U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos.	94-04 94-04
Docket Nos.	50-334 50-412
License Nos.	DPR-66 NPF-73
Licensee:	Duquesne Light Company One Oxford Center 301 Grant Street Pittsburgh, PA 15279
Facility:	Beaver Valley Power Station, Units 1 and 2
Location:	Shippingport, Pennsylvania
Inspection Period:	February 8 - March 14, 1994
Inspectors:	Lawrence W. Rossbach, Senior Resident Inspector Peter P. Sena, Resident Inspector Scot A. Greenlee, Resident Inspector

Approved by: _____ 3/24/94
W. T. Lazarus, Chief, Reactor Projects Section 3B — Date

Inspection Summary

This inspection report documents the safety inspections conducted during day and backshift hours of station activities in the areas of: plant operations; maintenance and surveillance; engineering; plant support; and safety assessment/quality verification.

EXECUTIVE SUMMARY

Beaver Valley Power Station
Report Nos. 50-334/94-04 & 50-412/94-04

Plant Operations

Operator action to reduce load and stabilize the plant following a Unit 1 feedwater pump trip was very good; however, the event could have been prevented by increased monitoring of condenser hotwell level. Operations department troubleshooting controls were found to be adequate during a dedicated inspection of this area. Corrective actions for a previous violation (50-334/93-26-01 and 50-412/93-28-01) concerning procedural compliance were satisfactory. An unresolved item (50-412/93-30-02) concerning inadvertent isolation of the gaseous waste system oxygen analyzers was determined to be a violation, but was not cited because of the low safety significance and the licensee's corrective actions.

Maintenance

Personnel performance during maintenance and surveillance was mixed. Excellent supervision and self-checking were noted during some activities, but poor self-checking and failure to question deficient equipment conditions were noted during others. Unit 1 observed some flow degradation in the 'A' and 'C' recirculation spray heat exchangers during the monthly flow evaluation.

Engineering

The licensee's review of a Westinghouse generic communication was timely, and appropriate corrective actions were implemented. This issue involved nonconservative technical specification high-neutron flux trip setpoints associated with inoperable main steam safety valves.

The licensee reported that a design change that removed from service the high head safety injection (HHSI) alternate mini-flow lines did not adequately address the single failure criterion. Immediate corrective actions were adequate. The impact of design change is still being evaluated.

Two unresolved items were closed. Specifically, open recirculation spray pump pit hatch entrances were appropriately evaluated by the licensee and would not have presented any additional safety challenges to safety-related equipment during a flooding event, and SLCRS testing was found to be adequate.

Executive Summary

Plant Support

Radiological controls and security programs continued to be effectively implemented. Radwaste personnel demonstrated very good procedural adherence and a questioning attitude during a resin flush. The resin flush procedures have improved after the outstanding change notices were incorporated.

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DETAILS

1.0 MAJOR FACILITY ACTIVITIES

Unit 1 operated at full power throughout this inspection period without any significant operational events except for a reduction to 60 percent power on February 20 due to decreasing main feedwater pump suction pressure followed by the trip of a main feedwater pump. This is discussed in Section 2.2.

Unit 2 operated at full power throughout this inspection period without any significant operational events.

2.0 PLANT OPERATIONS (71707, 93702, 62702)

2.1 Operational Safety Verification

Using applicable drawings and check-off lists, the inspectors independently verified safety system operability by performing control panel and field walkdowns of the following systems: low head safety injection, solid state protection, auxiliary feedwater, post accident hydrogen control, and boron injection. These systems were properly aligned. The inspectors observed plant operation and verified that the plant was operated safely and in accordance with licensee procedures and regulatory requirements. Regular tours were conducted of the following plant areas:

- Control Room
- Auxiliary Buildings
- Switchgear Areas
- Access Control Points
- Protected Areas
- Spent Fuel Buildings
- Diesel Generator Buildings
- Safeguards Areas
- Service Buildings
- Turbine Buildings
- Intake Structure
- Yard Areas
- Containment Penetration Areas

During the course of the inspection, discussions were conducted with operators concerning knowledge of recent changes to procedures, facility configuration, and plant conditions. The inspectors verified adherence to approved procedures for ongoing activities observed. Shift turnovers were witnessed and staffing requirements confirmed. The inspectors found that control room access was properly controlled and a professional atmosphere was maintained.

