



## Duquesne Light

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March 25, 1985

United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

ATTENTION: Dr. Thomas E. Murley  
Administrator

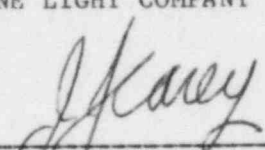
SUBJECT: Beaver Valley Power Station - Unit No. 2  
Docket No. 50-412  
Inadequately Torqued Bolts for Electrical Support Connections  
Potentially Significant Deficiency Report No. 85-01, Final Report

Gentlemen:

This Final Report is in reference to the potentially reportable Significant Deficiency relating to the "Inadequately Torqued Bolts for Electrical Support Connections." Pursuant to the requirements of 10CFR50.55(e), it is anticipated that a subsequent report on this matter will not be necessary.

DUQUESNE LIGHT COMPANY

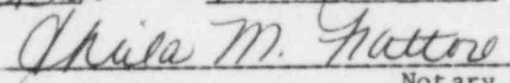
By

  
J. J. Carey  
Vice President

MAH/wjs  
Attachment

cc: Mr. R. DeYoung, Director (3) (w/a)  
Mr. B. K. Singh, Project Manager (w/a)  
Mr. G. Walton, NRC Resident Inspector (w/a)  
INPO Records Center (w/a)  
NRC Document Control Desk (w/a)

SUBSCRIBED AND SWORN TO BEFORE ME THIS  
25th DAY OF March, 1985.

  
Maria M. Fattore  
Notary Public

MARIA M. FATTORE, NOTARY PUBLIC  
SHIPPERSBURG, BEAVER COUNTY  
MY COMMISSION EXPIRES SEPT. 15, 1985  
Member, Pennsylvania Association of Notaries

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PDR ADOCK 05000412  
S PDR

COMMONWEALTH OF PENNSYLVANIA )  
 ) SS:  
COUNTY OF BEAVER )

On this 25th day of March, 1985, before me, a  
Notary Public in and for said Commonwealth and County, personally  
appeared J. J. Carey, who being duly sworn, deposed and said that (1)  
he is Vice President 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.

Sherla M. Fattore  
Notary Public

SHERLA M. FATTORE, NOTARY PUBLIC  
SHIPPINGPORT BORO, BEAVER COUNTY  
MY COMMISSION EXPIRES SEPT. 16, 1985  
Member, Pennsylvania Association of Notaries

BEAVER VALLEY POWER STATION UNIT NO. 2  
DUQUESNE LIGHT COMPANY

Potential Significant Deficiency Report No. 85-01  
"Inadequately Torqued Bolts for Electrical Support Connections"

1. SUMMARY

Bolts with spring nuts are used for electrical support connections at BVPS-2. These bolts have been installed "uptight," not to minimum torque values.

2. IMMEDIATE ACTION TAKEN

A sample of 50 bolts, one-half inch in diameter, were torque tested by Duquesne Light Company (DLC) Site Quality Control (SQC) using a calibrated torque wrench. Thirty percent of these installed bolts were found to be torqued to less than the manufacturer's and SWEC corporate guidelines of 50 ft-lbs, with a lowest value of 20 ft-lbs. Following the collection of these torque data, an analysis of the safety implications of this deficient condition was complete (refer to Section 4, ANALYSIS OF SAFETY IMPLICATIONS). On February 26, 1985, S. D. Hall, Acting Manager of Duquesne Light Company's (DLC) Regulatory Affairs Department, notified Lowell Tripp of NRC Region I Office of this potentially reportable deficiency.

3. DESCRIPTION OF DEFICIENCY

Bolts with spring nuts were installed by construction to an unspecified torque because applicable BVPS-2 engineering documents did not specify the minimum acceptable torque values recommended by the manufacturer and by SWEC corporate guidelines. A bolt torqued to less than these minimum requirements might not provide adequate load carrying capability parallel to the axis of the support channel.

4. ANALYSIS OF SAFETY IMPLICATIONS

The installation torque of bolts with spring nuts in cold-formed channel sections affects only one of the three degrees of freedom of the bolts, and the typical raceway structures using these bolts are supported in a redundant manner. These considerations and analysis of the data generated from the torque testing of the 50 installed bolts indicated it was unlikely that the deficient condition of inadequately torqued bolts for electrical support connections could have caused the failure of any electrical raceways under any applicable loading conditions. However, because the sample size of 50 bolts was small compared to the total number of spring nuts used for electrical support connections at BVPS-2, this determination was considered a preliminary conclusion pending the collection and analysis of additional installed torque data. These additional data were to be generated as part of the spring nut retorquing program that DLC was planning to initiate (refer to Section 5, CORRECTIVE ACTION TO REMEDY DEFICIENCY, for a description of this retorquing program).

Subsequent to the above preliminary conclusion, DLC determined that the content of the electrical support retorquing program would not include

the generation of "as found" torque data for bolts with spring nuts. Without these data, the completed torque tests of the 50 bolt samples are insufficient to support a statistical determination, with the required confidence level, that the subject deficient condition would not have resulted in the failure of an electrical raceway. Thus, DLC has concluded that, due mainly to the large number of spring nuts at BVPS-2 that were torqued to an unspecified value (approximately 130,000), the deficient condition of the inadequately torqued bolts for electrical support connections, if left uncorrected, could have adversely impacted the safe operations of the plant.

5. CORRECTIVE ACTION TO REMEDY DEFICIENCY

To correct the potential significant deficiency regarding inadequately torqued bolts for electrical support connections at BVPS-2, the following actions have been taken. Appropriate torque requirements for bolts with spring nuts have been issued via E&DCR 2PS-3207B, the electrical installation specification (2BVS-931) has been modified to incorporate these torque values, and a 100 percent retorquing program for existing Seismic Category I electrical support connections will be initiated and completed prior to fuel load. These corrective actions will ensure that BVPS-2 electrical support connections using bolts with spring nuts will be properly torqued, and electrical raceways will perform their intended safety functions.

6. ADDITIONAL REPORTS

This report regarding the potential significant deficiency of inadequately torqued bolts for electrical support connections is a final report. Any further correspondence regarding this matter will be issued as part of the activities for a related Unresolved NRC Inspection Item (UNR 84-16-03) and will be made available to the Senior Resident Inspector upon request.