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SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards updated info on GDC 51 for use in evaluating util response to SER Open Item 66 re containment fracture toughness. Feedwater swing check valve disk certified test rept & LPCI & HPCI line evaluations expected by 841121.

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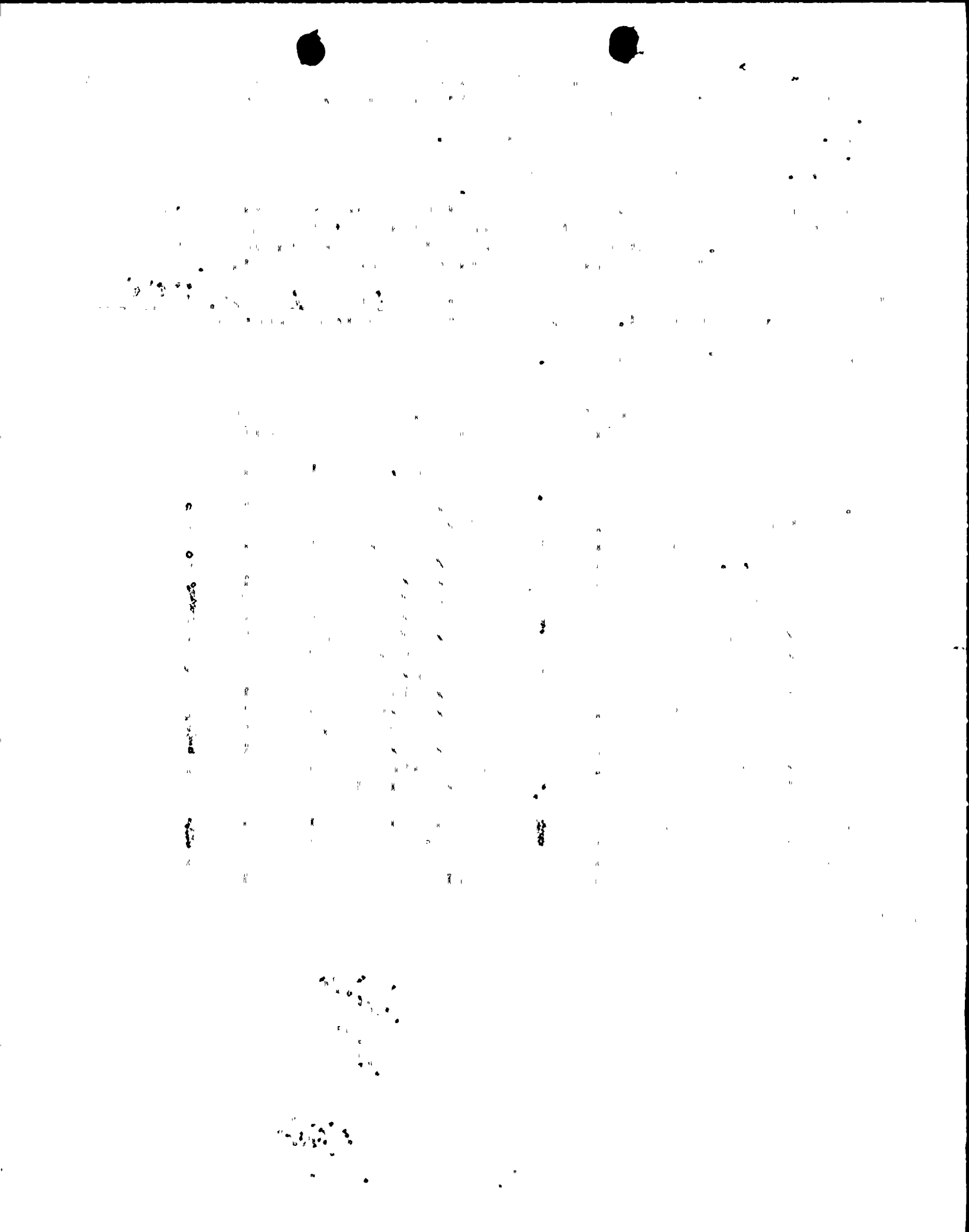

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

November 2, 1984
(NMP2L 0224)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Schwencer:

Re: Nine Mile Point Unit 2
Docket No. 50-410

Enclosed is updated information relating to General Design Criterion 51 of 10 CFR Part 50. This information was requested by Mr. Halapatz, of your staff, for his use in evaluating the containment fracture toughness for Nine Mile Point Unit 2, which is Safety Evaluation Report Open Item 66.

Three items are not included which are still under evaluation. The feedwater swing check valve disk certified test report is under evaluation. Information was delayed due to a vendor plant shutdown. The Low Pressure Coolant Injection and High Pressure Coolant Injection line evaluations are ongoing pending information from General Electric. This information will be provided to the staff by November 21, 1984.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

DS:ja
Enclosure
cc: R. Gramm, NRC Resident Insepctor

Project File (2)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
Niagara Mohawk Power Corporation	)	Docket No. 50-410
(Nine Mile Point Unit 2)	)	

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C V Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 2nd day of November 1984.

Christine Austin
Notary Public in and for
Onondaga County, New York

My Commission expires:

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 1985

Enclosure

Compliance of the primary containment pressure boundary materials with General Design Criteria (GDC) 51 was evaluated by identifying the materials which were limiting under operation, maintenance, test and postulated accident conditions based on material type, thickness and metallurgical characterization. The fracture toughness of these materials was evaluated on the basis of ASME III NC-2300, 1977 Edition including the summer 1977 addendum and NUREG 0577, Potential for Low Fracture Toughness and Lamellar Tearing on PWR Steam Generator and Reactor Coolant Pump Supports, October 1979.

The limiting materials were found to have a permissible lowest service metal temperature (PLSMT) at or below the design lowest service metal temperature of +70°F. In the case of the feedwater system (FWS) and reactor water cleanup system (WCS), there are situations where the actual metal temperature may be less than +70°F. However, these situations are during startup from the cold shutdown condition, where the loads are very low and the probability of rapidly propagating fracture, as referenced in GDC 51, is minimal. The FWS and WCS are above +70°F for all conditions where the pressure exceeds 660 psi.

In the following discussion, the fracture toughness of each of the specific limiting materials is evaluated in detail. This information also is presented in summary form in Table 1.

1. Equipment Hatch

   SA516 Grade 70 quenched and tempered material with a nominal thickness of 4.875 in. was applied for the equipment hatch cover flange. Actual drop weight tests performed on this material indicate a nil ductility transition temperature (TNDT) of -10°F or less. Thus, the permitted lowest service metal temperature (PLSMT) is +45°F when the rules of ASME III NC-2300, 1977 Edition, including the summer 1977 addendum, are applied.

2. Drywell Head Pins

   SA564 Grade 630, H1075 material with a nominal diameter of 3.25 in. was applied for the drywell head pins. The heat of material used had a relatively high nickel content (4.42 percent) and was age hardened at a

relatively high temperature (1,075°F minimum). An estimated PLSMT of +70°F for this material is derived from Armco data on H1100 material. Armco report A.I. 71.6-16, Report No. 1, June 11, 1969, shows Charpy transition curves for relatively high nickel heats where the curve midheight temperatures are at or below +5°F. This is consistent with a PLSMT of +70°F.

a. Z-1A sleeve. SA155 Grade CMSH80 applying SA537 Class 2, quenched and tempered and the finished pipe normalized and tempered, with a nominal wall thickness of 1.5 in. was applied for the penetration Z-1A sleeve. Due to its similarity to SA516 Grade 65 (SA155 Grade KCF65) with respect to melting practice, chemistry and heat treatment, ASME III NC-2300, 1977 Edition, including the summer 1977 addendum, would assign a TNDT of 0°F and a PLSMT of +30°F.

b. Z-11 sleeve. SA333 Grade 6 normalized with a nominal wall thickness of 1 in. was applied for the penetration Z-11 sleeve. NUREG 0577, in a "worst case" characterization of this material as a "mild" steel, indicates a TNDT at or below the NDT of +40°F. Based on a TNDT of +40°F, ASME III NC-2300, 1977 edition, including the summary 1977 addendum, assigns a PLSMT of +70°F.

c. Z-1A flued head. SA508 Class 1 quenched and tempered with a nominal web thickness of 6 in. was applied for the penetration Z-1A flued head. Actual drop weight tests performed on this material indicate a TNDT of 0°F or lower. Thus, the PLSMT is +62°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

d. Z-4A flued head. SA508 Class 2 quenched and tempered with a design web thickness of 6.16 in. was applied for the penetration Z-4A flued head. Actual drop weight tests performed on this material indicate a TNDT of 0°F or lower. Thus, the PLSMT is +62°F when the rules of ASME III NC-2300, 1977 edition, including the summar 1977 addendum, are applied.