Control room instruments and plant computer indications were observed for correlation between channels and for conformance with technical specification (TS) requirements. Operability of engineered safety features, other safety related systems, and onsite and offsite power sources were verified. The inspectors observed various alarm conditions and confirmed that operator response was in accordance with plant operating procedures. Compliance with TS and implementation of appropriate action statements for equipment out of service was inspected. Logs and records were reviewed to determine if entries were accurate and identified equipment status or deficiencies. These records included operating

logs, turnover sheets, system safety tags, and the jumper and lifted lead book. The inspectors also examined the condition of various fire protection, meteorological, and seismic monitoring systems.

2.2 Unit 1 Forced Power Reduction

On February 20, 1994, a forced power reduction to 60 percent was necessary due to the trip of a main feedwater pump (FW-P-1A). Although operator action to rapidly reduce load and stabilize the plant was very good, increased monitoring of condensate hotwell level may have prevented the transient. Operators had earlier isolated normal makeup to the condenser to allow for maintenance on the hotwell level controller. Two automatic makeup paths (via level control valves LCV-CN-102 and 103) are normally in service. Operators were aware that normal automatic makeup was being isolated for a maintenance activity and that manual makeup was available. The operators, however, failed to increase their monitoring of hotwell level. Due to normal loss of secondary water inventory and the unexpected leakage past the hotwell high-level dump (LCV-CN-101), hotwell level decreased below its operating band from 32 inches to 25 inches over a 3.5 hour period. The decreasing hotwell level caused the condensate pump discharge pressure to decrease. The in-plant computer annunciator alarmed on low condensate pump discharge pressure and alerted operators to the pending feedwater pump trip and the need to reduce load. This anticipatory main feedwater pump trip annunciator was recently implemented as part of corrective action for condensate transient in January (see NRC Inspection Report 50-334/94-02). Significant leakage (1400 gpm) past the heater drain tank high level dump (LCV-SD-106A) was subsequently identified. This also decreased the available margin for adequate feedwater pump suction pressure. Feedwater suction pressure increased by 35 psig when the heater drain tank high level dump valve was isolated.

The licensee has determined that decreasing hotwell level and leakage past the hotwell high-level dump and high drain tank high level dump all contributed to this event. Although the hotwell level decreased faster than expected due to the leakage past hotwell dump valve LCV-CN-101, loss of hotwell level is expected due to normal inventory loss. System engineering failed to identify the leakage past the heater drain tank dump valve prior to this event, even though it had also contributed to the January transient. The inspectors also concluded that the recently installed low condensate pump discharge pressure annunciator was invaluable in alerting operators of the impending feedwater pump trip.

2.3 Troubleshooting Activities and Controls

The inspectors performed a review of troubleshooting activities conducted by the Operations Department to assure adequate controls exist. The control of troubleshooting by the Maintenance Department was previously inspected (see NRC Inspection Report 50-334/412-93-05) and found to be improved since the implementation of new administrative controls in 1991. Per Operating Manual Chapter 1/2.48.1.D(L), the shift supervisor has lead

responsibility for the performance of troubleshooting safety-related equipment, including identifying system interactions, possible plant upsets, and work boundaries. The administrative guidance for the shift supervisor is summarized as follows:

a) Troubleshooting shall be performed by persons who possess adequate qualifications and does not require detailed step-by-step procedures.
b) Normal precautions from the affected operating chapter associated with the particular equipment under troubleshooting apply. Documentation of switch, valve, and other component lineup changes is required to assure proper restoration of the system under troubleshooting.
c) Troubleshooting shall not result in permanently altering the function or performance of the affected system or component.
d) The temporary installation of jumpers or components for troubleshooting shall be permitted provided they are applied in accordance with established programs.
e) The Nuclear Shift Supervisor shall authorize the extent of troubleshooting to be performed prior to its start.
f) The Nuclear Shift Supervisor shall inform the affected on duty shift personnel of possible effects on normal plant status initiated by the troubleshooting prior to its start.
g) If troubleshooting is interrupted, the system or component is to be returned to normal status. If not possible, it should be left in a safe condition or on clearance.

