

# Duquesne Light Company

Beaver Valley Power Station  
P.O. Box 4  
Shippingport, PA 15077-0904  
(412) 393-5255

July 16, 1992

JOHN D. SIEBER  
Vice President - Nuclear Group

Director, Office of Enforcement  
U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

Subject: Beaver Valley Power Station, Unit No. 2  
Docket No. 50-412, License No. NPF-73  
Reply to Notice of Violation and Proposed Imposition of  
Civil Penalty

Gentlemen:

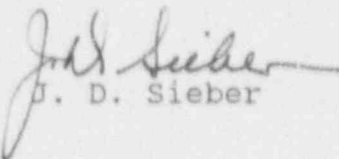
In response to NRC correspondence dated June 17, 1992, and in accordance with 10 CFR 2.201, the attached reply addresses the Notice of Violation and Proposed Imposition of Civil Penalty which was enclosed with your letter.

The cited events were discussed in Inspection Report No. 92-07 and also in an Enforcement Conference held on May 19, 1992.

A check in the amount of \$75,000 is enclosed for payment of the civil penalty.

If there are any questions concerning this response, please contact Mr. Nelson Tonet at (412) 393-5210.

Sincerely,

  
J. D. Sieber


Attachment

cc: Mr. L. W. Rossbach, Sr. Resident Inspector  
Mr. T. T. Martin, NRC Region I Administrator  
Mr. A. W. DeAgazio, Project Manager  
Mr. M. L. Bowling (VEPCO)

2300.0

Rec'd  
w/ # 901777 for  
\$75,000.00.

9207230193 420716  
PDR ADOCK 05000412  
Q PDR

TEH  


COMMONWEALTH OF PENNSYLVANIA) )  
COUNTY OF BEAVER ) ) SS:

On this 16th day of July, 1992,  
before me, Shella M. Fattore, a Notary Public in and for said  
Commonwealth and County, personally appeared J. D. Sieber, who being  
duly sworn, deposed, and said that (1) he is Vice President - Nuclear  
of Duquesne Light, (2) he is duly authorized to execute and file the  
foregoing Submittal on behalf of said Company, and (3) the statements  
set forth in the Submittal are true and correct to the best of his  
knowledge, information and belief.

Shella M. Fattore

Notarial Seal  
Shella M. Fattore, Notary Public  
Shippingport Boro, Beaver County  
My Commission Expires Sept. 26, 1994  
Member, Pennsylvania Association of Notaries

Beaver Valley Power Station, Unit No. 2  
Docket No. 50-412, License No. NPF-73  
Notice of Violation and Proposed Imposition of Civil  
Penalty  
Page 2

bcc: ORC Members  
T. P. Noonan  
K. D. Grada  
K. E. Halliday  
R. L. Hansen  
T. W. Dearborn  
V. Palmiero  
T. A. Sockaci  
C. V. Mancuso  
D. P. Price  
J. R. Kasunick  
L. R. Freeland  
K. L. Ostrowski  
F. D. Schuster  
T. M. McGhee  
J. V. Vassello  
F. J. Lipchick  
B. F. Sepelak  
R. W. Fedin  
M. A. Pergar  
S. H. Hall  
M. Pavlick  
J. E. Starr  
Central File (2) ND2NSM:5652

References:

ND1MNE:6205  
ND1MNE:6209  
BV-2 LER 92-004  
BV-2 IER 92-005  
ND3MNO:3310

DUQUESNE LIGHT COMPANY  
Nuclear Group  
Beaver Valley Power Station Unit No. 2

Reply to Notice of Violation and  
Proposed Imposition of Civil Penalty  
Letter dated June 17, 1992

VIOLATION I (Severity Level III; Supplement I)

Description of Violation (50-412/92-07-01)

10 CFR Part 50, Appendix B, Criterion III (Design Control) requires, in part, that measures be established to assure that regulatory requirements and design bases are correctly translated into design documents. Design control measures shall provide for verifying or checking the adequacy of design. Also, design changes shall be subject to design control measures commensurate with those applied to the original design.

BVPS Unit 2 FSAR, Section 8.3.1.1.8, Automatic Loading and Load Shedding, states in part, that reconnection of EDG loads will commence, sequentially, in specified load blocks described in Table 8.3-3.

