September 22, 1998

Mr. J. E. Cross
President
Generation Group
Duquesne Light Company
Post Office Box 4
Shippingport, Pennsylvania 15077

SUBJECT: INTEGRATED INSPECTION 50-334/98-03, 50-412/98-03

Dear Mr. Cross:

This letter refers to your September 4, 1998 correspondence, in response to our August 5, 1998, letter.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By:

Peter W. Eselgroth, Chief
Projects Branch 7
Division of Reactor Projects

Docket Nos.: 50-334; 50-412

cc w/o cy of Licensee Response Letter:
Sushil C. Jain, Senior Vice President, Nuclear Services Group
R. Brandt, Vice President, Nuclear Operations Group and Plant Manager
R. LeGrand, Vice President, Operations Support Group
B. Tuite, General Manager, Nuclear Operations Unit
W. Kline, Manager, Nuclear Engineering Department
M. Pergar, Acting Manager, Quality Services Unit
J. Arias, Director, Safety & Licensing Department
J. Macdonald, Manager, System and Performance Engineering

cc w/cy of Licensee Response Letter:
M. Clancy, Mayor, Shippingport, PA
Commonwealth of Pennsylvania
State of Ohio
State of West Virginia

Distribution w/cy of Licensee Response Letter:
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Duquesne Light Company Beaver Valley Power Station
P.O. Box 4
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SUSHIL C. JAIN
Senior Vice President
Nuclear Services
Nuclear Power Division

(412) 393-5512
Fax (724) 643-8069

September 4, 1998
L-98-176

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Integrated Inspection Report 50-334/98-03 and 50-412/98-03
Reply to Notice of Violation

In response to NRC correspondence dated August 5, 1998, and in accordance with 10 CFR 2.201, the attached reply addresses the Notice of Violation transmitted with the subject inspection report.

If there are any questions concerning this response, please contact Mr. S. H. Hobbs at (412) 393-5203.

Sincerely,

Sushil C. Jain

Attachment

c: Mr. D. S. Brinkman, Sr. Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator
Mr. C. W. Hehl, Director, Division of Reactor Projects, Region 1

DELIVERING QUALITY ENERGY

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DUQUESNE LIGHT COMPANY
Nuclear Power Division
Beaver Valley Power Station, Unit No. 1 and No. 2

Reply to Notice of Violation

Integrated Inspection Report 50-334/98-03 and 50-412/98-03
Letter Dated August 15, 1998

VIOLATION (Severity Level IV, Supplement I)

Description of Violation (50-334(412)/98-03-01)

Technical Specification 6.8.1.a requires that, "written procedures shall be established, implemented and maintained covering ... the applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, "Quality Assurance Program Requirements," Rev. 2, February 1978." Appendix "A" of Regulatory Guide 1.33 recommends procedures for surveillance testing, operation, and control of maintenance work (including clearances) for safety related equipment.

Contrary to the above, during the period April 28 through June 8, 1998, the licensee failed to implement procedures as evidenced by the following examples:

1. Procedure 2OST-30.13A, "Train A Service Water System Full Flow Test," Rev. 8, requires that the service water system be returned to the desired configuration as directed by the nuclear shift supervisor/assistant nuclear shift supervisor. The procedure was not properly implemented, in that on May 29, after conducting the service water test, operators failed to properly restore service water to the "A" high head safety injection pump. The "A" high head safety injection pump was improperly considered operable and was thus improperly credited as part of an operable boration flow path from June 2 to June 8. On June 8, a licensed operator identified that service water was aligned to the "C" high head safety injection pump and not the "A" pump.

2. Procedure 1/2 OM-48.1.D, "Operations Shift Rules of Practice," Rev. 25, requires that if an instrument provides an apparent improper indication, the operator should believe the instrument and respond conservatively to prevent damage to station equipment unless the instrument indication is demonstrated to be false by checking against at least two redundant instruments. The procedure was not properly implemented, in that on May 22, operators did not respond conservatively when the branch flow line flow data for the high head full flow test indicated pump runout conditions. Testing continued without proper assessment of the indication of runout flow and the potential adverse effects on the high head safety injection pump.

