06): Failure to take adequate corrective action after unplanned release from LW-TK-7B. The inspector reviewed the licensee's corrective action contained in DLC letter of September 30, 1982. The inspector verified that the tank level transmitters were recalibrated to account for their as-built condition (transmitter tap at 1 Ft. above tank bottom) and that a check was made of the alarm setpoint. Additionally, MSP 17.01 thru 17.04 were developed and performed to provide for the calibration and alarm checks of the tank level transmitters (L-LW110, L-LW111). The inspector noted that during the first performance of these MSPs, extensive field revision and design changes were necessary. The cognizant I&C engineer informed the inspector that those changes and modifications were reviewed and approved by the OSC. The licensee's actions are satisfactory.

(Closed) Violation (83-14-01): Failure to obtain equipment clearance prior to removing the A river water system from service due to misidentification of header expansion joints. The inspector reviewed the licensee's corrective action as outlined in the DLC letter of September 22, 1983. In this letter, DLC committed to providing stainless steel banding type tags to clearly identify the river water expansion joint. Placement of these tags was confirmed by the inspector during a routine tour of the PAB. Additionally, the licensee issued an information package concerning this event to the Construction Department, Nuclear for review by the construction specialists. The inspector reviewed this package and verified through attendance sheets that the specified personnel reviewed this and other safety significant events. Licensee action is satisfactory and this item is closed.

(Closed) Violation (82-25-02): Failure to follow OM Procedure 1.8.4D, Primary Makeup Water Systems-Startup. The inspector reviewed the licensee's response to this violation dated November 30, 1982. The licensee's investigation identified two causes: (1) poor communications between operators due to a large number of operations required to bring the plant in the proper condition during the incident, and (2) an incorrect calibration of the level alarms on BR-TK-6A and 6B that prevented immediate detection and correction of the valving error. The licensee indicated that these events were discussed with the personnel involved. Additionally, OM 1.48.9B,

Communications Procedures, has been revised to provide guidance on the expected formality of communications when job assignments have been completed, cannot be completed, or have failed acceptance criteria. Through a review of control room instrumentation calibration stickers, the inspector verified that the level alarms for BR-TK-6A and 6B have been recalibrated and are current. This closes out the licensee's action for this violation.

(Closed) Violation(82-25-05): Failure to initiate an RWP per Radcon Procedure 8.1 and 8.4. The licensee's response dated November 30, 1982, stated that the operating procedure for performing demineralizer flushing would be revised to prevent a similar event from recurring during this operation. The inspector reviewed the operating procedures contained in OM Chapter 1.18.4, Solid Waste Disposal System, and verified that the procedure made arrangements for radcon coverage of the resin transfer, to provide for proper RWP preparation and to verify complete resin transfer. Additional commitments included revising the operating and chemistry manuals to verify that proper notification of radcon is provided prior to activities which may significantly affect radiological conditions. The inspector reviewed the above manuals and verified that those changes were put into effect. Through discussions with operations personnel, the inspector also verified that the radiological operations shift foreman routinely contacted them to determine if any evolutions are planned during the shift which may have radiological impact. The inspector had no further concerns and this item is closed.

(Open) Violation (82-05-01): Inadequate design controls in design specifications, interface and verification programs. This violation identified several weaknesses in the licensee's design change and modification program related to their NUREG 0737 commitment. Several examples were identified where some design change packages (DCP) did not: (1) identify the applicable regulatory requirement, (2) demonstrate how the design inputs were translated into specifications, drawings, procedures and instructions, (3) adequately control design interfaces and coordination among participating design organizations in that information pertaining to NUREG 0737 commitment and design deviations was not controlled or exchanged in a timely manner between the participating engineering organizations and the licensing organization, and (4) the design verification letters lacked information necessary to verify the accuracy of the design. To assure correction of this problem in a timely manner, the NRC issued Confirmatory Action Letter (CAL) 82-06 to DLC on March 4, 1982. In their response to the CAL dated May 25, 1982, DLC committed to perform the following actions prior to start-up from the second refueling outage:

(1) Perform a detailed review of all NUREG 0737 related DCPs.