Contrary to the above, the licensee failed to establish adequate design control measures for verifying or checking the adequacy of a vendor-recommended change to a component installed under Design Change Package (DCP) 1545 in September 1990. The DCP 1545 was initiated to replace the electro-mechanical relays (Nos. 162-EGSAA (B)X1, 762-EGSA(B)A, and 862-EGSA(B)A) in emergency diesel generator (EDG) 2-1 and 2-2 load sequencers with commercial grade solid state relays. To meet the EDG sequencers design bases, the replacement relays had been qualified for the safety-related application through qualification testing in a configuration that applied 24 vdc across the internal timer clock circuit. However, the vendor-recommended change, made prior to completion of the DCP, resulted in the application of excessive voltage (112 to 129 vdc) across the circuit. The effect of this configuration change on the relay function was not reviewed by the licensee to ensure that the regulatory requirements and design bases specified in FSAR Table 8.3-3 for the EDG sequencers were met.

Discussion of Violation

The need for this configuration change (i.e., to maintain the clock circuit of the six relays in a continuously energized state) was based on the results of the pre-testing of this relay which was performed prior to completion of DCP 1545 (May, 1990). At that time, verbal discussions with the manufacturer's application engineers resulted in their recommendation (which was not documented) for this configuration change for six of the sixteen relays installed, in order to achieve improved timing accuracy at the 0.5 and 2 second settings. Startup testing was successfully completed and the relays were placed in service during October 1990.

Discussion of Violation (continued)

Drawings of the relay's internal circuitry were requested from the manufacturer at the time that this change was recommended but were not supplied due to their proprietary nature. An alternate analysis was not completed to justify the change due to the unavailability of internal wiring information. As a result, the manufacturer's verbal recommendation became the basis for the acceptability of the configuration change.

Admission of the Alleged Violation

Duquesne Light Company (DLC) admits to the violation as stated.

Reason for Violation

This violation resulted from the inadequate implementation of procedural criteria which address the design and documentation requirements for the application of equipment used in a configuration differing from the qualified design configuration. This instance was further complicated by the manufacturer's proprietary information restrictions on the relay's internal design needed for full circuit analysis and the failure to document verbal communications with the manufacturer.

Corrective Action Taken

Corrective actions were immediately initiated to resolve the problems found. These actions are as follows:

1. All six relays were replaced and rewired per the qualified configuration by April 8, 1992 (as approved by design change package 1870 issued March 31, 1992.) Testing was successful, and the relays and the emergency diesel generator load sequencing circuits are in service in accordance with the qualified configuration, regulatory requirements and design bases as described in FSAR Table 8.3-3.
2. The manufacturer's proprietary design information for the relay internals was obtained, and a technical evaluation of the failure of these relays was completed on May 15, 1992. It was found that an internal 2 watt resistor (R9) could generate in excess of 2 watts of heat energy depending on input voltage, electrical tolerances. This resistor's size was marginal in this application and therefore represents an underdesign for this configuration. (Note: The manufacturer subsequently recommended a replacement of this 2 watt resistor with a 5 watt resistor to resolve this problem, after these failures were discovered and reported by DLC.)
3. Safety evaluations were conducted for the complete failure of the six attached relays, and they concluded that the equipment loads that should have started at step 4 of the sequencer timer (auxiliary feed pump and quench spray pump) would now start at step 6, 45 seconds later. This 45 second delay would not have caused any of the safety analysis limits to be exceeded.

Corrective Actions Taken (continued)

4. Simulator scenarios were conducted for a possible worst case condition (which would involve the sequencer locking out if the relay energized shut and the timer unit failed.) In this case, operator actions were necessary to energize the proper equipment as specified in Emergency Procedure E-0. These actions were successfully completed by the operators during the simulations. Therefore, it is expected that the condition would have been recognized and properly addressed by operations personnel.
5. A Procedure Report was issued on May 21, 1992 to notify all Nuclear Engineering Department personnel of the event and of pending procedure changes which were directed to improve documentation of vendor input.
6. Bench testing of this relay was initiated on April 3, 1992 to determine the life of this relay under this alternate configuration. As of the date of this letter, this relay has not failed.
7. This event was reported to the NRC via a 10 CFR 50.72 four hour notification and subsequently reported in LER 92-004.

