



Docket No. 50-412

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

JUN 03 1980

Duquesne Light Company
ATTN: Mr. E. J. Woolever
Vice President
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Gentlemen:

Subject: Cable Tray Galvanizing Deficiency (Your letter of May 1, 1980)

Thank you for your letter, referenced above, which forwarded a final report pursuant to 10 CFR 50.55(e) regarding the subject matter.

This matter will be reviewed during a subsequent inspection.

Your cooperation with us is appreciated.

Sincerely,

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

cc:
R. J. Washabaugh, Quality Assurance Manager

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Duquesne Light

435 Sixth Avenue
Pittsburgh, Pa.
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(412) 456-6000

May 1, 1980

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

Attention: Mr. Boyce H. Grier
Director

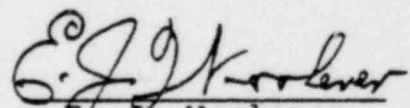
Subject: Beaver Valley Power Station - Unit No. 2
Final Report - Cable Tray Galvanizing Deficiency
Docket No. 50-412
Significant Deficiency Report No. 80-01

Gentlemen:

Enclosed, herewith, is the final report showing the results of our investigation of the T. J. Cope Company Quality Control Inspection Program of Galvanized Cable Trays. This final report is in reference to the potentially reportable deficiency in cable tray galvanizing under the provisions of 10CFR50.55 (e) (1) (i) reported to the Nuclear Regulatory Commission by H. A. VanWassen of the Duquesne Light Company on February 7, 1980. An interim report was subsequently sent to the Nuclear Regulatory Commission by the Duquesne Light Company on March 10, 1980.

Duquesne Light Company will continue to inspect all tray before installation, and those already installed. In addition, Duquesne Light Company vendor surveillance group will inspect all tray until confidence is restored in the vendor's inspection program.

DUQUESNE LIGHT COMPANY

By 
E. J. Woolever
Vice President

Enclosure

cc: Messrs. V. Stello (15)
W. G. McDonald

Dupe 8005060245

FINAL REPORT ON CABLE TRAY GALVANIZING DEFICIENCY
AT BEAVER VALLEY POWER STATION - UNIT NO. 2

1. SUMMARY

A number of sharp projections in the cable bearing area of hot dip galvanized safety-related cable tray have been found. These projections are a result of runs and imperfections in the hot dip galvanizing which solidified to form spikes and sharp edges. The cable tray vendor did not adequately inspect and correct cable tray after galvanizing as required by the purchase specification.

2. IMMEDIATE ACTION TAKEN

All uninstalled trays on site are being inspected for galvanizing projections prior to installation. If projections are found, they are filed smooth. Tray remaining to be shipped is being thoroughly inspected by the Duquesne Light Company inspectors to ensure no projections exist. An audit of the Vendor's quality control program is being performed to determine effectiveness.

The Nuclear Regulatory Commission (NRC) was informed that the tray galvanizing was potentially reportable under the provisions of 10CFR50.55(e)(1)(i) on February 7, 1980 by Mr. H. A. VanWassen of Duquesne Light Company (DLC). AN interim report was subsequently sent to the NRC by DLC on March 10, 1980 (significant deficiency Report No. 80-01).

3. DEFICIENCY

Duquesne Light Company inspectors had, over a period of time, found numerous unacceptable pieces of tray which the cable tray vendor had presented for final inspection. As a result, the inspectors issued a Nonconformance and Disposition Report identifying the vendor as not adequately inspecting the cable tray. Inspection of the tray on site was performed and similar deficiencies were found.

4. ANALYSIS OF SAFETY IMPLICATIONS

A. Galvanizing deficiencies (sharp projections) within the cable bearing area of the cable tray may damage the cable in two ways:

- (1) Tearing cable jacket and insulation during installation of cable.
- (2) Penetrating the cable jacket and insulation sometime during the life of the plant.

Dupe 5 800 5060250

B. We have reviewed each of the above as follows:

(1) Effect of damaging cable during installation:

A test was conducted to determine the effect of pulling cable over the sharp projections. Test specimens selected were cables which represent the thinnest jacketed cable purchased and the tray with the worst projections selected from a sample inspection of Category I cable tray. The cable was dragged over the projections in a manner to create considerable downward force. The results showed that if a projection was sharp at the beginning of a pull it became dull shortly after and that no significant damage to the jacket occurred for the samples tested. The variation of projections encountered, however, precludes the use of sample testing techniques to demonstrate acceptability for all possible cases. The results were, therefore, determined to be inconclusive.

(2) Effect of cable resting on a sharp projection during the plant life:

To simulate this condition effectively would be impractical. Some of the parameters that must be evaluated include the weight on the cable, cable aging, temperature of cable, size and configuration of projections and time. We cannot with any degree of certainty state that none of the projections of many different sizes and shapes found in Category I trays would penetrate through the cable during the plant life. Sharp projections have been found that measure in height equal to or greater than combined cable jacket and insulation thickness.

(3) If a protrusion were to penetrate the cable insulation and jacket, a circuit ground of short circuit could result which might not be detectable. This, in conjunction with a single failure on the redundant equipment, could result in an unavailability of both safety systems.

Based on the above we conclude that a potential safety hazard would be possible had this deficiency gone unnoticed.

5. CORRECTIVE ACTION TO REMEDY DEFICIENCY

Immediate action of inspecting tray before installation will be continued until all tray is installed. Duquesne inspectors will thoroughly inspect all tray until confidence in the vendor's inspection program has been developed. All installed safety related tray will be inspected and deficiencies will be corrected or tray replaced before cable is pulled, thus eliminating any safety hazard associated with this deficiency.