(2) Identify any differences between the requirements and DCPs, and resolve those differences with the Office of Nuclear Reactor Regulations.

(3) Perform a quality assurance audit of this review and those actions initiated to resolve the identified deficiencies.

In DLC's response to the Notice of Violation dated April 19, 1982, the following additional commitments were made to prevent recurrence:

- Revise procedures to assure proper identification of regulatory requirements and their translation to design output.

- Develop procedures to control interfaces for correspondence within the Nuclear Division.

- Develop procedures to control interfaces between all outside groups to assure that all regulatory commitments and deviations are identified and controlled.

By letter of May 25, 1982, DLC indicated that an independent review of those design change packages related to NUREG 0737 modifications was performed by EDS Nuclear, Inc. In addition, to verify compliance of each DCP with the NUREG 0737 requirements, EDS was tasked with independently verifying: the adequacy of design inputs such that they were correctly translated into detailed design documents; the overall adequacy of the design documents to meet the intent of NUREG 0737; identification of possible deficiencies between the DCPs and the regulatory requirement to allow notification of such deficiencies to the NRC by DLC; and, to determine the degree of compliance of each DCP with DLC Engineering Management Procedure 2.8, Handling of Design Change Packages, or Station Engineering Procedure 2.13, Generating Non-Safety-Related Design Change Package. The inspector confirmed that the above review encompassed the 12 DCPs performed to comply with the NUREG 0737 requirements. Additionally, DLC QA audit BV-1-82-18 conducted on April 20 - 21, 1982, was conducted for four of the DCPs to verify that the EDS review was performed in accordance with their QA manual and project instructions and QA audit BV-1-82-19 reviewed handling of identified deficiencies. The licensee's action in this respect is satisfactory. No significant safety problems were identified as a result of this review, and the licensee determined that the intent of each NUREG 0737 requirement had been met.

Of the 179 original unresolved items identified by EDS, all but about 37 were subsequently closed out through additional document review. Through discussions with licensing personnel, the inspector determined that the remaining items had been forwarded to the Nuclear Engineering Department (NED) for resolution and that all of the original items received NED review. Due to the length of time that some of these items had been open, the inspector asked the licensee's representative how proper close out would be tracked (most of the open items concern generic topics that are receiving current NRC review and rule making, such as fire protection and equipment qualification).

The licensee's representative committed to entering them into the computer tracking system. This item remains open pending further ongoing inspector review of: (1) those unresolved items identified by EDS, and (2) procedures developed to control the design interface between all participating groups.

3. Plant Operations

a. General

Inspection tours of the plant areas listed below were conducted during both day and night shifts with respect to Technical Specification (TS) compliance, housekeeping and cleanliness, fire protection, radiation control, physical security and plant protection, operational and maintenance administrative controls.

-- Control Room
-- Primary Auxiliary Building
-- Turbine Building
-- Service Building
-- Main Intake Structure
-- Main Steam Valve Room
-- Purge Duct Room
-- East/West Cable Vaults
-- Emergency Diesel Generator Rooms
-- Containment Building
-- Penetration Areas
-- Safeguards Areas
-- Various Switchgear Rooms/Cable Spreading Room
-- Protected Areas

Acceptance criteria for the above areas include the following:

-- BVPS FSAR Appendix A, Technical Specifications (TS)
-- BVPS Operating Manual (OM), 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
-- OM Chapter 55A, Periodic Checks - Operating Surveillance Tests
-- BVPS Maintenance Manual (MM), Chapter 1, Conduct of Maintenance
-- BVPS Radcon Manual (RCM)
-- 10 CFR 50.54 (k), Control Room Manning Requirements
-- BVPS Site/Station Administrative Procedures (SAP)
-- BVPS Physical Security Plan (PSP)
-- Inspector Judgement

b. Operations

The inspector toured the Control Room regularly to verify compliance with NRC requirements and facility technical specifications (TS). Direct observations of instrumentation, recorder traces and control panels were made for items important to safety. Included in the reviews were the rod position indicators, nuclear instrumentation systems, radiation monitors, containment pressure and temperature parameters, onsite/offsite emergency power sources, availability of reactor protection systems and proper alignment of engineered safety feature systems. Where an abnormal condition existed (such as out-of-service equipment), adherence to appropriate TS action statements was independently verified. Also, various operation logs and records, including completed surveillance tests, equipment clearance permits in progress, status board maintenance and temporary operating procedures were reviewed on a sampling basis for compliance with technical specifications and those administrative controls listed in paragraph 3a.

