METROPOLITAN EDISON COMPANY SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603 TELEPHONE 215 – 929-3601

January 31, 1973

Mr. J. P. O'Reilly, Director
Directorate of Regulatory Operations
Region I
United States Atomic Energy Commission
970 Broad Street
Newark, New Jersey 07102

1583 227

SUBJECT: THREE MILE ISLAND NUCLEAR STATION
UNITS 1 AND 2
DOCKET NOS. 50-289 AND 50-320
RESPONSE TO AEC/DRO AUDIT OF AUGUST 14 THROUGH 17, 1972

Dear Mr. O'Reilly:

Our letter dated November 3, 1972 described the actions being taken to resolve the findings reported in AEC/DRO letter of October 6, 1972, based on an AEC/DRO audit of Three Mile Island construction site. We advised you in our letter dated December 14, 1972, that we would be completing our technical evaluation of two items regarding Grinnell pipe welds in January 1973. One item concerned low ferrite content in certain stainless steel welds. The second item concerned excessive weld weaves. The following is our response to these two items:

1. Ferrite Content of Weld Deposits

AEC/DRO Letter dated October 6, 1972 indicated in Item 3b of Enclosure 1 that Grinnel test reported for E 308 electrode, Heat #9H63B, had a ferrite content less than 5 percent.

The approved Grinnell Material Specification requires 5 percent minimum ferrite. To determine the extent of noncompliance with this 5 percent minimum ferrite requirement, a complete review of all electrodes used by Grinnell has been made. The following heats of E 308 electrodes have been identified as having less than 5 percent ferrite (this updates the information in one letter dated November 3, 1972):

Wire Heat	ARCO'S (Manufacturer) Weld Pad Test % Ferrite	GRINNELL CO. (Fabricator) Measured By Magnegage % Ferrite	GRINNELL CO. (Fabricator) Calculated from Schaffler Diagram % Ferrite
9 H 63 B	4.8	*	6
9 N 10 A	4.5	*	5
9 J 22 B	4.1	5	3
9 F 1 A	4.4	3	4

7911080 595

* This measurement was not reported; but, based on the relationship between measurement given on the other weld heats in this table, it is reasonable to assume that a magnegage measurement would have resulted in a ferrite content higher than 3 percent.

All of the above heats have ferrite contents of 3 percent or more. Our Architect-Engineer (GAI) has performed a review of available literature, including reports to the AEC made regarding investigations of low ferrite content welds at other nuclear plants, and consider that 3 percent minimum ferrite is satisfactory to protect against unacceptable microfissuring. Accordingly, we consider no further action to be necessary regarding the heats of electrodes in question.

2. Weld Bead Width of a Stainless Steel Weld

AEC/DRO letter dated October 6, 1972 identified, in Item 19 of Enclosure 2, that welds in spool CF-1 showed shop welds with excessive weld weaves.

Our review of this problem confirms that weld weaves for the subject spool did exceed the pipe supplier (Grinnell) weld weave limit of four times the electrode diameter. However, the pipe supplier has stated that the wide weld weaving technique is limited to the outer surface pass. The inner passes have been stated to be of the stringer bead technique.

Our engineering evaluation of this situation indicates that wide weld weaves on the outside surface would be technically acceptable, since any sensitization due to excessive heat input during the wide weaving would be limited to the outside surface.

Since the outside surface is kept dry during service, any sensitization, if present, would not be a concern.

In order to confirm that wide weld weaving was only used on outside passes, we are having a boat sample removed from a weld with wide weaves. This boat sample will be metallurgically examined to verify the welding technique used.

The results of this metallurgical investigation will be kept on file at the Three Mile Island site and will be available for your review.

Very truly yours,

J. G. Miller
Vice President

mw
Enclosures