4. Pipe

a. MSS pipe (mmark no. NM-1-85). SA106 Grade C normalized with a manufactured minimum wall thickness of 1.177 in. (by Cameron Iron Works) was applied for the main steam piping. NUREG 0577 indicates a TNDT for this material at or below the mean nil ductility transition temperature (NDT) of +40°F for mild carbon steel. Based on a TNDT of +40°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +70°F.

b. MSS sockolet (26" x 3/4" x 6000#). SA105 as forged with a design thickness of 0.156 in. was applied for the main steam sockolet. Although this material has a design thickness of less than 0.625 ins., the philosophy of NC-2300 can still be applied.

NUREG 0577 categorizes this material as an as-hot rolled carbon manganese steel and assigns it a TNDT of +39°F. Thus, the PLSMT is +69°F when the "worst case" rules for 5/8 inch thick material of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

c. FWS pipe and WCS pipe (mark nos. NM-47-112, NM-47-113, NM-09-142 and NM-09-144). SA106 Grade B normalized with a nominal wall thickness of 0.906 in. and SA106 Grade C normalized with a nominal wall thickness of 2.062 in. were applied for the feedwater piping. NUREG 0577 indicates a TNDT for this material at or below the NDT of +40°F for mild carbon steel. Based on a TNDT of +40°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +70°F.

d. WCS pipe (mark nos. NM-09-98, NM-09-143, NM-09-145 and NM-09-146). SA333 Grade 6 normalized with a nominal wall thickness of 0.906 in. was applied for the reactor water cleanup piping. NUREG 0577, in a "worst case" characterization of this material as a "mild" steel indicates a TNDT at or below the NDT of +40°F. Based on a TNDT of +40°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +70°F.

e. WCS sockolet (mark no. NM-09-143). SA105 with a design thickness of 0.092 in. was applied for the reactor water cleanup sockolet. Although this material has a design thickness of less than 0.625 in., the philosophy of NC-2300 can still be applied. NUREG 0577 categorizes this material as an as-hot rolled carbon-manganese steel and assigns it a TNDT of +39°F. Thus, the PLSMT is +69°F when the "worst case" rules for 5/8 inch thick material of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

f. WCS elbows (mark nos. NM-09-98, NM-09-142, NM-09-143, NM-09-144, NM-09-145 and NM-09-146). SA234 Grade WPB fabricated from SA106 and the final fitting normalized, with a nominal thickness of 0.906 in., was applied for the reactor water cleanup elbows. NUREG 0577 indicates a TNDT for normalized SA106 at or below the NDT of +40°F for mild carbon steel. Based on a TNDT of +40°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +70°F.

5. Feedwater Thermal Tees (2FWS*FTG1A)

a. Flued head. SA350 Grade LF2 normalized with a manufactured minimum web thickness of 1.804 in. was applied for the feedwater thermal tee flued head. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

b. Extruded outlet fitting. SA420 Grade WPL6, fabricated from SA350 Grade LF2, normalized with a manufactured minimum web thickness of 2.625 in. was applied for the feedwater thermal tee extruded outlet fitting. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +28°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

c. Thermal sleeve. SA350 grade LF2 normalized with a manufactured minimum wall thickness of 0.793 in. was applied for the feedwater thermal tee thermal sleeve. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

d. Reducer. SA350 Grade LF2 normalized with a manufactured minimum wall thickness of 1.804 in. was applied for the feedwater thermal tee reducer. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

e. Thermal sleeve run. SA516 Grade 70 normalized, cold formed into pipe and stress relieved, with a nominal thickness of 0.375 in. was applied for the feedwater thermal tee thermal sleeve run. Although this material is less than 5/8 inch thick, the philosophy of NC-2300 can still be applied. ASME III NC-2300, 1977 edition, including the summer 1977 addendum assigns a TNDT of 0°F to normalized SA516 Grade 70. According to the discussion on "Effects of Cold Work" in Welding Research Council Bulletin Number 158, January 1971, when this type of material is cold worked 1% and then stress relieved, it completely regains its fracture toughness; when it is cold worked 5% and then stress relieved, its transition curve midheight temperature increases 20°F. As the material for the thermal sleeve run was strained just under 2%, a conservative assumption of a 20° increase in TNDT can be made. Based on a TNDT of 0° + 20°, or 20°F, the PSLMT is +50°F when the "worst case" rules for 5/8 inch thick material of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

6. Main Steam Isolation Valve (2MSS*HYV7A)

a. Body. SA350 Grade LF2 quenched and tempered with a minimum design wall thickness of 2.55 in. was applied for the main steam isolation valve body. NUREG 0577 indicates a TNDT for quenched and tempered SA350 Grade LF2 at or below the NDT of -28°F for normalized carbon

manganese steel. Based on a TNDT of -28°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +2°F.

b. Bonnet. SA350 Grade LF2 quenched and tempered with a minimum design thickness of 4.94 in. was applied for the main steam isolation valve bonnet. NUREG 0577 indicates a TNDT for quenched and tempered SA350 Grade LF2 at or below the NDT of -28°F for normalized carbon manganese steel. Based on a TNDT of -28°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +27°F.

c. Ball. SA351 Grade CF8M was applied for the main steam isolation valve ball. This is an austenitic stainless steel material which is exempt.

d. Bolting. The main steam isolation valve bolting is not pressure retaining.

7. Feedwater Isolation Valve (2FWS*MOV21A)

a. Body. SA105 quenched and tempered with a manufactured minimum wall thickness of 2.28 in. was applied for the feedwater isolation valve body. NUREG 0577 indicates a TNDT for quenched and tempered SA105 at or below the NDT of -28°F for normalized carbon manganese steel. Based on a TNDT of -28°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +2°F.

b. Bonnet. SA105 normalized with a manufactured minimum thickness of 2.47 in. was applied for the feedwater isolation valve bonnet. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

c. Wedge. SA105 normalized with a design thickness of 1.7128 in. was applied for the feedwater isolation valve wedge. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

d. Bolting. The feedwater isolation valve bolting is not pressure retaining.

e. Thrust ring. SA182 Grade F6 with a design thickness of 1.000 in. was applied for the feedwater isolation valve thrust ring. This material was tempered at a relatively high temperature of 1400°F, which serves to enhance its fracture toughness. An estimated PLSMT of +70°F for this material is derived from Republic Steel data, Universal-Cyclops Steel data and other data in the literature that exhibit very good toughness properties after tempering at 1400°F. In addition, the thrust ring is loaded in compression and shear only, which minimizes the possibility of crack propagation.

8. Feedwater Swing Check Valve (2FWS*AOV23A)

a. Body. SA216 Grade WCB normalized with a manufactured minimum wall thickness of 2.28 in. was applied for the feedwater swing check valve body. NUREG 0577 indicates a TNDT for normalized SA216 Grade WCB at or below the NDT of +35°F for heat-treated cast steels. Based on a TNDT of +35°F, ASME III NC-2300, 1977 edition, including the summer 1977 addendum, assigns a PLSMT of +65°F.

b. Bonnet. SA105 normalized with an actual thickness of 4.498 in. was applied for the feedwater swing check valve bonnet. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +50°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

c. Disk. SA105 normalized with a manufactured minimum thickness of 2.28 in. was applied for the feedwater swing check valve disk. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

d. Bolting. SA193 Grade B7 and SA194 Grade 2H, both quenched and tempered, with a nominal diameter of 0.625 in. were applied for the feedwater swing check valve bolting. This material is categorized by NUREG 0577 as having least susceptibility to brittle failure.

