Duquesne Light

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March 14, 1984

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

ATTENTION: Mr. Richard W. Starostecki
Division of Project and Resident Programs

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Supplement No. 2 to
USNRC IE Inspection Report No. 50-412/82-01

Gentlemen:

The purpose of this letter is to provide the Beaver Valley Power Station Unit No. 2 (BVPS-2) position and actions to be taken concerning Class 3 butt-welded valves and Class 3 pipe to fitting butt welds in relation to Reference 2. The weld surface profile requirements identified in response to Nuclear Regulatory Commission (NRC) Infraction Notice 82-01-01 (Reference 1) and, as stated in Reference 2, have been reviewed for implementation on existing welds.

As of February 1, 1984, the site review has identified 752 ASME III Class 3 pipe-to-fitting, fitting-to-valve, and pipe-to-valve welds requiring reinspection. Of these, 130 were inaccessible due to either their encased or buried location. The 622 accessible welds were inspected and 48 were judged to be unacceptable to the criteria outlined in Reference 2. A final review to assure that affected welds requiring reinspection are identified is being implemented. The results of this final review will be made available to the NRC Resident Inspector.

ASME III Class 1 and 2 butt welds were not inspected. The radiographic inspection requirements for these welds dictated a surface profile which would be free of this notch condition.

Typically, the unacceptable welds did not exhibit a visually discernible radius at the toe of the weld around the full circumference of the joint. On fittings, this is largely due to their having an eccentric as-formed outside-diameter surface with respect to the top of the weld end preparation. Since the weld metal normally would only fill the end preparation area, the weld reinforcement crown would blend into the higher-abutting and tapered surface for a portion of the joint. On valves, this condition is attributed to the welder's technique in completing the weld's cover pass. In both instances, the weld surface profile is considered to be acceptable to ASME III for as-welded conditions. In all instances, these welds have passed the Code-required MT or PT examinations.

The workmanship standards given in Reference 2 have been incorporated into the Field Fabrication and Erection of Piping Specification 2BVS-920. The following actions will be taken to address past weld surface profiles which do not meet the criteria outlined in Reference 2:

1. Class 3 butt-welded valves, all of which are accessible, which do not meet the new criteria will be reworked to meet the new specification requirements.

2. The Class 3 pipe-to-fitting butt welds are to be accepted as is.

In support of this assessment, the existing Class 3 piping design requires stress intensification factors to be applied at fittings but not at valves. The stress intensification factors required by ASME III ND/NC-3672 range typically between 1.3 and 4.5 for the Tee and Ell fittings, thus requiring the maximum allowable moment loadings to be reduced by the amount of the factor. The butt weld fittings being in close proximity to the stress intensified portion of the fitting results in lower stress levels at the butt welds as well. Since the fittings' eccentricity and excess base metal tend to increase with increasing diameter, along with the stress intensification factors, the currently required stress intensification factors for fittings also sufficiently offset potential weld surface conditions at their connecting butt welds. Existing calculations will verify this position.

DUQUESNE LIGHT COMPANY

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

SDH/wjs

cc: NRC Document Control Desk
Mr. G. Walton, NRC Resident Inspector
Ms. L. Lazo, Project Manager

REFERENCES: 1) NRC Letter Docket No. 50-412, dated April 5, 1982
2) 2DLC-04693, dated June 17, 1982

SUBSCRIBED AND SWORN TO BEFORE ME THIS
14th DAY OF March, 1984.

Anita Elaine Reiter
Notary Public

ANITA ELAINE REITER, NOTARY PUBLIC
ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1986

COMMONWEALTH OF PENNSYLVANIA )
) SS:
COUNTY OF ALLEGHENY )

On this 14th day of March, 1984, before me, a Notary Public in and for said Commonwealth and County, personally appeared E. J. Woolever, 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.

Anita Elaine Reiter
Notary Public

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ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1986