During the course of the inspection, discussions were conducted with operators concerning reasons for selected annunciators and knowledge of recent changes to procedures, facility configuration and plant conditions. The inspector verified adherence to approved procedures for ongoing activities observed. Shift turnovers were witnessed and staffing requirements confirmed. Except where noted below, inspector comments or questions resulting from these daily reviews were acceptably resolved by licensee personnel.

1. The licensee has experienced an increased number of main condenser tube leaks recently that has adversly affected the quality of the secondary water chemistry; specifically, steam generator conductivity. During one such transient, the cation conductivity reached about 60 μ mhos/square centimeter before being arrested on January 8, 1984. Technical Specification Admendment No. 26, dated February 29, 1980, deleted the secondary water chemistry requirements, replacing them with a license condition that a monitoring program be established to inhibit steam generator tube degradation. The inspector reviewed the BVPS - Chemistry Manual, Chapter 9, Secondary Water Chemistry Monitoring Program, and verified that the intent of the license condition was being met. Through discussions with cognizant licensee personnel, the inspector determined that from the experience gained from the January 8, 1984, conductivity transient, formal guidelines were developed to relate required operating actions with specific cation conductivity levels.

Intermediate corrective action has included replacement of the stainless steel tube plugs with fiber ones, and identification of additional leaking tubes. Long term corrective actions are to include upgrading the steam generator blowdown system and retubing the main condensor during the fourth refueling outage.

The inspector determined that licensee actions taken and planned meet the intent of licensee conditions to protect steam generator tube integrity.

2. Detail 11 of NRC Inspection Report No. 50-334/82-01 noted that Rockwell International, manufacturer of the hydrogen recombiners used at BVPS Unit 1, identified possible deficiencies in the recombiner heater lead wire insulation. The vendor concluded that after 10 years of normal testing (per routine scheduled surveillance tests), failures were possible if subjected to actual post-LOCA operation. The licensee had committed to making pertinent modifications by December 30, 1983, based on the recombiner delivery date of 1974. One train was so modified during the third refueling outage. However, because of procurement problems and recent licensee plans to provide further environmental qualification upgrades, modification of the second hydrogen recombiner train had to be delayed. The licensee's representative informed the inspector that these upgrades would be completed during the fourth refueling outage (Fall of 1984) and that a records search determined that actual surveillance testing did not start until about 1976. Because the unmodified train is still bounded by the original vendor analysis, the inspector determined that the proposed course of action is acceptable.

3. A spurious safety injection - reactor trip occurred at 3:05 a.m. on January 25, 1984, while performing MSP 1.04, Solid State Protection System Bi-Monthly Calibration. The licensee made the required ENS call to the NRC headquarters duty officer, and notified the inspector in a timely manner to allow onsite follow-up. From a review of control room instrumentation and discussions with operations personnel, the inspector determined that all train "B" ESF components responded as required and that plant parameters were in the expected bands.

   The boron injection tank was injected via the high head safety injection pump (charging pump) through the reactor coolant system cold legs. About 15 minutes after SI initiation, operations personnel were able to verify that acceptable SI termination criteria existed, and the ESF components were returned to their normal system alignment. The "A" ESF components were not actuated because the A train was bypassed per the MSP for testing.

At the time the SI occurred, the instrument technicians (MCR) reached the point in the MSP for the manual SI block/reset time delay relay test. Train A had been reset by the control room operator (in constant telephone communication with the MCRs at the process racks), and all required indications of the reset were received. The procedure then required a reset of the B train. It was at this point that the spurious SI was received. Both the train B reset and manual SI actuation buttons are located on the same control room bench board panel, about 4 inches apart.