9. Reactor Water Cleanup Isolation Valve (2WCS*MOV200)

a. Body. SA105 normalized with a design thickness of 0.880 in. was applied for the reactor water cleanup isolation valve body. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

b. Bonnet. SA105 normalized with a design thickness of 0.875 in. was applied for the reactor water cleanup isolation valve bonnet. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

c. Disk. SA105 normalized with a design thickness of 2.25 in. was applied for the reactor water cleanup isolation valve disk. NUREG 0577 categorizes this material as a normalized carbon manganese steel and assigns it a TNDT of -5°F. Thus, the PLSMT is +25°F when the rules of ASME III NC-2300, 1977 edition, including the summer 1977 addendum, are applied.

d. Bolting. The reactor water cleanup isolation valve bolting is not pressure retaining.

e. Thrust ring. SA182 Grade 6 with a design thickness of 1.253 in. was applied for the reactor water cleanup isolation valve thrust ring. This material was tempered at a relatively high temperature of 1400°F, which serves to enhance its fracture toughness. An estimated PLSMT of +70°F for this material is derived from Republic Steel data, Universal-Cyclops Steel data and other data in the literature that exhibit very good toughness properties after tempering at 1400°F. In addition, the thrust ring is loaded in compression and shear only, which minimizes the possibility of crack propagation.

TABLE 1

GDC 51 COMPLIANCE REVIEW

Nine Mile Point Nuclear Station - Unit 2

Item	Material	Thickness (Note 1)	Permissible Lowest Service Metal Temperature (PLSMT) (°F) and Basis	Lowest Service Metal Temp. (LSMT) (°F) (Note 2)	Remarks
Equipment Hatch Cover Flange	SA516-70 Quenched and tempered	4 7/8 in. (n)	+45 - Based on drop weight test (DWT) indicating a nil ductility transition temperature (TNDT) of -10	+70	
Drywell Head Pins	SA564, Grade 630 H1075	3 1/3 in. (n)	+70 - Based on chemistry, heat treatment and data from Armco Steel.	+70	Note 3
Penetration Z-1A	SA155 CMSH80 Normalized and tempered	1.5 in. (n)	+30 - Based on summer '77 Class 2 TNDT data for SA516-65	+70	
Penetration Z-11	SA333, Grade 6 Normalized	1 in. (n)	+70 - Based on NUREG 0577 for "worst case" analysis as "mild" steel. Also based on Charpy V-notch tests at -50 which is consistent and adequate for a design lowest service metal temperature of +70	+70	Note 4
Flued Head Penetration Z-1A	SA508 Class 1 Quenched and tempered	6 in. (n)	+62 - Based on actual DWT indicating TNDT 0	+70	

[illegible]

Item	Material	Thickness (Note 1)	Permissible Lowest Service Metal Temperature (PLSMT) (°F) and Basis	Lowest Service Metal Temp. (LSMT) (°F) (Note 2)	Remarks
Flued Head Penetration Z-4A	SA508 Class 2 Quenched and tempered	8 in. (n), 6.16 in. (d)	+62 - Based on actual DWT indicating TNDT 0 and design thickness	+70	Note 5
MSS Pipe NM-01-85	SA106-C Normalized	1.177 in. (m)	+70 - Based on NUREG 0577 for "mild" steel not heat treated (better than)	+70	Note 6
MSS Sockolet	SA105	0.156 in. (d)	+69 - Based on NUREG 0577 for C-Mn steel not heat treated	+70	
FWS Pipe and Reactor Water Cleanup (WCS) Pipe - 24 in. and 8 in.	SA106B and C Normalized	2.062 in. (n) 0.906 in. (n)	+70 - Based on NUREG 0577 for "mild" steel not heat treated (better than)	+70	Note 5
WCS Pipe 8 in.	SA333, Grade 6 Normalized	0.906 in. (n)	+70 - Based on NUREG 0577 for "worst case" analysis as "mild" steel. Also based on Charpy V-notch tests at -50 which is consistent and adequate for a design lowest service metal temperature of +70	+70	Note 4,5
WCS Sockolet	SA105	0.092 in. (d)	+69 - Based on NUREG 0577 for C-Mn steel not heat treateed	+70	Note 5
WCS Elbows	SA234 WPB (SA106) Normalized	0.906 in. (n)	+70 - Based on NUREG 0577 for "mild" steel not heat treated (better than)	+70	Note 5
2FWS*FTG1A					
FWS Thermal Tee Flued Head	SA350, Grade LF2 Normalized	1.804 in. (m)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5

Item	Material	Thickness (Note 1)	Permissible Lowest Service Metal Temperature (PLSMT) (°F) and Basis	Lowest Service Metal Temp. (LSMT) (°F) (Note 2)	Remarks
FWS Thermal Tee Extruded Outlet Fit	SA240, Grade WPL6 (SA350 LF2) Normalized	2.625 in. (m)	+28 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Thermal Tee Thermal Sleeve	SA350, Grade LF2 Normalized	0.793 inn. (m)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Thermal Tee Reducer	SA350, Grade LF2 Normalized	1.804 in. (m)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Thermal Tee Thermal Sleeve Run	SA516, Grade 70 Normalized, cold formed and stress relieved	3/8 in. (n)	+50 - Based on summer '77 Class 2 TNDT data and NRC Bulletin No. 158	+70	Note 5,7
2MSS*HYV7A					
MSIV Body	SA350, Grade LF2 Quenched and tempered	2.55 in. (d)	+2 - Based on NUREG 0577 for C-Mn steel normalized (better than)	+70	
MSIV Bonnet	SA350, Grade LF2 Quenched and tempered	4.94 in. (d)	+27 - Based on NUREG 0577 for C-Mn steel normalized (better than)	+70	
MSIV Ball	SA351, Grade CF8M		Excluded - Based on austenitic stainless steel		
MSIV Bolting					Note 8

Item	Material	Thickness (Note 1)	Permissible Lowest Service Metal Temperature (PLSMT) (°F) and Basis	Lowest Service Metal Temp. (LSMT) (°F) (Note 2)	Remarks
2FWS*MOV21A					
FWS Valve Body	SA105 Quenched and tempered	2.28 in. (m)	+2 - Based on NUREG 0577 for C-Mn steel normalized (better than)	+70	Note 5
FWS Valve Bonnet	SA105 Normalized	2.47 in. (m)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Valve Wedge	SA105 Normalized	1.7128 in. (d)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Valve Bolting	--	--	--	--	Note 8
FWS Valve Thrust Ring	SA182, Grade F6 Normalized and tempered	1.253 in. (d)	+70 - Based on heat treatment and data from Republic Steel and Universal-Cyclops Steel	+70	Note 5,9
2FWS*AOV23A					
FWS Swing Check Valve Body	SA216, Grade WCB Normalized	2.28 in. (m)	+65 - Based on NUREG 0577 for cast steel heat treated (better than)	+70	Note 5
FWS Swing Check Valve Bonnet	SA105 Normalized	4.498 in. (a)	+50 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Swing Check Valve Disk	SA105 Normalized	2.28 in. (m)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
FWS Swing Check Valve Bolting	SA193-B7 SA194-2H Quenched and tempered	5/8 in. (n)	Excluded from GDC 51 review based on NUREG 0577 categorization as least susceptible to brittle failure	--	Note 5