The inspectors discussed with Unit 1 and Unit 2 shift supervisors their application of this guidance. Typically, operating procedures or operational surveillance tests are used to locate and possibly correct the source of equipment malfunction. The appropriate precautions and limitations of these procedures would be applied. More complex troubleshooting would involve the development of a temporary operating procedure. On-shift expertise is also heavily relied upon to develop a troubleshooting plan. Troubleshooting of the Unit 1 reactor head vent system (see NRC Inspection Report 50-334/94-02) was first accomplished per an alarm response procedure. Subsequent troubleshooting involved the development of an action plan by the shift supervisor and operations manager. Limiting conditions for operation were entered when appropriate. This activity was well controlled along with proper documentation of valve manipulations for system restoration. The inspectors also reviewed Unit 2 troubleshooting which involved the search for a primary component cooling water (CCP) leak (about 2 gallons per hour, based on surge tank level). Hand-over-hand walkdowns of CCP system piping, including relief valve drain lines, were completed by operators. Each section of piping examined was documented to prevent duplicated effort by other operators. Primary component cooling water heat exchangers were removed from and returned to service using existing operating procedures. Isolation of sample coolers, such as steam generator blowdown, were properly logged. The leak was finally found in an instrument air compressor heat exchanger and a maintenance work request has been initiated for repairs.

The inspector also reviewed all problem reports for the last 3 years for which troubleshooting was a causal factor. The only event involving operations troubleshooting was a steam generator blowdown isolation while performing a ground search (see NRC Inspection Report 50-412/93-05). Overall, the inspectors found the operations troubleshooting controls to be adequate. The two troubleshooting activities observed by the inspectors were conducted in accordance with established controls.

2.4 Failure to Implement Written Procedures (Violation 50-334/93-26-01 and 50-412/93-28-01) (Closed)

On December 14, 1993, the licensee was issued a violation (50-334/93-26-01 and 50-412/93-28-01) because of four examples of failure to correctly implement operational procedures as required by Technical Specifications. The licensee's written response to the violation was dated January 13, 1994. The licensee determined that, in each case, the operators involved failed in their attention to the details required to correctly implement the procedures. The licensee's corrective actions included: counseling and/or disciplinary actions for the individuals; discussion of the four events as part of shift briefings: a commitment to evaluate the procedures for adequacy; and a commitment to discuss the events leading to the violation during operator retraining sessions. The inspectors concluded that the licensee's actions appeared reasonable. Since procedural compliance is monitored routinely, this violation is closed based on the actions taken or intended by the licensee.

2.5 Inadvertent Isolation of Oxygen Analyzers at Unit 2 (Unresolved Item 50-412/93-30-02) (Closed)

On December 5, 1993, the licensee found that the isolation valve for the gaseous waste system oxygen analyzers was closed. Technical Specification 3.3.3.10 requires that both of the analyzers be operable during waste gas decay tank filling operations, otherwise grab samples are required. At the time of the event, the licensee had not determined when the valve was closed. Consequently, compliance with the Technical Specifications could not be determined, and the issue was left as an unresolved item (50-412/93-30-02).

The licensee was not able to determine exactly when or why the isolation valve to the oxygen analyzers was shut. Therefore, they had to assume it was shut during a transfer of waste gas on November 27, 1993. Since grab samples were not obtained during the transfer, the licensee was in violation of Technical Specifications. Grab samples on the gaseous waste storage tanks showed that oxygen concentrations in the tanks were below explosive threshold values following the transfer on November 27. The licensee plans to review this event with applicable personnel during a future training session. The inspectors concluded that the safety significance of the event was low. The Technical Specification violation is not being cited because it was identified by the licensee, promptly corrected, and of low safety significance (Section VII.B of the Enforcement Policy). This item is closed.

3.0 MAINTENANCE (62703, 61726, 71707)

3.1 Maintenance Observations

The inspectors reviewed selected maintenance activities to assure that: the activity did not violate Technical Specification Limiting Conditions for Operation and that redundant components were operable; required approvals and releases had been obtained prior to commencing work; procedures used for the task were adequate and work was within the skills of the trade; activities were accomplished by qualified personnel; radiological and fire prevention controls were adequate and implemented; QC hold points were established where required and observed; and equipment was properly tested and returned to service.