From a review of the sequence of events recorder, the plant responded as expected to a manual SI. The inspector observed portions of retesting conducted to assure proper SSPS response to the train B reset. No abnormalities were observed. As Revision 24 of MSP 1.04 has been run several times without problems, the licensee believes that the most probable cause was manual initiation. Corrective actions to prevent recurrence from a human factors point of view were discussed with the Station Superintendent. The inspector was informed that though actuation and reset buttons are color coded (red and black respectively) and labeled, an additional modification to put a plastic cover over the actuation buttons would be performed. The inspector had no further concerns at this time.

Unresolved item (83-07-11) is tracking DLC actions to evaluate the number of SI hot nozzle transients permitted by ASME Section III. Through discussions with licensee personnel, the inspector was informed that this analysis was expected to be completed by about March, 1984. To date, there have been 18 SIs at BVPS Unit 1, 16 of which were while the primary system was hot.

c. Plant Security/Physical Protection

Implementation of the Physical Security Plan was observed in the areas listed in paragraph 3a above with regard to the following:

-- Protected area barriers were not degraded;

-- Isolation zones were clear;

-- Persons and packages were checked prior to allowing entry into the Protected Area;

-- Vehicles were properly searched and vehicle access to the Protected Area was in accordance with approved procedures;

-- Security access controls to Vital Areas were being maintained and that persons in Vital Areas were properly authorized;

-- Security posts were adequately manned, equipped, and security personnel were alert and knowledgeable regarding position requirements, and that written procedures were available; and

-- Adequate lighting maintained.

No inadequacies were observed.

d. Radiation Controls

Radiation controls, including posting of radiation areas, the conditions of step-off pads, disposal of protective clothing, completion of Radiation Work Permits, compliance with Radiation Work Permits, personnel monitoring devices being worn, cleanliness of work areas, radiation control job coverage, area monitor operability (portable and permanent), area monitor calibration, and personnel frisking procedures were observed on a sampling basis.

The inspector identified no deficiencies.

e. Plant Housekeeping and Fire Protection

Plant housekeeping conditions including general cleanliness conditions and control of material to prevent fire hazards were observed in areas listed in paragraph 3a. Maintenance of fire barriers, fire barrier penetrations, and verification of posted fire watches in these areas was also observed. No inadequacies were noted.

f. Chemistry Sampling

On January 5, 1984, the inspector reviewed chemistry data logs to verify that technical specification required sampling of the reactor coolant system, boric acid storage tanks, boron injection tank and safety injection accumulators was being performed within the stated frequency. The inspector also verified that those sample results were within the required range. No discrepancies were identified.

4. Engineered Safety Features (ESF) Verification

The operability of the Containment Depressurization System was verified by performing a walkdown of accessible portions that included the following as appropriate:

(1) System lineup procedures match plant drawings and the as-built configuration.

(2) Equipment conditions were observed for items which might degrade performance. Hangers and supports are operable.

(3) The interior of breakers, electrical and instrumentation cabinets were inspected for debris, loose material, jumpers, etc.

(4) Instrumentation was properly valved in and functioning; and had current calibration dates.

(5) Valves were verified to be in the proper position with power available. Valve locking mechanisms were checked, where required.

(6) Technical specification required surveillance testing was current.

During a walkdown of the quench spray flow path, the inspector noted boric acid buildup on the 1A pump (QS-P-1A) discharge flange and seal injection lines. This was brought to the attention of the Operations Supervisor for corrective action. The flange gasket was replaced under a maintenance work request on January 31, 1984. This work was performed by maintenance mechanics under the observation of a quality control inspector. During a post maintenance walkdown of the system, the inspector noted that the boric acid buildup remained on the seal injection line. Although this item is not specifically covered under the MWR, the inspector raised a concern that it should have been identified by the maintenance mechanics or the QC inspector and brought to the attention of either the maintenance foreman or an operations supervisor for followup corrective action. The Chief Engineer acknowledged the inspector's concern and stated that this item would be reviewed with both work groups. To verify operability of this system, the inspector observed portions of OST 1.13.1, 1A Quench Pump Flow Test, on January 31, 1984. No further concerns were identified.