Item	Material	Thickness (Note 1)	Permissible Lowest Service Metal Temperature (PLSMT) (°F) and Basis	Lowest Service Metal Temp. (LSMT) (°F) (Note 2)	Remarks
2WCS*MOV200					
WCS Valve Body	SA105 Normalized	0.880 (d)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
WCS Valve Bonnet	SA105 Normalized	0.875 (d)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
WCS Valve Disk	SA105 Normalized	2.25 (d)	+25 - Based on NUREG 0577 for C-Mn steel normalized	+70	Note 5
WCS Valve Bolting	--	--	--	--	Note 8
WCS Valve Thrust Ring	SA182 Grade F6 Normalized and tempered	1.0 (m)	+70 - Based on heat treatment and data from Republic Steel and Universal-Cyclops Steel	+70	Note 5,9

NOTES TO TABLE 1

Note 1 The values presented as "thickness" are as noted:

a. Actual thickness

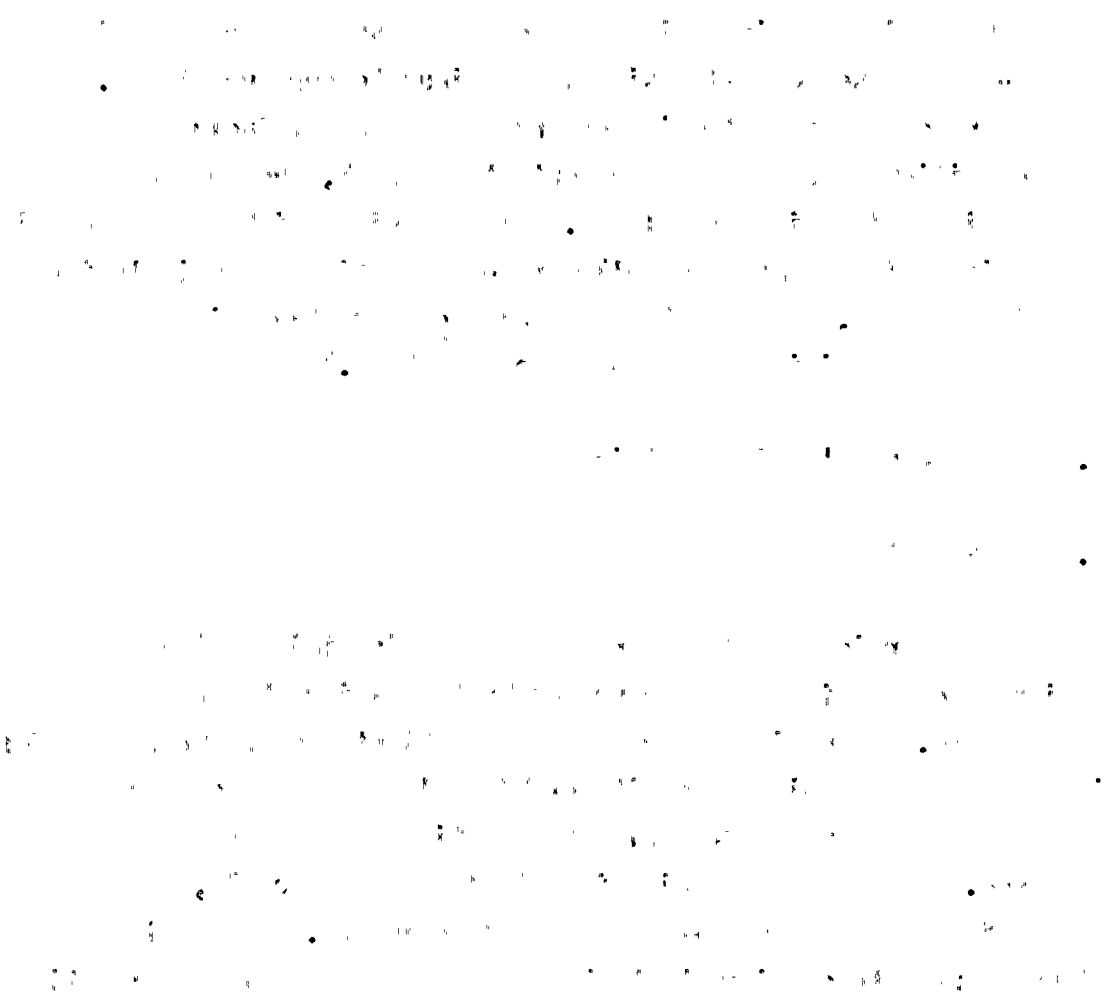
b. Minimum design thickness

(The minimum design thickness for the flued head penetration Z-4A is based on all design loads minus temperature loads. Therefore, this value is conservative since it includes conditions that are not present at the LSMT, such as safety relief valve discharge loads. Other design thicknesses noted in this table are based on all worst-case design loads including temperature, and are therefore also conservative since they include conditions not present at the LSMT.)

m. Manufacturer's minimum thickness

n. Nominal thickness

Note 2 The lowest service metal temperature (LSMT) is limited either by the minimum local ambient temperature or by the minimum hydrotest temperature. When limited by the local ambient temperature, the LSMT is based on the minimum capacity of HVAC plus heat effects due to plant conditions necessary prior to the time the components are stressed. These heat contributions include, for example, heat from plant lighting and operating mechanical equipment. The following figure serves to clarify the LSMT when the hydrotest is the limiting condition.



Note 3 SA564, Grade 630 is a precipitation hardening steel which cannot be drop-weight tested. The deposition of the weld bead as required by ASTM E208 would alter the material properties and therefore render the test not meaningful. From a metallurgical consideration, the heat used had a relatively high nickel content (4.42 percent) and was age hardened at a relatively high temperature (1,075°F, minimum), both of which serve to enhance the fracture toughness of this material.

Note 4 The PLSMT for penetration Z-11 and for the 8-in. feedwater pipe, both fabricated of SA333, Grade 6, were evaluated as follows:

Generally, SA333 can be expected to perform significantly better than the "mild steel" group of NUREG 0577. SA333 is Specification for Seamless and Welded Steel Pipe for Low Temperature Service. When intended for low temperature service, materials are manufactured with built-in inherent toughness, accomplished mainly by tight controls on cleanliness, chemistry and heat treatment. This inherent toughness is evidenced by the high CVN absorbed energy values obtained at very low temperatures.

For the two items in question, CVNs were performed on each heat of material at -50°F in accordance with SA333, Grade 6 and demonstrated absorbed energy values of 60/41 ft/lb and 131/100 ft/lb (average of 3/lowest single value). In accordance with NUREG 0577, paragraph 4.4.1, the temperature at which CVNs demonstrate 20 to 25-ft/lb absorbed energy is considered to approximate the TNDT. Therefore, for the heats above, it can be conservatively assumed that the TNDT is at or below -50°F, and that the SA333, Grade 6 is adequate for these items.

Note 5 There are situations where the FWS and WCS actual metal temperature may be less than +70°F; however, these situations could occur only during startup from the cold shutdown condition where the loads are very low. At very low stresses, the probability of rapidly propagating fracture is also very low. As the pressure increases, the temperature also increases such that the temperature is greater than +70°F for all conditions where the pressure exceeds 660 psi. A

pressure of 660 psi correlates to 20% of the preoperational system hydrostatic test pressure, which is defined by ASME III NC-2300, 1977 Edition including the summer 1977 addendum as the reference point to be used in establishing the lowest service temperature.

Note 6 Actual fabrication of main steam piping which serves as primary containment pressure boundary did not include hot bending. The CMTRs included hot bending information as a qualification in case it was elected to hot bend in fabrication. The actual fabrication, however, used miters and the material is therefore in the normalized condition. NUREG 0577, Table 4.4, on the basis of Figure 8 data for normalized SA106, would assign a TNDT at or below +40°F. The ASME III summer 1977 addenda, Class 2 rules then would assign a PLSMT of +70°F.