3. Procedure NPDAP 3.4, "Clearance/Tagout Procedure," Rev. 9, requires a senior reactor operator to verify that the tagout is properly prepared. The procedure was not properly implemented, in that on June 3, the clearance for exhaust fan 222-B was not properly prepared and was posted. The clearance deenergized fan 222-B; however, the clearance also disabled the two emergency diesel generator room ventilation fans, which was not recognized. Subsequently, the licensee identified EDG 2-2 inoperability when operators attempted to start an emergency ventilation fan and it failed to start. EDG 2-2 was inoperable for approximately four hours.

4. Procedure 2MSP-1.14B-I, "Train B Reactor Trip and Bypass Breaker Time Response Test," Rev. 1, step K.1.b requires the removal of the jumper that disabled the Unit 2 general warning trip. The procedure was not properly implemented, in that on May 10, operators discovered that the jumper was still installed in the solid state protection system. The technicians failed to remove the jumper on April 28 as required in the procedure, despite requirements for double verification.

Reasons For The Violation

For the examples cited in the violation, Examples 1 and 2 are attributable to a combination of human performance deficiencies and procedure weaknesses. In Example 3, the clearance was prepared based on load list information contained in the operating manual; however, this information was incomplete in that it did not provide details concerning the unique aspects of the circuit design. Example 4 was caused by a human performance error by the Instrument & Control (I&C) Technicians involved, who mistakenly believed that the procedure step to remove the jumper was optional.

Corrective Actions Taken and Corrective Actions Planned to Prevent Further Violations

The corrective actions taken for each example listed in the violation are as follows:

Example 1

1. Condition Report 981236, concerning the service water full flow surveillance test, was written on June 8, 1998, to document the problem for evaluation and resolution under the corrective action program.

2. Human performance issues related to Operations were reviewed by August 27, 1998, between the Operations Manager and the operating crews at the periodic management-shift crew meetings that are held during the requalification training

week. These sessions were used by the Operations Manager to review the Operations Standards and management expectations regarding human performance, with emphasis on the need to reduce human performance errors.

3. The service water full flow surveillance test procedures (2OST-30.13A & B) were revised on September 1, 1998. Changes included instructions to ensure that service water flow to the in-service high head safety injection (HHSI) pump is restored prior to the swapping of service water trains and/or from exiting the test procedure.

Example 2

1. The issues brought to the attention of Operations management by the NRC inspectors concerning the HHSI full flow surveillance test were immediately discussed with the operating crews involved in the test. The crews were reminded of management expectations and standards that emphasize the need to compare all process indications when conflicting data is obtained and to stop and resolve problems encountered during plant operations and/or testing before proceeding.

2. Procedure weaknesses noted during the performance of the test were identified and documented in an Operations Standard Surveillance performed on May 23, 1998. The Operations Standard Surveillance is a surveillance critiquing method periodically used by the on-shift SROs to ensure surveillance procedures and their performance meet management expectations for Operations standards, as well as providing for an on-going quality check of procedural content and accuracy.

3. Condition Report 981251 was written on June 5, 1998, to document the problem for evaluation and resolution under the corrective action program.

4. The HHSI pump full flow operations surveillance test procedure (2OST-11.14B) was revised on September 1, 1998, to correct the deficiencies that were identified during the May 23, 1998, performance. This surveillance test will be completed prior to Beaver Valley Unit 2 (BV-2) entry into Mode 4 from its current extended outage.

Example 3

1. Condition Report 981194, concerning the inadequate load list information on the emergency diesel generator exhaust fans breakers, was written on June 3, 1998, to document the problem for evaluation and resolution under the corrective action program.

2. The system power supply and control switch list, and MCC load list for the affected breaker(s) were revised by September 3, 1998, to note that the opening of the EDG room exhaust fan breaker will render both EDG room supply fans unable to start due

to the electrical configuration of the EDG room high temperature switch circuitry and the interlock relationship between the two supply fans. The changes to the load lists will help to ensure that future clearances for the EDG exhaust fans cannot occur without due consideration of EDG operability.

