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Norman W. Curtis
Vice President-Engineering & Construction-Nuclear
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MAR 16 1984

Dr. Thomas E. Murley
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION
IE BULLETIN 83-07 RESPONSE
ER 100450, 100508 FILE 842-03 Docket Nos. 50-387
PLA-2130 50-388

Dear Dr. Murley:

This letter is PP&L's complete response to IE Bulletin 83-07 "Apparently Fraudulent Products Sold by Ray Miller, Inc." and its two supplements.

Our review to address the concerns raised in the bulletin was carried out as follows:

(1) The review was conducted by three different organizations for their respective areas.

a) GE for NSSS systems

b) Bechtel for BOP equipment

c) PP&L Procurement for equipment purchased for replacements, spare parts, etc.

(2) The investigation by these groups encompassed the years 1974 to date for all direct or indirect purchases from Ray Miller Inc.

(3) All Susquehanna Project purchase orders for the above period were reviewed to determine if Ray Miller or any of the purchasers listed in Tables 1 and 2 of the bulletin were suppliers to Susquehanna. The two supplements to the bulletin were also reviewed.

(4) Engineered equipment (e.g. skid mounted equipment) vendors for the Susquehanna Project were contacted to determine whether they or their sub-tier vendors had purchases with Ray Miller or one of the purchasers listed in Tables 1 and 2 of the bulletin. The two supplements were included in this review.

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(5) GE and Bechtel checked material transferred to Susquehanna from other projects to determine whether it was purchased from Ray Miller or one of the purchasers in Table 1 & 2 of the bulletin or the bulletin's supplements.

The results of our investigations are as follows:

(1) No Ray Miller, Inc. material was found installed at Susquehanna Unit 1 or Unit 2.

(2) Ray Miller, Inc. material was supplied for use at Susquehanna. This material was supplied by Ray Miller, Inc. to Nuclear Energy Services, Inc. (NES). NES supplied ultrasonic calibration blocks to Susquehanna which were fabricated from the Ray Miller material. Attachment 1 provides further information on this material and on the examinations performed on the material. Attachment 2 provides the examination results.

Three discrepancies were identified as a result of the material examinations. These discrepancies were found to be acceptable and the material was dispositioned as appropriate for its intended use. Further information regarding these discrepancies is included in Attachment 3.

(3) No other Ray Miller material has been identified at this time on Susquehanna Units 1 and 2. The NSSS and PP&L Procurement searches are complete. The BOP search involved a poll by Bechtel of 455 material suppliers. Of those polled, 319 have replied. Of the remaining 136 suppliers which did not respond, Bechtel's review of purchase orders for Susquehanna from these suppliers revealed that there is little likelihood that deficient products furnished by Ray Miller would have ended up in Q-listed applications without discovery.

Attachment 4 provides manhour estimates for this bulletin. This letter completes our response to IE Bulletin 83-07.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

Attachment 1: Material Examination Information
Attachment 2: Test Results
Attachment 3: Discrepancy Dispositions
Attachment 4: Manhour Estimates

Copy to:
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(with original letter and attachments)

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA)
: SS
COUNTY OF LEHIGH)

I, NORMAN W. CURTIS, being duly sworn according to law, state that I am Vice President, Engineering & Construction-Nuclear of Pennsylvania Power & Light Company and that the facts set forth on the attached response by Applicants to IE Bulletin 83-07 and its two supplements are true and correct to the best of my knowledge, information and belief.

N W Curtis

Norman W. Curtis
Vice President,
Engineering & Construction-Nuclear

Sworn to and subscribed
before me this 16th day
of March, 1984.

Martha C. Barto

Notary Public

MARTHA C. BARTO, Notary Public
Allentown, Lehigh County, Pa.
My Commission Expires Jan. 13, 1986

jlt/msc2003681

ATTACHMENT 1
MATERIAL EXAMINATION INFORMATION

Sample No.	PO No.[1]	Date	Description	Quantity Tested	Tests & Examinations Performed
1.	26194	7/22/80	t = 1.218" 24" Sch. 80 Pipe SA-358	3, 4a	5, 6
2.	25919	4/30/80	t = 1.125" (start) 28" Pipe A240 Type 304	3, 4a	5, 6
3.	"	"	t = 1.125" (start) 22" Pipe A240 Type 304	3, 4a	5, 6
4.	"	"	t = 1.375" (start) 28" Pipe A240 Type 304	3, 4b	5, 6
5.	28100	10/16/81	t = .730 12" Pipe SA182-F304	3, 4d	5, 6
6.	"	"	t = .880 12" Pipe SA182-F316	3, 4c	5, 6
7.	"	"	t = .750 10" Pipe SA182-F304L	3, 4d	5, 6
8.	"	"	t = .300 3" Sch. 80 Pipe SA-312-304L	2	2
9.	"	"	t = 2.55 28" Pipe SA240 Typ 304	3, 4e	5, 6, 7
10.	28037	10/1/81	t = .718 6" Sch 160 Pipe SA182 TyF316	3, 4f	5, 6
11.	"	"	t = .438 4" Sch 120 Pipe SA312 Ty304L	3, 4g	5, 6, 7

Notes: (see next page)

ATTACHMENT 1 (continued)