Note 7 The normalized SA516 Grade 70 was cold worked approximately 1.9% in forming the thermal sleeve run. Welding Research Council Bulletin No. 158 presents data on the effects of cold work and cold work plus stress relief on the toughness properties of material such as this. The data demonstrate that the transition temperature increases with increasing cold work. After a stress relief of 1150°F, this ranges from an increse of 0°F for 1% cold work to an increase of 20°F for 5% cold work. Conservatively, a 20°F increase in the TNDT of the thermal sleeve run can be assumed, raising the ASME III summer 1977 Class 2 TNDT to +20°F and resulting in a PSLMT of +50°F.

Note 8 MSS*HYV7A, FWS*MOV21A and WCS*MOV200 bolting are not pressure-retaining parts.

Note 9 SA182 Grade F6 is a martensitic chromium stainless steel which cannot be drop weight tested. The deposition of the weld bead as required by ASTM E208 would alter the material properties and therefore render the test not meaningful. From a metallurgical consideration, the high tempering temperature of 1400°F produces a material with a significantly high toughness. This is reflected in data from Republic Steel and other sources in the literature.

2FWS-MOV 21A

U 5 4 / 4

W810383

REVISED

GALT-BRITISH FORGE COMPANY

Velan Code R156

204 BEVERLY STREET — CAMBRIDGE (GALT), ONTARIO N1R 3Z8

Velan Valve 3 Rings 25 3/4" O.D. x 22½" I.D. x 1¼" thick Thrust Ring

Specification ASME SA182 F6 P.O. No. W2705

Dwg. No. Mill: Atlas Steels

Part No. 2225-RNG-010

Certificate of Test

NORMALIZED & ~~TEMPERED~~

W. E. P. C. INSPECTED 230

CHEMICAL ANALYSIS

HEAT NO.	C	MN	P	S	SI	CR	MO	NI	CU		
J3609	.10	.58	.021	.002	.39	11.87		.11			

PHYSICAL PROPERTIES

Heat No.	Yield Strength P.S.I. (.2% Offset)	Tensile Strength P.S.I.	Elong. %	Red. of Area %	Brinnell Hardness
T1623 J3609	61,970	88,370	30.5	73.6	149

HEAT TREAT DATA

1. Furnace No. 3.
2. Charge 100° F.
3. 550 °F/hr.
4. Hold 1750 °F/ 1 hr.
5. Air cool.
6. Furnace No. 3.
7. Charge 1000° F.
8. 200 °F/hr.
9. Hold 1400 °F/ 3½ hrs.
10. Air cool.

Charpy V-Notch Impact Test at + 40 °F

	Impact Ft. Lbs.	Lateral Expansion Mils	Shear Fracture %
1.	85.0	66	40
2.	69.0	54	35
3.	78.5	60	40

ASME B. & P.V. Code Section 2 Part A & Sect. 3 1974 Edition & Addenda through Winter 1975

Test specimens from 1½" x 4½" block Orientation & location per NB2223.3

1. Material Identification Marking: P.O. No. W2705 Part No. 2225-RNG-010
   Grade SA182 F6 Heat No. J3609 G.B.F.

ANI/AI REVIEW
INITIAL
DATE 7/30/81

2. Material produced according to our Q.A. Manual approved by Velan Engr.
3. These forgings have not come into direct contact with mercury or any of its components, nor with any mercury containing devices during manufacture, testing, inspection or storage.
4. Weld Repair — None.
5. This is to certify that the contents of this report are correct and accurate and that all operations performed are in compliance with the requirements of the material specification and the purchase order.

INFORMATION ONLY

Galt-British Forge Company
Quality Assurance

REVISED DATE Sept. 17, 1979

Date August 14, 1979

8411060441

TRANSMITTAL NO. 010383

SOLD TO / SHIP TO

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION - UNIT 2
P.O. NO. NMP2-P3071
THERMAL TEE, MARK NO [redacted] -1B
TUBE TURNS, LOUISVILLE, KY

DETAILED ANALYSIS REPORT

Tube Turns Division

TT-FORM (4-76)

LOUISVILLE, KY. 2/10/83

TUBE TURNS ORDER NO. 73506

CUSTOMERS' ORDER NO.

DESCRIPTION	HEAT TREATMENT	YIELD STRENGTH PSI	TENSILE STRENGTH PSI	PERCENT ELONGATION IN 2"	PERCENT REDUCTION IN AREA	C	MN	P	S	SI	NI	CR.	MO	CU	HEAT OR LOT NO.	MADE FROM MATERIAL OF CHEMISTRY AND TENSILE PROPERTIES OF SPECIFICATION
30" x 10" 2.625" MIN. WALL EXTRUDED OUTLET FITTING SA 420 GRADE WPL6 ASME SECTION III, CLASS I 1977 EDITION WITH ADDENDA THROUGH SUMMER, 1979	2*	44300	70000	36	73	SEE ATTACHED REPORT FROM GULF COAST MACHINE AND SUPPLY CO.									L 6997FA HEAT 64459	SA 350 LF2

CHARPY V-NOTCH @ +50°F: 139-139-237 FT. LBS.
(10mm x 10mm) 65-100-100 % SHEAR FRACTURE
73-74-80 MILS LATERAL EXPANSION
SPECIMENS LOCATED 1/4 THICKNESS AND ORIENTED LONGITUDINALLY.

* TEST MATERIAL STRESS RELIEVED AT 1150°F FOR 12 HOURS AFTER PRODUCTION HEAT TREATMENT; PRODUCTION HEAT TREATMENT WAS NORMALIZE AT 1650°F FOR 3 HOURS AND AIR COOL.

FITTINGS HAVE A MAXIMUM HARDNESS OF 197 BHN.

MATERIAL PROCESSED IN ACCORDANCE WITH THE QUALITY SYSTEMS REQUIREMENTS OF SUBARTICLE NCA-3800; QUALITY SYSTEM CERTIFICATE QSC-357 WITH EXPIRATION DATE OF JANUARY 8, 1985.

THE SPECIFIC MARKING THAT WILL IDENTIFY THIS MATERIAL TO THE CERTIFICATION IS THE MATERIAL SPECIFICATION, TUBE TURNS SYMBOL, SIZE, AND LOT NUMBER.

S.W.E.C. PQC INSPECTED-173

* STANDARD ROUND TEST SPECIMEN
1 ANNEALED
2 NORMALIZED
3 NORMALIZED AND STRESS RELIEVED
4 STRESS RELIEVED
5 QUENCHED AND TEMPERED
6 HOT FORMED
7 HEAT TREAT PER ORDER SPECIFICATION

SUBSCRIBED AND SWORN TO BEFORE ME THIS

____ DAY OF _____ 19____

NOTARY PUBLIC

I HEREBY CERTIFY THIS REPORT TO BE TRUE AND CORRECT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

S.D.VITATOE, QUALITY ASSURANCE

SOLD TO / SHIP TO

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION - UNIT 2
P.O. NO. NMP2-P307L
THERMAL TEE, MARK NO 2FWS *F.T.G.-1A-1B
TUBE TURNS, LOUISVILLE, KY

DETAILED ANALYSIS REPORT
Tube Turns Division

REV. (4-76)

LOUISVILLE, KY. 2/10/83

TUBE TURNS ORDER NO. 73506

CUSTOMERS' ORDER NO.

DESCRIPTION	HEAT OR LOT NO	
LINE C THERMAL SLEEVE INSERT	L7004	MATERIAL FORGED, HEAT TREATED, AND MECHANICALLY TESTED BY GULF COAST MACHINE AND SUPPLY CO. (CMTR ATTACHED). LOT # L7004 IS GULF COAST HEAT # 55285 MATERIAL ULTRASONICALLY EXAMINED, MACHINED TO SHAPE, AND MAGNETIC PARTICLE EXAMINED BY TUBE TURNS; NDE REPORTS ARE INCLUDED IN SECTION 5 OF DATA PACKAGE.

S.W.E.C. PQC INSPECTED-173

This report supplements the attached Material Manufacturer's Certified Material Test Report for the Heat(s)/Lot(s) of material described on this report for the above customer's order number:

The specific marking that will identify the material to the Certified Material Test Report is the Tube Turns symbol, size, specification, pressure rating, and heat or lot number.