The maintenance work requests (MWRs) and preventive maintenance procedures (PMPs) listed below were observed and reviewed. Unless otherwise indicated, the activities observed and reviewed were properly conducted without any notable deficiencies.

MWR 27796	Clean Unit 1 Component Cooling Water Heat Exchanger 1C
MWR 26315	SLCRS Fan VS-F-4A Inspection
MWR 27104	SLCRS VS-D-4-13B Damper Adjustment
PMP 022610	Emergency Diesel Generator 1-2 Air Start Motor Replacement
MWR 28151	Reset N43 Course Gain Adjust
MWR 27219	Static MOV Test of 2CCP-MOV118

In addition to static testing, this MWR covered replacement of the valve's de-clutch shaft, the spring pack and the worm gear shaft bearing. The inspectors observed selected portions of valve reassembly and testing. All observed activities were performed adequately in accordance with station approved procedures.

MWR 27951 Troubleshoot Excess Flow Check Valve for No. 2-1 EDG

This MWR was issued because the excess flow check valve in the No. 2-1 emergency diesel generator control air system was tripping, leaving the diesel inoperable. The effort was very well supervised and implemented, and resulted in successful return of the diesel to service.

MWR 25577 Emergency Diesel Generator 1-2 Inspection Cover Repair

Maintenance and Engineering Assessment personnel missed an opportunity to perform a partial internal inspection of the diesel engine during the repair of the cover gasket. The material condition of the diesel air box or piston rings for two pistons was not addressed. Although the system engineer was involved with a higher priority activity on the Unit 2 diesel, other component engineers with diesel expertise were available.

3.1.1 Failure to Calibrate Effluent Release Velocity Probes (Violation 50-412/93-22-01) (Closed)

Between February 1991 and April 1993, the licensee exceeded the 18 month calibration interval for four of the five effluent release velocity probes at Unit 2. This resulted in a Notice of Violation (50-412/93-22-01) which was issued on October 1, 1993. The licensee responded to the Notice of Violation on November 3, 1993. The stated reasons for the violation were: (1) the work group responsible for the calibration of the probes failed to enter the requirements into the computer-based tracking system; and (2) the work group responsible for overall cognizance of the gaseous effluent radiation monitor systems failed to initiate maintenance work requests for the probe calibrations (because it was mistakenly believed that the quarterly channel functional tests satisfied the calibration requirements). The licensee's corrective actions included: verification that all Technical Specification ventilation system process flow instruments were in compliance with calibration requirements; discussions with appropriate personnel to emphasize the importance of scheduling and conducting surveillance tests; and entering the calibration requirements for the Unit 2 velocity probes into the Maintenance Planning and Scheduling System. The inspectors reviewed the licensee's response to the Notice of Violation, discussed the issue with personnel responsible for scheduling and supervising the velocity probe calibrations, verified that the calibration requirements had been entered into the Maintenance Planning and Scheduling System, and reviewed calibration data for selected probes. The inspectors concluded that the licensee's actions were appropriate. This item is closed.

3.2 Surveillance Observations

The inspectors witnessed/reviewed selected surveillance tests to determine whether properly approved procedures were in use, details were adequate, test instrumentation was properly calibrated and used, technical specifications were satisfied, testing was performed by qualified personnel, and test results satisfied acceptance criteria or were properly dispositioned. The operational surveillance tests (OSTs), temporary operating procedures (TOPs), reactor surveillance tests (RSTs), and maintenance surveillance procedures (MSPs) listed below were observed and reviewed. Unless otherwise indicated, the activities observed and reviewed were properly conducted without any notable deficiencies.

1MSP 21.25I P494 Loop 3 Steamline Pressure Protection Channel II Calibration
1MSP 1.04 Solid State Protection System (SSPS) Train 'A' Bi-Monthly Test
1MSP 1.05 Solid State Protection System Train 'B' Bi-Monthly Test

During the 'B' train SSPS testing, the inspector observed a self-checking deficiency in that the technicians skipped over the testing of the permissive functions. The inspectors alerted the technicians to this deficiency before they continued on. The inspectors discussed this with the technician's supervisor and had no further concerns. Subsequent testing of the 'A' train SSPS was accomplished without incident and excellent self-checking techniques were demonstrated.

