



## Duquesne Light

Nuclear Construction Division  
Robinson Plaza, Building 2, Suite 210  
Pittsburgh, PA 15205

2NRC-6-013

(412) 787-5141

(412) 923-1960

Telecopy (412) 787-2629  
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United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

ATTENTION: Dr. Thomas E. Murley  
Administrator

SUBJECT: Beaver Valley Power Station - Unit No. 2  
Docket No. 50-412  
Potential Significant Deficiency Report 86-01

Gentlemen:

This Potentially Reportable Significant Deficiency Report relating to improperly rated cables terminated in solenoid valves is being submitted pursuant to the requirements of 10CFR50.55(e). This is a final report. It is anticipated that no additional reports will be submitted.

DUQUESNE LIGHT COMPANY

By

*RE Martin for*  
J. J. Carey  
Vice President

GHO/wjs  
Attachment

cc: Mr. P. Tam, Project Manager (w/a)  
Mr. J. M. Taylor, Director (3) (w/a)  
Mr. G. Walton, NRC Resident Inspector (w/a)  
INPO Records Center (w/a)  
NRC Document Control Desk (w/a)

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BEAVER VALLEY POWER STATION - UNIT NO. 2  
DUQUESNE LIGHT COMPANY

Potential Significant Deficiency Report 86-01  
"Improperly Rated Cables Terminated in Solenoid Valves"

1. SUMMARY

Internal heat rise for solenoid valves under continuous use may exceed the temperature rating of field cables terminated within the solenoid housing.

2. IMMEDIATE ACTION TAKEN

Upon discovery of this concern, the BVPS-2 project initiated efforts to determine the extent of the problem and possible solutions. On January 21, 1986, Mr. S. D. Hall, Senior Compliance Engineer, DLC Regulatory Affairs Department, notified Mr. Dave Johnson, NRC Region I, of this potentially reportable deficiency in accordance with 10CFR50.55(e).

3. DESCRIPTION OF THE DEFICIENCY

Solenoid valves that are continuously energized, or energized for extended periods of time, have an internal temperature rise that may cause the temperature of field-run cable inside the solenoid valve housing to exceed the cable's thermal rating of 90°C. The valve manufacturer did not consider or address the potential for attaining high temperatures within the solenoid housings.

4. ANALYSIS OF SAFETY IMPLICATION

The field installed cables terminated at the solenoid valves do not have a temperature rating sufficient for all possible environmental conditions. A cable insulation breakdown caused by excessive temperatures could prevent safety-related valves from operating properly.

5. CORRECTIVE ACTION TO REMEDY DEFICIENCY

Stone & Webster Engineering Corporation has reviewed the following purchase orders involving solenoid valves: 2BV-001, 2BV-185, 2BV-651, 2BV-666A, 2BV-718, and 2BV-719. Only purchase order 2BV-719 (Target Rock Solenoids) is affected by this potentially deficient condition.

The Target Rock solenoid valves supplied under 2BVS-719 that are continuously energized or energized for extended periods of time will be rewired in the following manner with high temperature cable purchased under 2BV-326: (1) for cases where there is a junction box within 10 feet of the solenoid, high temperature cable will be rewired to the junction box; (2) for cases in which a junction box is not located in close proximity to the solenoid valve, a new junction box will be installed and high temperature cable will be installed to the new junction box.

The above corrective actions are further detailed in ACN-E-158, and will be completed in accordance with system turnover schedule requirements.

A review performed by the Westinghouse Electric Corporation determined that no solenoid valves purchased under the Westinghouse scope of supply are affected by the subject deficiencies.

6. ADDITIONAL REPORTS

This is the final report on the potential significant deficiency regarding improperly rated cable terminated in solenoid valves. It is anticipated that no additional reports will be submitted.