Material complies with ASME Section III, Class 1, 1977 Edition, with Addenda through SUMMER 1979.

Material processed in accordance with the Quality System requirements of Subarticle NCA 3800; Quality System Certificate QSC-358 with expiration date of Jan. 8, 1985.

I HEREBY CERTIFY THIS REPORT TO BE TRUE AND CORRECT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

Quality Control

GULF COAST MACHINE & SUPPLY CO.

TUBE TURNS P.O. 01068

MILL TEST REPORT

S.W.E.C. RQC INSPECTED 1-13

REFERENCE NUMBER	DATE	CUSTOMER P/O NUMBER	SOLD TO
L[redacted]0	08/06/82	44801	TUBE TURNS

	QUAN. ORD. / QUAN. SHIP. / ITEM	DESCRIPTION	HEAT NUMBER / BHN	HEAT TREAT CYCLE
1	2 / 2 / 8C55L	ASME SA-350 LF-2 SEC.3 CLASS I (PER TT-735C6-CS-F-201 REV 0) NORMALIZE ROUGH FORGING TO FINISH 10-3/4 OD X 6.813 ID X 12.375 LG LATERAL EXPANSION: 91 89 91 % SHEAR: 90 100 100	55285 BHN ___TO___	NORMALIZED AT 1650 DEG F. FOR 5 HOURS AND AIR COOLED. L6993.
2	1 / 1 / 8C54L	ASME SA-350 LF-2 SEC.3 CLASS I (PER TT-735C6-CS-F-201- REV 0) NORM CHARPY V AND TENSION TEST AT PLUS 50DEG.F 25MILS EXP. AFTER PWHT AT 1150 DEG.F FOR 12HRS AND COOLED PER NB 4623 (RESULTS ONLY) FINISH MACH. 3 TH X 3 WIDE X 12 LG	HEAT NUMBER 55285 BHN ___TO___	SAME AS ABOVE
3	2 / 2 / 8C55L	ASME SA-350 LF-2 SEC.3 CLASS I (PER TT-735C6Y-CSF 200 REV.0) NORMALIZE ROUGH FORGING TO FINISH B0.400 OD X 19.875 ID X 24 LG LATERAL EXPANSION: 71 85 81 % SHEAR: 100 100 100	HEAT NUMBER 6C51538 BHN 156 ___TO___	NORMALIZED AT 165C DEG F. FOR 5 HOURS AND AIR COOLED. [redacted] Reducer
4	2 / 2 / 8C55L	ASME SA-350 LF-2 SEC.3 CLASS I (PER TT-735C6Y-CSF 200 REV.0) NORMALIZE ROUGH FORGING TO FINISH B0.400 OD X 19.750 ID X 13 LG LATERAL EXPANSION: 71 69 73 % SHEAR: 100 100 100	HEAT NUMBER 6C51538 BHN 156 ___TO___	NORMALIZED AT 1650 DEG F. FOR 5 HOURS AND AIR COOLED. [redacted] Flued Ell
5	1 / 1 / 8C57L	ASME SA-350 LF-2 SEC.3 CLASS I (PER TT-735C6YCSF20C REV.0) NORM CHARPY V NOTCH AND TENSION TEST AT PLUS 50DEG.F 40MILS EXP. AFTER PWHT AT 1150 DEG.F FOR 12HRS AND COOLED PER NB 4623 (RESULTS ONLY) FINISH MACHINE 6-1/2 SQ. X 12 LG	HEAT NUMBER 6C51538 BHN ___TO___	NORMALIZED AT 1650 DEG F. FOR 5 HOUR AND AIR COOLED.
8	1 / 1 / 8C60L	ASME SA-350 LF-2 SEC.3 CLASS I (PER TT-735C6YCSF20J REV.0) NORM CHARPY V NOTCH AND TENSION TEST AT PLUS 50DEG.F 40MILS EXP. AFTER PWHT AT 1150 DEG.F FOR 12HRS AND COOLED PER NB 4623 (RESULTS ONLY) FINISH MACHINE 6-1/2 SQ. X 12 LG	HEAT NUMBER 6C51538 BHN ___TO___	NORMALIZED AT 1650 DEG F. FOR 5 HOURS AND AIR COOLED. NOTE STATION - UNIT 2 FOR PWHT SEE PAGE 2

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION - UNIT 2
NO. NMP2-B30T[illegible]
THERMAL TEE, MARK NO. 2F
TUBE TURNS, LOUISVILLE, KY

CHEMICAL ANALYSIS

M	HEAT NUMBER	STEEL MILL	C	MN	PHOS	SUL	CU	V	TYPE ANALYSIS	STEEL MI CHECK	
	55285	ARMCO	.17	1.35	.010	.006	.23			.024	
	55285	ARMCO	.17	1.35	.010	.006	.21				
	6C51538	REPUBLIC	.17	1.17	.008	.004	.21				
	6C51538	REPUBLIC	.17	1.17	.008	.004	.21				
	6C51538	REPUBLIC	.17	1.17	.008	.004	.21				
	6C51538	REPUBLIC	.17	1.17	.008	.004	.25				

MECHANICAL PROPERTIES

TYPE — BILLET HEAT ACCEPT—B; PRODUCT PROLONGATION—P; REPRESENTATIVE TEST BLO

M	TENSILE LB. PER SQ. IN.	YIELD LB. PER SQ. IN.	ELONGATION IN 2 INS.	REDUCTION IN AREA %	TYPE TEST	CHARPY IMPACT TEST: TYPE SAMPLE	°F	IMPACT TEST VALVES FT/LBS.			AVG.
	79,000	54,000	35.00	76.00	R	V-NOTCH	+50	174	167	170	170
	79,000	54,000	35.00	76.00	R	V-NOTCH	+50	174	167	170	170
	79,000	45,200	41.00	77.00	R	V-NOTCH	+50	234	236	234	235
	70,000	45,500	39.00	76.00	R	V-NOTCH	+50	216	239	240	232
	70,000	45,200	41.00	77.00	R	V-NOTCH	+50	234	236	234	235
	70,000	45,500	39.00	76.00	R	V-NOTCH	+50	218	239	240	232

THIS IS TO CERTIFY THAT THE REPORT RECEIVED ON MATERIAL FURNISHED ON THIS ORDER, ARE TO EFFECT, THAT IN ALL RESPECTS, SUCH MATERIAL MEETS REQUIREMENTS FOR SPECIFICATIONS AS INDICATED IN DESCRIPTION. STEEL MADE IN U.S.A.

GULF COAST MACHINE & SUPPLY CO.

GULF COAST MACHINE & SUPPLY CO.

TRANS. # 01068

MILL TEST REPORT

REF. NUMBER	DATE	CUSTOMER P/O NUMBER		SOLD TO
70	08/05/82	44801		TUBE TURNS

DESCRIPTION	HEAT NUMBER / BHN	HEAT TREAT CYCLE
NOTE: POST WELD HEAT TREATED AT 1150 DEG F. FOR 12 HOURS PER NB 4623	HEAT NUMBER BHN TO	
NOTE: THIS MATERIAL HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE QUALITY SYSTEM PROGRAM AUDITED AND APPROVED BY TUBE TURNS ON 3/24/82 AS CONFORMING WITH THE REQUIREMENTS OF ASME SECTION III METALLIC MANUFACTURER-QUALITY SYSTEM PROGRAM (NCA 3800).	HEAT NUMBER BHN TO	
NIAGARA MOHAWK POWER CORPORATION NINE MILE POINT NUCLEAR STATION - UNIT 2 P.O. NO. [illegible] THERMAL TEE, MARK NO 2FWS *F.T.G.- IA-IB TUBE TURNS, LOUISVILLE, KY	HEAT NUMBER BHN TO	
	HEAT NUMBER BHN TO	
	HEAT NUMBER BHN TO	

S. W. E. C. PQC INSPECTED 173

CHEMICAL ANALYSIS

TYPE ANALYSIS { STEEL MI / CHECK

HEAT NUMBER	STEEL MILL	C	MN	PHOS	SUL	SI	NI	CR	MOLY	CU	V	

MECHANICAL PROPERTIES

TYPE — BILLET HEAT ACCEPT—R / PRODUCT PROLONGATION— / REPRESENTATIVE TEST BLO

TENSILE LB. PER SQ. IN.	YIELD LB. PER SQ. IN.	ELONGATION IN 2 INS.	REDUCTION IN AREA %	TYPE TEST	CHARPY IMPACT TEST: TYPE SAMPLE	°F	IMPACT TEST VALVES FT/LBS.	AVG.