OST 1.30.2 Reactor Plant River Water (RPRW) Pump 1A Test
1TOP 93-06 Flushing 'B' RPRW Header Using 1WR-P-1B RPRW Pump

During testing of the 'A' train RPRW pump, as-found flow through the 'A' and 'C' recirculation spray heat exchangers (RSHX) was at the minimum technical specification allowable of 8000 gpm. The as-left flow following the January outage was 9700 gpm (throttled). Per procedure, the 'A' and 'C' RSHXs were individually flushed with river water and a final total flow rate of 9500 gpm was achieved. No flow degradation of the 'B' train was identified during the monthly flush. The as-found and as-left flow through the 'B' and 'D' RSHXs was 9200 gpm. These results for both the 'A' and 'B' trains are consistent with those tests previously conducted. The 'A' train has a piping configuration which creates a debris trap where the RSHX supply line taps off the main river water header. The licensee's action to continue the monthly flushes, of especially the 'A' header, is appropriate.

2RST-2.6 Incore/Excore Axial Imbalance Monthly Check
2RST-3.2 Incore Movable Detector Flux Mapping

Both of the reactor surveillance tests listed above were performed by a knowledgeable reactor engineering staff person. The tests were conducted in a professional, conservative manner and met the applicable requirements of the Technical Specifications.

2OST-1.11D Train A CIA Go Test

During this test, one of the letdown isolation valves closed properly, but would not re-open until flow through the letdown system was increased. The operators involved with the test did not initiate action to evaluate or correct the problem because they had seen it before and did not feel that it affected the ability of the valve to close. The inspectors discussed this problem with the shift foreman who promptly initiated a maintenance work request for the valve. This issue was also presented to the Unit 2 Operations Manager for his evaluation.

4.0 ENGINEERING (71707, 90712, 92700)

4.1 Review of Written Reports

The inspectors reviewed Licensee Event Reports (LERs) and other reports submitted to the NRC to verify that the details of the events were clearly reported, including accuracy of the description of cause and adequacy of corrective action. The inspectors determined whether further information was required from the licensee, whether generic implications were indicated, and whether the event warranted further onsite followup. The following LERs were reviewed:

Unit 2:

93-15 "Oxygen Analyzers Inoperable Due to Closed Inlet Valve"

93-09 "Failure to Calibrate Radiation Monitor Velocity Probes"

The issues associated with the above LERs are discussed in Sections 2.4 and 3.1.1 of this report, respectively. The inspectors had no further comments.

The above LERs were reviewed with respect to the requirements of 10 CFR 50.73 and the guidance provided in NUREG 1022. Generally, the LERs were found to be of high quality with good documentation of event analyses, root cause determinations, and corrective actions.

4.2 Nonconservative High Neutron Flux Trip Setpoints

Westinghouse has identified a potential safety issue regarding plant operation with a reduced number of main steam safety valves operable, and has issued generic communications. Technical specifications allow plants to operate at a reduced power level, as determined by the high neutron flux trip setpoint, with a reduced number of main steam safety valves operable. However, these trip setpoints may not be low enough to preclude a secondary side overpressure condition.

The main steam safety valves are designed to provide secondary side overpressure protection (110 percent design pressure) on a full power loss of load/turbine trip transient. Plant technical specifications, which allow reduced power operation with a reduced number of safety valves operable, is not based on a detailed analysis, but on the assumption that the maximum allowable initial power level is a linear function of the available safety valve relief capacity. Westinghouse determined that this assumption is not valid and has developed a methodology to recalculate Technical Specification 3.7-1, "Power Range Neutron Flux High Setpoints." The licensee's Nuclear Safety and Engineering Departments have reviewed this issue and determined that it is applicable to both units. New power range flux trip setpoints have been developed and are being administratively controlled by the Operations Department. For example, the maximum allowable high-flux trip setpoint given one inoperable safety valve on any operating steam generator has been determined to be 57 percent (for Unit 1), vice the technical specification limit of 87 percent. The inspectors reviewed Engineering Memorandum 107395 and found that the new setpoints were developed consistent with the Westinghouse methodology. The licensee has initiated a technical specification change request to permanently address this issue. Overall, the inspectors considered the licensee's review and application of this generic industry information to be timely and thorough.

