UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

JUN 0 2 1980

Docket No. 50-334

Duquesne Light Company
ATTN: Mr. C. N. Dunn
Vice President
Operations Division
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Gentlemen:

Subject: Inspection 50-334/78-29

This refers to unresolved item 334/78-29-02.

Steam generator weld 1-1, 2-1, 3-1 and pressurizer weld 7 were ultrasonically examined during a 1978 outage to satisfy the inservice inspection requirements of the ASME Code, Section XI, 1974 Edition including the Summer 1975 Addenda, 10 CFR 50.55a(g) and the facility technical specifications at the Beaver Valley Power Station, Unit 1.

An unresolved item concerning the above examinations was identified in IE Inspection No. 78-29 by the NRC inspector (see unresolved item 334/78-29-02) as follows:

> The base material adjacent to the above welds is SA 508 Class 2 (forged material) on one side and SA 216 Grade WCC (cast material) on the other side. The calibration blocks used to calibrate the instruments were SA 508 Class 2.
>
> The applicable Code, Section XI, paragraph I-3121 requires that: "When it is not possible to fabricate the block from material taken from the component, the block may be fabricated from a material of a specification included in the applicable examination volumes of the component. It is required that acoustic velocity and attenuation of such a block be demonstrated to fall within the range of straight beam longitudinal wave velocity and attenuation found in the unclad component."
>
> The blocks used for the weld examinations were not fabricated from material taken from the component, were of a different material specification than one side of the weld (i.e., SA 508 forging vs SA 216 casting), and acoustic velocity and attenuation has not been demonstrated.

It is known that a material's acoustic properties are influenced by its product form, composition and heat treatment. Consequently, the reference Distance Amplitude Curve (DAC) and the corresponding defect size based on response signal

amplitudes can vary significantly when the calibration block is not representative of the weldment being examined. This can result in nonconservatism in defect detection and size measurement.

For this reason, and because no material was available from the components, Amendment 22 to the Beaver Valley Unit 1 license was written with the provision that a calibration block be fabricated of the same specification, product form and heat treatment as the materials being joined. This would satisfy the intent of the Code that the calibration block and the material being examined should be acoustically similar.

As of April 17, 1980, a calibration block, as described above, has not been fabricated; therefore, a demonstration that the block used is acoustically similar to the material that was examined is desirable.

It is our conclusion that, unless better evidence is provided of the effectiveness of the ultrasonic examination done as a part of the inservice inspection program, that program cannot be considered to be adequate for the steam generator and pressurizer welds identified herein. Please review this concern and inform us of your position and intentions. Should you decide to accomplish a demonstration of acoustic similarity of the calibration blocks and the materials joined, please contact our office (L. Tripp, 215-337-5282) in advance so that we may witness the performance of that demonstration. If this is not accomplished, the Duquesne Light position should address the safety of continued operation prior to plant restart from the current outage.

Your cooperation with us is appreciated.

Sincerely,

Robert T. Carlson

Robert T. Carlson, Chief
Reactor Construction & Engineering
Support Branch

cc:
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