THIS IS TO CERTIFY THAT THE REPORT RECEIVED ON MATERIAL FURNISHED ON THIS ORDER, ARE TO EFFECT, THAT IN ALL RESPECTS, SUCH MATERIAL MEETS REQUIREMENTS FOR SPECIFICATIONS AS INDICATED IN DESCRIPTION.

GULF COAST MACHINE & SUPPLY CO.

TO
NIAGARA [redacted]AWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION - UNIT 2
P.O. NO. NMP2-P307L
THERMAL TEE, MARK NO 2FWS *F.T.G.-1A-1B
TUBE TURNS, LOUISVILLE, KY
TO

DETAILED ANA[redacted]S REPORT
Tube Turns Division

[redacted]A REV. (4-76)

LOUISVILLE, KY. 12/13/82

TUBE TURNS ORDER NO. 73506

CUSTOMERS' ORDER NO.

DESCRIPTION	HEAT OR LOT NO	
		MATERIAL FORGED, HEAT TREATED, AND MECHANICALLY TESTED BY GULF COAST MACHINE AND SUPPLY CO. (CMTR ATTACHED).
A-FLUED HEAD FITTING IN SECTION	L6994, L6995	MATERIAL ULTRASONICALLY EXAMINED, MACHINED TO SHAPE, AND MAGNETIC PARTICLE EXAMINED BY TUBE TURNS. NDE REPORTS ARE INCLUDED IN SECTION 5 OF DATA PACKAGE.
C-THERMAL SLEEVE	L6993	LOTS L6990 &L6991 ARE GULF COAST HEAT 6051538
D-REDUCER	L6990, L6991	LOT L6993 IS GULF COAST HEAT 55285
SA 350 GRADE LF2		LOTS L6994 & L6995 ARE GULF COAST HEAT 6051538

This report supplements the attached Material Manufacturer's Certified Material Test Report for the Heat(s)/Lot(s) of material described on this report for the above customer's order number:

The specific marking that will identify the material to the Certified Material Test Report is the Tube Turns symbol, size, specification, pressure rating, and heat or lot number.

Material complies with ASME Section III, Class 1, 1977 Edition, with Addenda through Summer 1979.

Material processed in accordance with the Quality System requirements of Subarticle NCA 3800; Quality System Certificate QSC-358 with expiration date of Jan. 8, 1985.

S.W.E.C. PQC INSPECTED-173

TRANS. REF. 0 1 0 6 8

I HEREBY CERTIFY THIS REPORT TO BE TRUE AND CORRECT ACCORDING TO RECORDS IN THE POSSESSION OF THIS CORPORATION.

Quality Control

T-3364 | STONE & WEBSTER ENGINEERING CORPORATION | SH. 1 OF 3

QUALITY ASSURANCE INSPECTION REPORT - TYPE B | QA DISTRICT 16

P.O. MAT'L/EQUIP DESCRIPTION 8" 900# PRESSURE SEAL GLOBE VALVE

IR NUMBER	SHOP ONLY	KEYWORD	QA CAT	TYPE INSP	PURCHASE ORDER
N2P304R1020	A1	VALVOP	1	SR	P304R

TOTAL QTY	NO/QTY QBS	NO/QTY QBS UNSAT	NO/QTY UNITS SHIPPED
35	35	0	1 ITEM 22 UNITS

INSPECTION RESULTS: S OR U = S; DATE = 11 15 83; SIGNATURE = Frank R Clayton

PRIME SELLER CODE	SELLER NAME	LOCATION	SUB-SELLER CODE	SUB-SELLER NAME	LOCATION
A2 / 9136	VELAN VALVE	WILLISTON VT.			

SHOP ORDER NO. P3-7026 | SHOP ORDER NO.

FOR MAT'L/EQUIP/MISC IDENTIFICATION NUMBERS, SEE SUPPLEMENTAL SHEET(S)

ENTER ATTRIBUTES FROM SUPPLEMENTAL SHEET(S)

	IR CLOSED DATE MO DAY YR	SIGNATURE	N & D APPLIES TO MAT'L/EQUIP/ID NO.(S) LISTED ON SUPPLEMENTAL SHEET(S)	N & D NO.	N & D ISSUE DATE MO DAY YR
A5					
A5					

DO NOT KEYPUNCH ENTRIES BELOW THIS LINE

REMARKS THIS REPORT COVERS THE FOLLOWING VALVES

SW ITEM	DATA PKG #	QTY	SERIAL #	SW MK
22	W830850	1	850	2WCS MOV200

ATTRIBUTES NOTED ON PAGE 2 OF 4 OF N&D G-090 WERE FOUND TO BE ACCEPTABLE AS LISTED ON THIS REPORT.

APPLICABLE ELDEN'S

P01,428 DATED 12-2-82 ACTUAL VALVE WEIGHT +/- 10%

THE FOLLOWING CORRECTIONS WERE MADE TO THE DOCUMENTATION PKG.

DOCUMENTATION CHECK LIST DID NOT NOTE ENGINEERS SHIPPING RELEASE NOTICE.

U.T. REPORT REQUIRED CORRECTION

FOR INFO ONLY

CL-1

JOB ORDER NO.	DWG. NO/REV.
12177.50	P3-702L-N9

SPECIFICATION NO/REV. NO/ADD/DATE	PCCHG. NO.	IP/ATT LIST NO.	REV NO/CHG. NO
NMP2-P304R REV.2 ADD #4	27A	N20P304RP0001	0B 00

SPECIFICATION TITLE: MOTOR OPERATED CARBON STEEL VALVES

IR REVIEWED BY: Q Lyme

STONE & WEBSTER ENGINEERING CORPORATION - QUALITY ASSURANCE INSPECTION REPORT

SH 2 OF

SUPPLEMENTAL SHEET SSA

CL-1

IR NUMBER: N2P304R1020

SHOP ONLY

12 13
A 4

ITM. NO.	COLS.	ATTR. CODE	ATTRIBUTES	RESULT OR RESPONSIBILITY	NO/QTY UNSAT SUMMARY			
1	14-22	D16	PREPRODUCTION REVIEW.	S		001	001	001
2	23-31	D08	RELEASE FOR FAB.	S		020	019	015
3	32-40	D13	PROCESS PROCEDURES	S		↑	↑	015
4	41-49	D13	CLEANING PROCEDURES	S		↕	↕	015
5	50-58	D13	PACKAGING AND SHIPPING PROC.	S		↕	↕	015
6	59-67	D14	PNEUMATIC SEAT LEAK TEST PROC.	S		↓	↓	015
7	68-76	D14	MOTOR OPERATOR TEST PROC.	S		020	019	016

12 13
A 4

ITM. NO.	COLS.	ATTR. CODE	ATTRIBUTES	RESULT OR RESPONSIBILITY	NO/QTY UNSAT SUMMARY			
8	14-22	D02	WELDER QUALIFICATIONS	S		020	019	015
9	23-31	D02	NDE PERSONNEL QUALIF.	S		↑	↑	015
10	32-40	D09	CERT. MTL. RPT. FOR PRESS. PARTS	S		↓	↓	015
11	41-49	D11	STRESS REPORTS	S		020	019	015
12	50-58	D11	HEAT TREAT RECORDS	N		N/A	N/A	[illegible]
13	59-67	W06	WALL THICKNESS MEASURE DOC.	S		020	019	015
14	68-76	T16	NDE REQUIREMENTS	S		020	019	015