4.3 Unit 2 HHSI Alternate Minimum Flow Design Change

The original design of the Beaver Valley Unit 2 high head safety injection (HHSI) system incorporated normal pump minimum flow lines and alternate pump minimum flow lines. The normal minimum flow lines were isolated automatically and the alternate minimum flow lines were placed in service automatically following a safety injection signal. The alternate minimum flow lines contained relief valves which only passed flow if reactor coolant system pressure reached shut-off head pressure for the HHSI pumps. This condition could be expected during certain design basis secondary system high energy line breaks.

On August 20, 1992, the NRC issued Information Notice 92-61 "Loss of Hig' Head Safety Injection," which outlined operability problems with some Westinghouse HHSI alternate minimum flow systems. To address the issues in the information notice, Duquesne Light Company retired the Unit 2 alternate minimum flow system in place during the last refueling outage (September to December 1993). This design change required that the normal minimum flow lines remain in service during design basis events (all automatic closure signals were removed from the normal minimum flow line valves).

On February 21, 1994, during a licensing department review of the minimum flow system modification package, the licensee discovered that they failed to incorporate NRC Branch Technical Position ICSB 18 "Application of the Single Failure Criterion to Manually-Controlled Electrically-Operated Valves" into the design change. This error created a problem involving 2CHS-MOV-373, a motor-operated valve in the normal minimum flow system. Under the assumptions in Branch Technical Position ICSB 18, this valve could inadvertently close causing a loss of all flow through the normal minimum flow system. The normal system alignment for this valve was changed to "deenergized open" following the licensee's recognition of the error. The inspectors concluded that de-energizing open this valve resolved any immediate single failure safety concerns. The licensee is continuing to evaluate the design change error, and the licensee is preparing a Licensee Event Report (LER) on this event.

The inspectors' initial review of the minimum flow design change package identified that the post-modification testing requirements were not complete. There was no mention of any test to set and verify HHSI system flow rates. This test was, however, completed satisfactorily by the licensee. The licensee has changed their minor design change procedures to ensure more complete post-modification test specifications. The inspectors are continuing their evaluation of the design change package and will review the LER when issued.

Following the identification of the Unit 2 single failure issue, the licensee reviewed the Unit 1 charging system mini-flow isolation valve (1MOV-CH-373) for single failure applicability. Unit 1 previously eliminated the safety injection auto-closure signal to the mini-flow valves and performed an analysis to confirm adequate mass injection still existed. Unit 1 does not have an alternate mini-flow line installed. Also, Unit 1 is not committed to the NRC Branch Technical Position for single-failure criterion, nor was the single failure of 1MOV-CH-373

addressed in the NRC safety evaluation report during original licensing reviews. Therefore, even though 1MOV-CH-373 has been energized open, Unit 1 has not been outside its design basis or its licensing basis. On February 25, 1994, the licensee decided to apply the single-failure criterion and de-energize open 1MOV-CH-373 as a good practice. The inspectors considered this action to be prudent and had no further concerns at Unit 1.

4.4 Emergency Diesel Generator Relief Valve Replacement

Two relief valves in the No. 2-1 emergency diesel generator control air system recently required replacement. The original valves were no longer available. The licensee located replacement valves and performed an engineering evaluation to assure their acceptability. The inspectors reviewed the engineering evaluation and attended the onsite safety committee meeting for approval of the change. The inspectors concluded that the evaluation was technically adequate, and the licensee met the requirements of 10 CFR 50.59.

4.5 Recirculation Spray Pump Pit Entrance Hatches (Unresolved Item 50-412/93-30-05) (Closed)

The recirculation spray pump pit hatch design and use was designated as an unresolved item (50-412/93-30-05) because the licensee's Updated Final Safety Analysis Report (UFSAR) indicated that the hatches were a three hour fire barrier; however, there was no evidence that the hatches were actually installed as a rated fire barrier. Additionally, the hatches appeared to be a flooding boundary and were being kept open.