Other selected ESF trains were inspected on a weekly basis to verify operability of major flow paths and components. ESF trains so inspected were:

- Low Head Safety Injection System

- Emergency Diesel Generator

- Solid State Protection System (SSPS)

A review of OM 1.50.3, Startup Checklist B, which is required to be completed prior to leaving cold shutdown for hot shutdown conditions, indicated that only a single verification of the normal alignment of the high-high containment pressure comparitors was required. These four bistables are designed as the only non-failsafe channels in the SSPS in order to prevent an inadvertent containment spraydown due to instrument power interruption. Because there is no remote indication in the control room as to the status of these channels, a double verification by second qualified operator is appropriate. This was discussed with the Operations Supervisor and an operating manual change notice was issued to address this concern.

While touring the diesel generator room on January 23, 1984, the inspector noted that the starting air line to the No. 1 diesel generator was missing a floor support. Through discussions with the Operations Supervisor, no reason for the missing support could be determined. Followup corrective action is Unresolved Item (84-01-01).

5. Surveillance Activities

To ascertain that surveillance of safety-related systems or components is being conducted in accordance with license requirements, the inspector observed portions of selected tests to verify that:

a. The surveillance test procedure conforms to technical specification requirements.

b. Required administrative approvals and tagouts are obtained before initiating the test.

c. Testing is being accomplished by qualified personnel in accordance with an approved test procedure.

d. Required test instrumentation is calibrated.

e. LCOs are met.

f. The test data are accurate and complete. Selected test result data was independently reviewed to verify accuracy.

g. Independently verify the system was properly returned to service.

h. Test results meet technical specification requirements and test discrepancies are rectified.

i. The surveillance test was completed at the required frequency.

Portions of the following surveillance tests were witnessed:

-- MSP 1.04, Reactor Protection Logic System Train "A" Bi-Monthly Test, January 25, 1984.

-- LCP 13-P101A, Containment Spray Header Pressure Loop P-QS-101A Calibration, January 9, 1984.

-- OST 1.24.4, Steam Driven Turbine Auxiliary Feedwater Pump, January 9, 1984.

-- MSP 46.03B, Hydrogen Analyzer H_2-HY100B Calibration, January 10, 1984.

-- MSP 13.08, L-100D RWST Level Loop II Calibration, January 11, 1984.

-- MSP 6.40, ΔT-T Avg. Protection Instrument Channel III Calibration, January 18, 1984.

-- OST 1.30.2(3), River Water Pump (A)(B) Test, January 2, 1984.

-- OST 1.30.6, River Water Pump 1C Test, January 27, 1984.

During observation of OST 1.30.6, River Water Pump 1C (RW-P-C) Test, on January 27, 1984, the pump failed to start upon demand at 1:37 p.m. The inspector accompanied the shift supervisor to the pump 4KV breaker located on the 1AE emergency bus, in the switchgear room. The toggle switch to the breaker closing spring charging motor was found off. After returning it to normal system alignment and fully charging the breaker's closure spring, the 1C river water pump was successfully started at 1:51 p.m. Inspection of other ESF breakers identified no other mispositioned toggle switches.

Investigation revealed that RW-P-1C had been inoperable since about 1:00 p.m. on January 25, 1984, when it was incorrectly racked on to the AE emergency bus without cycling the breaker in its test position as required by OM 1.36.4R, Racking 4 KV Breakers. The switchgear used throughout the 4 KV system at BVPS Unit 1 are ITE Imperial Corporation air circuit breakers that utilize 125 VDC control power and are spring operated utilizing a 125 VDC spring charging motor. These breakers have three racking positions in the housing: disconnect, in which the main disconnecting devices are separated from the stationary devices located in the housing; the test position, in which the main disconnecting devices are disengaged and the shutters are closed, but certain control contacts are connected such that the breaker may be operated for testing; and the connected position, in which the shutters are open and all main and control contacts are connected. The control circuits of these breakers

consist of the control room control switch, a closing latch release coil, a lockout coil, a trip coil and spring charging motor. When a breaker is racked onto an emergency bus, it is first placed in a test position and cycled closed and then open by use of the charging springs. This particular evolution can only be performed if the charging springs have been fully charged by the 125 VDC spring charging motor. With the motor toggle switch in the off position, the breaker closure springs cannot be fully charged.