3. A keyword search of the Condition Report (CR) data base (from 1997 on) was performed to determine other CRs associated with the keywords "load list." This search resulted in 12 CRs, which were reviewed and none were attributed to be caused by a deficiency in the station's various breaker load lists. In fact, in several instances the detail contained in the load lists contributed to conservative decisions being made that either prompted further research prior to proceeding, or, in one instance, greatly aided system restoration and contingency actions during the loss of a power panel. The uniqueness of this particular circuit's configuration is believed to be a major contributor to this event, and therefore, similar problems of this type are not anticipated to occur.

4. Condition Report 981194 will be reviewed by the Operations Manager by October 31, 1998, with the operating crews at the periodic management-shift crew meetings that are held during the requalification training week. Review of the condition report will be used to stress management expectations concerning the use of proper self-checking techniques, clearance review and approval requirements, and the role of a questioning attitude.

Example 4

1. Condition Report 981172, concerning the general warning trip jumper, was written on May 29, 1998, to document the problem for evaluation and resolution under the corrective action program.

2. The technicians involved with the performance of the procedure were counseled by August 11, 1998, on their failure to properly follow station procedures.

3. Procedures 2MSP-1.14A-I and 2MSP-1.14B-I were revised by August 20, 1998, to completely remove optional instruction steps.

4. This event and the STAR (Stop, Think, Act and Review) concept will be reviewed with the Instrument and Control Technicians as part of their continuing training program by October 31, 1998. In addition, site relay crew personnel will also review this event and the STAR concept as part of their continuing training program by December 31, 1998. This training will emphasize the use of proper self-checking techniques.

The examples listed above will also be included in scheduled training for the operating crews as part of the License and Non-License Requalification Training by December 31, 1998. This training will be used to heighten sensitivity to human performance errors on shift and review Operations Standards related to: conservative decision making when challenged with instrument indication anomalies, pre-job briefing requirements, communicating to the crew activities affecting safety-related equipment, use of proper self-checking/peer-checking techniques, and initiating corrective actions for deficiencies identified during surveillance testing.

In addition to the above, the following initiatives are being taken to improve human performance:

1. BVPS recently introduced the STAR (Stop, Think, Act, and Review) concept at the station as a preemptive measure to minimize human performance errors. Currently being phased in station-wide, the STAR program is an improvement over the previous BEST (Before Each Step Think) program as it includes a review step to the self-checking sequence. STAR principles are emphasized to the operators during simulator and on-the-job training (OJT) exercises to further underscore the importance of proper self-checking and peer-checking techniques.

2. Prior to the startup of Beaver Valley Unit 1 (BV-1) from its extended outage, each department conducted standdowns to emphasize the use of the STAR concept during BV-1 startup activities. In addition, Operations managers and other senior managers provided 24 hour a day oversight of BV-1 startup activities to reinforce management expectations and standards to site personnel. Twenty-four hour management oversight will also be in place during BV-2 startup activities from the current outage. Departmental standdowns are also planned prior to this BV-2 startup to re-emphasize the STAR concept.

3. Management will formalize a human performance program at Beaver Valley Units 1 and 2. A plan and schedule for implementation of this program will be developed by November 15, 1998.

Date When Full Compliance Will Be Achieved

1. Surveillance test 2OST-11.14B will be completed prior to BV-2 entry into Mode 4 from its current outage.

2. Condition Report 981194 will be reviewed with the operating crews by October 31, 1998.

3. The examples cited in the violation will be discussed in Licensed and Non-Licensed Requalification Training by December 31, 1998.

4. Condition Report 981172 and the STAR concept will be reviewed in the continuing training program for I&C Technicians by October 31, 1998, and in the continuing training program for site relay crew personnel by December 31, 1998.

5. Prior to BV-2 startup from the current outage, departmental standdowns will be conducted to re-emphasize use of the STAR concept.

6. Senior and operations management will provide 24 hour a day oversight of BV-2 startup activities from the current outage.

7. A plan and schedule for implementation of a formal human performance program will be developed by November 15, 1998.