Notes

1. All material supplied by Ray Miller, Inc. West Caldwell, NJ office.

2. Not tested. Material was not used for calibration blocks.

3. For the chemical analyses, a sample 1 inch square and as thick as the thickness of the pipe was used.

4. For the mechanical analyses, the following sample sizes were used (2 samples were cut from each material, the 5 inch dimension is in the longitudinal direction):

   a. 1-1/8 X 1-1/8 x 5 inches
   b. 1-1/4 X 1-1/4 X 5 inches
   c. 7/8 X 7/8 X 5 inches
   d. 3/4 X 3/4 X 5 inches
   e. 1 X 1 X 5 inches
   f. 23/32 X 23/32 X 5 inches
   g. .44 X .44 X 5 inches

5. Chemical Analysis. A quantitative analysis was done for the percentage of the following elements:

   a. Carbon
   b. Nickel
   c. Chromium
   d. Sulfur
   e. Molybdenum
   f. Phosphorus
   g. Manganese
   h. Silicon

6. Mechanical Analysis. Testing was done to ascertain the following information:

   a. Tensile Strength
   b. Yield Strength (0.2% offset)
   c. Percent Reduction in Area
   d. Percent Elongation
   e. Hardness

7. Confirmatory examinations were done on two samples. Specifically, carbon content of Sample No. 11 and the hardness for Sample No. 9 were re-analyzed.

ATTACHMENT 2
TEST RESULTS

TABLE I
Chemical Analyses (weight percent)

Sample No.	C	S	Si	Mn	Cr	Ni	Mo	P
1	.05	.010	.67	1.80	18.29	8.73	.16	.022
2	.05	.006	.60	1.70	18.26	10.26	.34	.021
3	.05	.006	.60	1.72	18.12	10.43	.33	.021
4	.05	.010	.43	1.70	18.68	8.80	.33	.019
5	.07	.006	.46	1.45	18.31	8.53	.41	.022
6	.07	.012	.42	1.70	16.55	11.35	2.30	.027
7*	.04	.006	.57	1.75	18.68	8.55	.26	.018
8	--- Not Tested ---							
9	.04	.006	.44	1.70	19.62	8.73	.36	.023
10	.05	.021	.40	1.57	17.65	13.60	2.24	.025
11*	.05	.006	.33	1.64	18.50	10.36	.37	.017

*High carbon content

TABLE 2
Mechanical Analyses

Sample No.	YS (KSI)	TS (KSI)	EL (% in 2")	RA (%)	Hardness R_B
1	41.5	90.0	78.0	75.0	81
2	38.9	80.3	69.0	75.0	79
3	35.1	82.2	80.0	77.0	78
4	35.9	89.4	60.0	79.0	79
5	45.8	86.0	60.0	77.0	84
6	51.4	83.9	59.0	60.0	82
7	42.8	82.1	79.0	78.0	79
8	--- Not Tested ---				
9*	62.9	94.2	62.5	70.0	93
10	52.3	90.4	76.0	70.0	92
11	28.5	80.3	69.0	83.0	69

*High hardness

ATTACHMENT 3
DISCREPANCY DISPOSITIONS

A review of the examination results showed some small deviations in chemistry and mechanical properties which had to be repeated to assure ourselves that the data was correct. The only mechanical property which was beyond the specified limit was the R_B hardness value of 93 on Sample 9 which should have been 88 (Max.). Extra hardness readings were taken on specimens of this material which gave an average reading of 92.4 and a range of 90 to 94.5 out of 8 readings.

Two carbon contents were found to be higher than what the ASME specifications allow. Sample 7 analyzed 0.04% carbon, whereas SA182F304L calls for a maximum value of 0.035%. Sample 11 analyzed 0.05% carbon where the maximum allowed is 0.03% in SA312-304L. Four subsequent analysis were performed on this latter material with the following results: 0.045, 0.050, 0.046 and 0.045% with an average of 0.0465%. For both of these calibration block materials the material certs showed carbon levels within their respective tolerances; 0.029% C for Sample 7 and 0.027% C for Sample 11.

To address the acceptability of these calibration blocks for use at SSES we reviewed the requirements of Section XI of the ASME B & PV code and the Winter 1975 Addenda to which these blocks were constructed. Appendix III Article III 3400 addresses the "Basic Calibration Blocks" and III 3410 specifies the material requirements. In there it states that, "The calibration blocks shall be fabricated from one of the materials specified for the piping being joined by the weld" with a footnote stating, "If material of the same specification is not available, material of a similar chemical analysis, tensile properties and metallurgical structure may be used".

The three calibration blocks in question were the required basic chemical composition and had the specified tensile properties. Metallurgical structure is not a requirement in any of the specifications for 304 or 304L material and therefore need not be addressed to disposition the acceptability issue for these calibration blocks.

Based on our findings, the 10 calibration blocks fabricated from material supplied by Ray Miller are acceptable from a materials standpoint for the intended use per the requirements of the applicable ASME B&PV codes for Susquehanna.

ATTACHMENT 4
MANHOUR ESTIMATES

1. Utility Staff Time to Perform Requested Inspections and Evaluations: 400 (including Bechtel and GE manhours).

2. Utility Staff Time Spent to Prepare Requested Documentation: 100 manhours.