The licensee determined that the hatches were never intended to be a rated fire barrier. However, they will act as a smoke and hot gas barrier. The hatches are intended to be a flooding boundary; however, an engineering calculation showed that open recirculation spray pump pit hatches would not have presented any additional challenges to safety related equipment during a flooding event in the safeguards building. A safety evaluation was completed and approved accepting the current configuration of the hatches. The licensee has placed permanent caution tags on the hatches to indicated that they must remain shut, and will update the UFSAR to indicate their actual configuration. The inspectors concluded that the licensee's actions were appropriate. This item is closed.

4.6 Unit 2 SLCRS Surveillance Testing (Unresolved Item 50-412/93-17-01) (Closed)

Unresolved Item 50-412/93-17-01 was opened following NRC identification that the licensee did not have periodic tests to ensure that the Unit 2 supplemental leak collection and release system (SLCRS) would perform its design basis function. The licensee recently resolved this problem by developing an appropriate test. The test was completed on January 28, 1994, and demonstrated that the Unit 2 SLCRS was, in its as-found condition, capable of performing its design basis function. The inspectors reviewed the test and the results and concluded that the scope and conduct of the test were adequate. This item is closed.

5.0 PLANT SUPPORT (71707)

5.1 Radiological Controls

Posting and control of radiation and high radiation areas were inspected. Radiation work permit compliance and use of personnel monitoring devices were checked. Conditions of step-off pads, disposal of protective clothing, radiation control job coverage, area monitor operability and calibration (portable and permanent), and personnel frisking were observed on a sampling basis. Licensee personnel were observed to be properly implementing their radiological protection program.

5.2 Security

Implementation of the physical security plan was observed in various plant areas with regard to the following: protected area and vital area barriers were well maintained and not compromised; isolation zones were clear; personnel and vehicles entering and packages being delivered to the protected area were properly searched and access control was in accordance with approved licensee procedures; persons granted access to the site were badged to indicate whether they have unescorted access or escorted authorization; security access controls to vital areas were maintained and persons in vital areas were authorized; security posts were adequately staffed and equipped, security personnel were alert and knowledgeable regarding position requirements, and that written procedures were available; and adequate illumination was maintained. Licensee personnel were observed to be properly implementing and following the Physical Security Plan.

5.3 Housekeeping

Plant housekeeping controls were monitored, including control and storage of flammable material and other potential safety hazards. The inspectors conducted detailed walkdowns of accessible areas of both Unit 1 and Unit 2. Housekeeping at both units was acceptable. The inspectors noted continuing management attention to proper housekeeping and stowage in safety related areas.

5.4 Resin Transfer (VIO 50-334/93-01-01) (Closed)

This violation involved the failure to follow a resin flush procedure as operators were unable to accurately verify a completed resin transfer. Operators had failed to address procedural and instrumentation inadequacies. This violation remained open following the identification of additional procedural deficiencies and operator performance questions.

The inspectors reviewed the resin flush procedures (Operating Manual Chapter 18) and noted that the outstanding operating manual change notices have been incorporated into the applicable procedures. Additionally, operators appropriately walked down the procedures and verified they were properly revised prior to their actual use. Minor deficiencies were

identified by the operators and were corrected prior to performing the resin flushes. The inspectors also observed a resin flush from the spent resin hold-up tank to a high integrity container which was completed without incident. Operators demonstrated a good questioning attitude and proper procedural adherence. The pre-job briefing adequately covered all aspects of the evolution, including health physics precautions. The inspectors also verified all accessible areas were locked and properly posted during the resin transfer. This violation is closed.

6.0 ADMINISTRATIVE

6.1 SALP Management Meeting

A public meeting was held with Duquesne Light Company management on February 18, 1994, at the licensee's emergency response facility to present the results of the NRC Systematic Assessment of Licensee Performance (SALP) (SALP slides attached). Mr. W. Kane, Deputy Regional Administrator, Mr. W. Lanning, Acting Director, Division of Reactor Projects, Mr. W. Butler, Directorate I-3 Director, and Dr. G. Edison, Senior Project Manager attended from Region I and NRC Headquarters. The NRC managers also toured the site prior to the public meeting.

