Duquesne Light
435 Sixth Avenue
Pittsburgh, Pa.
15219

2DLC 4485

(412) 456-6000

FEB 25 1982

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


ATTENTION: Mr. R. Haynes, Administrator

SUBJECT: BEAVER VALLEY POWER STATION - UNIT NO. 2
Docket No. 50-412
Auxiliary Feedwater Pump
Impeller Wear Rings - Significant
Deficiency Report 81-04

Gentlemen:

This letter is Interim Report Number 2 concerning Significant Deficiency 81-04.

Our letter 2DLC-4402 dated December 18, 1981 indicated that a final report on this deficiency would be submitted by February 26, 1982; however, delays in the technical evaluation being performed by the pump manufacturer have forced the extension of this date to April 9, 1982. The attached Interim Report Number 2 provides a discussion of the status of the resolution of the problem.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

Attachment

cc: NRC Document Control Desk

Ms. E. Doolittle
Project Manager

Mr. G. Walton
NRC Resident Inspector



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S1/1

RMK-KAT/sjd

bcc: R. J. Washabaugh
H. A. VanWassen
T. D. Jones
D. H. Williams
E. J. Woolever
A. J. Zelesnak
J. J. Carey
R. J. Swiderski
H. P. Williams
F. Salmon
R. Coupland
C. R. Bishop
P. RaySircar
J. Pedro (NUS)
C. N. Dunn
C. E. Ewing
J. E. Walsh
R. M. Kight
BV-2 Licensing File (KAT)

References:

1) 2DLS-12952 dated 12/15/81 "Auxiliary Feed Pump Impeller Ring, 2BV-208, Cracking Potential Reportable Deficiency"

2) 2DLC-4402 dated 12/18/81 "Auxiliary Feedwater Pump Impeller Wear Rings Significant Deficiency Report 81-04"

3) 2DLS-13348 dated 2/05/82 "Auxiliary Feed Pump Impeller Ring, 2BV-208, Cracking Potential Reportable Deficiency"

# INTERIM REPORT #2
# OF
# AUXILIARY FEED PUMP IMPELLER RING CRACKING
# AT
# BEAVER VALLEY POWER STATION - UNIT NO. 2

## 1.0 SUMMARY

During a post test inspection of the Trubine Driven Auxiliary Feed Pump (2FWE-P22) (TDAFP) being perfomed at the Terry Turbine Corporation, on September 10, 1981, several cracked impeller wear rings were discovered. Should this condition also exist on the Motor Driven Auxiliary Feed Pumps (2FWE-P23A&B) (MDAFP) there is a potential for complete wear ring failure and loss of pump performance.

## 2.0 IMMEDIATE ACTION TAKEN

Upon discovery of the cracked impeller wear rings on the TDAFP, the entire pump/turbine assembly was returned to the Bingham Willamette Company (BWC) in Portland, Oregon, for a complete engineering assessment.

The BWC engineering assessment attributed the impeller wear ring cracking to the use of previously used rings when the impeller was replaced prior to the delivery of the pump. The additional stresses imposed on the rings by removal and re-installation are the probable cause of the cracking.

Because the MDAFP impellers were also replaced, it is possible that similar problems exist in these pumps. The rotating elements from the MDAP's were removed, visually inspected, and returned to the BWC for evaluation. No cracks were discovered in the visual inspection.

## 3.0 DESCRIPTION OF DEFICIENCY

Cracked impeller wear rings at the securing pin hole juncture on various impeller stages of the TDAFP have been evaluated by the BWC. Because of the similarity in construction of the TDAFP and the MDAFP's, it has been determined that there is a potential for impeller wear ring failure and loss of pump performance on these pumps also.

## 4.0 ANALYSIS OF SAFETY IMPLICATION

A reduction in auxiliary feed pump performance could result in reduction of residual heat removal capability.

## 5.0 CORRECTIVE ACTION TO REMEDY DEFICIENCY

The MDAFP wear rings have been removed and replaced with new wear rings. It is anticipated that this will correct the deficiency. However, the final determination of the cause of the problem and the final assessment of the adequacy of this solution will not be complete until the inspection report has been reviewed.

## 6.0 FINAL REPORT

A final report will be submitted by April 9, 1982.