Technical Specification 3.7.4.1, requires at least two reactor plant river water subsystems supplying safety related equipment to be operable in Modes 1 thru 4, however, reactor operation is allowed to continue for up to 72 hours with one subsystem inoperable. Because the inoperable river water pump was discovered during performance of a monthly operating surveillance test, which was fortuitously scheduled prior to expiration of the 72 hour action statement, no limiting condition for operation was violated.

Technical Specification 6.8.1 and Regulatory Guide 1.33-1972, require the establishment and implementation of written procedures for start-up, operation and shutdown of safety related systems. Station Administrative Procedures, Chapter 4, Plant Operations Group, and Operating Chapter 1.48.3G, require adherence to those operating procedures. The failure to cycle the RW-P-1C 4 KV breaker when racking it onto the AE emergency bus on January 25, 1984, as required by operating procedure OM 1.36.4R, is a violation (84-01-02).

This event is significant because it showed that an emergency pump can be incorrectly racked on an electrical bus in such a manner that its inoperability cannot be detected by control room personnel until they actually attempt to run the pump. This is due to two reasons: (1) the design features of the 4 KV switchgear (ITE Imperial Corp.) are such that there is no control room indication of the status of the charging spring, only of the 125 VDC control power availability, and (2) current management controls have allowed a single operator to perform a critical safety evolution without requiring a second independent verification of his actions by either another operator or by testing the motor to verify its operability. Neither the equipment clearance procedures outlined in OM Chapter 1.48 nor the river water system operating procedures contained in OM Chapter 1.30, require such double verification. The same holds true for any ESF motor powered from a 4 KV breaker. To address this safety problem, the Operations Supervisor committed to running each ESF pump after it is electrically connected to a bus, for positive verification of breaker operability. The inspector also pointed out that the emergency diesel generator supply breakers should also be addressed in their final review.

6. Maintenance Activities

The inspector observed portions of selected maintenance activities on safety-related systems and components to verify that those activities were being conducted in accordance with approved procedures, technical specifications and appropriate industrial codes and standards. The inspector conducted record reviews and direct observations to determine that:

- Those activities did not violate a limiting condition for operation.
- Redundant components were operable.
- Required administrative approvals and tagouts had been obtained prior to initiating work.
- Approved procedures were used or the activity was within the "skills of the trade."
- The work was performed by qualified personnel.
- The procedures used were adequate to control the activity.
- Replacement parts and materials were properly certified.
- Radiological controls were properly implemented when necessary.
- Ignition/fire prevention controls were appropriate for the activity.
- QC hold points were established where required and observed.
- Equipment was properly tested before being returned to service.
- An independent verification was conducted to verify that the equipment was properly returned to service.

Activities inspected were:

1. Valve packing in Blender Cubicle, January 3, 1984.
2. Troubleshooting control circuit of A Steam Generator atmospheric relief valve (MS-101A), January 4, 1984.
3. Adjustments to compensating voltage of intermediate range monitor N36, January 25, 1984.

No deficiencies were identified.

7. Inoffice 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 action. 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 LER's were reviewed:

-- LER 83-40 Failure of torque switch close contact on chemical addition pump discharge valve (MOV-QS-104B).

-- LER 83-41 Inoperable sub-cooling monitor (SCM-RC-100).

-- LER 83-42 Sensing lines for steam flow transmitters froze producing erroneously high steam flow indication.

-- LER 83-43 Main steam safety valves effluent monitor (RM-MS-100B) declared out-of-service due to erroneous spiking.

8. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable, items of noncompliance or deviations. One new unresolved item was identified and is discussed in detail 4. Followup on several previous unresolved items is discussed in Section 2.

9. 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 further discussed with the licensee at the conclusion of the report period.