6.2 Preliminary Inspection Findings Exit

At periodic intervals during this inspection, meetings were held with senior plant management to discuss licensee activities and inspector areas of concern. Following conclusion of the report period, the resident inspector staff conducted an exit meeting on March 17, 1994, with Beaver Valley management summarizing inspection activity and findings for this period.

6.3 Attendance at Exit Meetings Conducted by Region-Based Inspectors

During this inspection period, the inspectors attended the following exit meetings:

Dates	Subject	Inspection Report No.	Reporting Inspector
2/17/94	Emergency Preparedness Exercise	94-01/01	J. Laughlin
2/24/94	Security	94-05/05	G. Smith
3/11/94	Environmental Monitoring	94-06/06	L. Peluso

6.4 NRC Staff Activities

Inspections were conducted on both normal and backshift hours: 21.7 hours of direct inspection were conducted on backshift; 10 hours were conducted on deep backshift. The times of backshift hours were adjusted weekly to assure randomness.

G. Edison, NRC Project Manager, visited the inspectors and toured the site on February 28 and March 1.

R. Barkanic, Pennsylvania Department of Environmental Resources, visited the inspectors on March 7 and discussed inspection activities and the licensee's performance.

ATTACHMENT

BEAVER VALLEY POWER STATION

SALP MANAGEMENT MEETING SLIDES

FEBRUARY 18, 1994

Beaver Valley SALP Management Meeting

Assessment Period

June 14, 1992 - November 27, 1993

Presentation

▪ Introduction	W. Kane
▪ Report Presentation	W. Lanning
▪ Licensee Presentation	DLCo
▪ Discussion	
▪ Closing Remarks	W. Kane

Revised SALP Process
Effective July 14, 1993

- Changed from 7 areas to 4
- SA/QV incorporated into each area
- EP, Radiological Controls, and Security combined into "Plant Support"
- SALP Board Membership consists of 4 senior managers
- Emphasis on the last 6 months of the period
- Trends no longer included in the category ratings

SALP Functional Areas

- Plant Operations
- Engineering
- Maintenance
- Plant Support

Performance Category Ratings

- Category 1 — Superior Performance
- Category 2 — Good Performance
- Category 3 — Acceptable Performance

SALP Category Ratings for the Previous Period Ending June 13, 1992

▪ Plant Operations	1
▪ Engineering & Tech Support	2
▪ Maintenance/Surveillance	2
▪ Radiological Controls	1
▪ Emergency Preparedness	1
▪ Security	1
▪ Safety Assessment Quality Verification	2

SALP Category Ratings for the Period Ending November 27, 1993

▪ Operations	1
▪ Engineering	2
▪ Maintenance	2
▪ Plant Support	1

Operations
Category 1

- Management oversight of complex activities was excellent
- Strong support from Off-site Review Committee
- Shutdown risk management was excellent
- Aggressive response to industry issues
- Outstanding response of operators to plant transients and abnormal conditions
- Continued commitment to improved procedures
- Some operator weaknesses in self-checking and procedure adherence during routine activities
- Quality Services surveillance of non-routine evolutions was lacking

Engineering
Category 2

- Proactive approach towards identification and reporting of significant generic safety issues
- Root cause analyses were thorough
- Most engineering evaluations and modifications were technically accurate and thorough
- Weaknesses were noted in some modification packages prepared late in the assessment period
- Trouble-shooting activities following load sequencer failure were poorly planned and documented
- Did not adequately control application of solid-state digital technology interface within an electro-mechanical system
- Programmatic deficiencies in MOV and erosion/corrosion programs

Maintenance
Category 2

- Troubleshooting and corrective maintenance were usually well planned and completed
- Root cause analyses for equipment failures were comprehensive
- In-service test and inspection programs were proactive and properly focused
- Personnel errors during maintenance resulted in several challenges
- Several weaknesses were identified which could have affected the operability of safety equipment

Plant Support
Category 1

- Maintained excellent health physics coverage
- Extensive ALARA planning during significant tasks
- Some violations of RWP requirements
- High quality QA audits of environmental monitoring program
- Aggressive chemistry program
- Radioactive material shipments were well-controlled
- Emergency response facilities were maintained in operationally ready status
- Excellent performance during 1993 annual exercise
- Security program was excellent with strong management support