Actions Taken to Prevent Recurrence

1. Procedural changes have been initiated in the areas of Design Change Control, Engineering Specifications, and Design Verification. These changes clearly specify the necessary design and documentation requirements (including proprietary information) in appropriate design control procedures. These changes also specifically require that all vendor communications used as design input information be documented. Training of Nuclear Engineering Department personnel who perform design activities will be initiated upon issue of these revised procedures.
2. A review of design change packages involving Class 1E electrical/electronic equipment which were implemented over the last five years will be performed to identify any potential deviations from the qualified design configuration.

Date When Full Compliance will be Achieved

Full compliance was achieved upon replacement and testing of the failed relays.

Procedure changes and training will be completed by October 1, 1992.

The review of design change packages will be completed by December 31, 1992.

VIOLATION #1 (Severity Level IV; Supplement)

Description of Violation (50-412/92-07-02)

Technical Specification 3.9.4 requires, that during core alterations, containment penetrations that provide direct access from the containment atmosphere to the outside atmosphere, other than for the containment purge and exhaust valves, be closed by an isolation valve, blind flange, or manual valve.

In addition to the above, spare containment penetrations 8D and 11E that provide direct access were not closed by a valve or blind flange during core alterations from March 23 to March 27, 1992, and spare containment penetration 11E was not closed by a valve or blind flange during core alterations from April 8 to 9, 1992. Specifically, the containment penetrations, which were opened so that temporary cabling could be run into the containment building (steam generator eddy current cables were run through penetration 8D, and video cables and a 480V power cable were run through penetration 11E), were not closed by an isolation valve, blind flange, or manual valve but were sealed with fire retardant fiber and tape.

Admission of the Alleged Violation

Duquesne Light Company admits to the violation as stated.

Reason for the Violation

A temporary seal was installed in the containment penetrations used to route temporary electrical cables. The procedure that was referenced and used for installing the temporary penetration seal did not adequately specify a seal which met the requirements for the differential pressure experienced in this application.

Corrective Action Taken

1. After discovery of the leaking electrical penetration, the control room was notified, and fuel movement was immediately halted once a fuel assembly in transit was placed in a safe position.
2. The temporary cabling was removed, and the penetration was permanently sealed and satisfactorily Type "B" leak tested.
3. The General Manager, Nuclear Operations issued a letter requiring all temporary seals used in wall/floor penetrations to be initiated through the Temporary Modification Program and evaluated by Engineering for adequate sealing method with a 50.59 evaluation performed. These requirements will remain in effect until the following Actions Taken to Prevent Recurrence are complete.
4. This event was reported to the NRC via a 10 CFR 50.72 four hour notification and subsequently reported in LER 92-005.

Actions Taken to Prevent Recurrence

1. A review of various Nuclear Group Administrative Procedures (NGAP) was performed to determine if the administrative control on penetration seals could be enhanced. Based on this review, a new administrative procedure will be issued to consolidate the administrative requirements and controls for all types of permanent and temporary penetration sea.
2. NGAP 3.5 "Fire Protection" will be revised to caution personnel that temporary fire seals may have functions/ratings in addition to fire (i.e., hydrostatic pressure, differential air pressure, radiation, and smoke and gas). In addition, the new administrative procedure (Item #1 above) will be referred to for the appropriate administrative controls for fire seals.
3. Plant Installation Process Standard (PIPS) M16.3, "Fire Stops and Seals" will be revised to provide specific guidance for temporary containment penetration seals used during Modes 5 and 6, and to change the title of PIPS M16.3 to "Penetration Seals" to more accurately reflect its actual scope.
4. Corrective Maintenance Procedure 2-CMP-75-SG-Cable Install-1E will be revised as needed to reflect the procedure changes discussed above.
5. A Technical Specification Change Request will be submitted to the NRC for BV-1 and BV-2 Technical Specification 3.9.4 to address the use of temporary containment penetration seals.

Date When Full Compliance will be Achieved

Full compliance is in effect at this time. The following actions will be completed prior to the next refueling outage at either unit:

1. The new administrative procedure on penetration seals will be issued by December 31, 1992.
2. NGAP 3.5 will be revised by December 31, 1992.
3. PIPS M16.3 will be revised by September 30, 1992.
4. 2-CMP-75-SG-Cable Install-1E will be revised by December 31, 1992.
5. The Technical Specification Change Request will be submitted to the NRC by November 30, 1992.