12 13
A 4

ITM. NO.	COLS.	ATTR. CODE	ATTRIBUTES	RESULT OR RESPONSIBILITY	NO/QTY UNSAT SUMMARY			
17	14-22	T12	RADIOGRAPHIC FILM & RECORDS	N		N/A	N/A	[illegible]
19	23-31	D12	NDT REPORTS	S		020	019	015
20	32-40	T08	HYDROSTATIC SHELL TEST	S		↑	↑	015
21	41-49	T08	HYDROSTATIC SEAT TEST	S		↕	↕	015
22	50-58	T08	PNEUMATIC SEAT LEAK TEST	S		↕	↕	015
23	59-67	T01	PERFORMANCE TEST	S		↓	↓	015
24	68-76	T10	MOTOR TESTS	S		020	019	015

ITEM NUMBER/COMMENTS:

MK#2CSL-MOV-104 ITEM 1

MK#2MSS-MOV111 ITEM 5

MK#2WCS-MOV200 ITEM 22

REMARKS:

FOR INFO ONLY

STONE & WEBSTER ENGINEERING CORPORATION – QUALITY ASSURANCE INSPECTION REPORT SH 3 OF

SUPPLEMENTAL SHEET S5A

CL-1

IR NUMBER N2P304R102 SHOP ONLY 0

ITM. NO.	COLS.	ATTR. CODE	ATTRIBUTES	RESULT OR RESPONSIBILITY							
12 13 A 4							
25	14-22	T10	MOTOR OPERATOR TEST	S	020	019	015
26	23-31	T10	MFG. MTR. OPERATOR PROTO. DATA	S	↕	↕	015
27	32-40	D10	MOTOR OPERATOR SIZING CAL.	S	↕	↕	015
28	41-49	D03	SEISMIC CALCULATIONS	S	020	019	015
30	50-58	T01	OPERABILITY TEST	N	N/A	N/A	N/A
31	59-67	W01	CLEANLINESS EXAM	S	020	019	015
32	68-76	W05	FINAL INSPECTION	S	020	019	015
12 13 A 4							
33	14-22	W06	DIMENSIONAL CHECK	S	020	019	015
34	23-31	W17	SHOP PAINTING	S	↕	↕	015
35	32-40	B01	MARKING	S	↕	↕	015
36	41-49	W26	PACKAGING AND SHIPPING	S	↕	↕	015
37	50-58	W04	LIMITORQUE PROBLEM RPTS.	S	↕	↕	015
38	59-67	W04	STEM NUT LOCK NUTS	S	↕	↕	015
39	68-76	D03	DOCUMENTATION CHECKLIST	S	020	019	015
12 13 A 4							
0	14-22	D11	RCD'S AND CERT. PREP FOR SHIP.	S	020	019	015
1	23-31	D11	MFG'S DATA RPT.	S	↕	↕	015
2	32-40	D11	DOCUMENTATION AUDIT	S	↕	↕	015
3	41-49	D09	SHIPPING RELEASE	S	020	019	015
	50-58						
	59-67						
	68-76						

NO/QTY UNSAT SUMMARY

ITEM NUMBER/COMMENTS:

MK#2CSL-MOV-104 ITEM 41

MK#2MSS-MOV111 ITEM 5

MK#2WCS-MOV200 ITEM 22

EMARKS:

FOR INFO ONLY

FORM NPV-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code, Section III, Div. 1 W830850

1. Manufactured by VELAN VALVE CORPORATION, AVENUE 'C', WILLISTON, VERMONT
(Name and Address of N Certificate Holder)
2. Manufactured for NIAGARA MOHAWK POWER CORP., OSWEGO NY
(Name and Address of Purchaser or Owner)
3. Location of Installation NINE MILE POINT NUCLEAR STATION RTE 104 OSWEGO, NY
(Name and Address)
4. Pump or Valve GLOBE VALVE. Nominal Inlet Size 8 (inch) Outlet Size 8 (inch)

	(a) Model No., Series No. or Type	(b) N Certificate Holder's Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	B15-7074P-02WN	850	N/A	P3-7026-N9 REV. E	1	N/A	1983
(2)							
(3)							
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

FOR INFO ONLY

5. N/A
(Brief description of service for which equipment was designed)

6. Design Conditions 2200 (Pressure) psi 450 (Temperature) °F or Valve Pressure Class N/A (1)
7. Cold Working Pressure 2250 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			E/C
(b) Forgings			E/C
BODY	ASME-SA-105	CAMERON IRON WORKS	J9865
BONNET	ASME-SA-105	ENERGY PRODUCTS GROUP	A708N
DISC	ASME-SA-105	ENERGY PRODUCTS GROUP	A708N
"PERUS" RING	ASME-SA-182-F6	GALT BRITISH FORGE CO.	J5169

(1) For manually operated valves only.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 3 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

FORM VE-[illegible]-72A

VELAN ENGINEERING COMPANIES

~~W830450~~ 8/30/83 WB
W830850

CERTIFICATE OF COMPLIANCE

1. CUSTOMER NIAGARA MOHAWK POWER CORP.
2. CONTRACT NO. NMP2- P304R
3. CUSTOMER SPEC. NO. NMP2 - P304R
4. CUSTOMER I.D. NO. (TAG NO.) 2WCS- MOV 200
5. DWG. NO. P3- 7026- N9 REV. E
6. DATE: August 30, 1983
7. VELAN ORDER NO. P3- 7026-N ITEM: 22
8. VALVE DESCRIPTION: 8"- 900 PRESSURE SEAL GLOBE VALVE
9. OPERATOR SERIAL NO. 331987
10. QUANTITY: 1
11. NUCLEAR CLASS: N 1 ☒ N 2 ☐ N 3 ☐

(REQ. = REQUIRED) (ENC. = ENCLOSED) QUALITY CONTROL CHECK LIST (P&C = PHYSICAL - CHEM. CERTIFICATE)

PART	SERIAL NO.	MATERIAL SPECIFICATION	HEAT CODES	P & C		RT		UT		PT		MT	
				REQ.	ENCL.	REQ.	PERF.	REQ.	PERF.	REQ.	PERF.	REQ.	PERF.
1. FORGINGS BODY	948	ASME-SA-105	J 9865	x	x			x	x			x	x
2. BONNET COVER	W 2491	ASME-SA-105	A 708 N	x	x			x	x			x	x
3. THRUST RING		ASME-SA-182-F6	J 5169	x	x			x	x			x	x
CASTING 1. WEDGE DISC.	6D 265	ASME-SA-105	A 708 N	x	x			x	x			x	x
2.													
WELD 3. SEAT		ASME SFA 5.18	431P 522	x	x					x	x		
BARS 1. STEM		ASTM-A-276-410 (H100)	RS 276										
2. 309 DEPOSIT		ASME SFA 5.4	23364A	x	x					x	x		
3. DISC UNION WELD		ASME SFA 5.18	431P 522	x	x					x	x		
OTHERS 1. HARDFACE DISC		STELLITE	E3912-836							x	x		
2. HARDFACING													
3. BACKSEAT HARDFACE		STELLITE	E3912-836							x	x		
4. SEAT AREA HARDFACE		STELLITE	PC- 6V- 520							x	x		

FOR INFO ONLY

Q.C. INSPECTED 5.7

APPLICABLE VELAN NDT QC SPECIFICATION AS APPROVED		REV.
RADIOGRAPHY		
ULTRASONIC	T-77-32	0
PENETRANT	VEL-NDT-564B	0
MAGNETIC PARTICLE	VEL-NDT-543B	0
PRODUCTION AND HYDROSTATIC TESTS	VEL-NDT-640A	10
CLEANING	VEL-P-672	1
WALL THICKNESS	VEL-QC-665A	12
	VEL-QCI- 482	6

(WHEN APPLICABLE ONLY)

SWORN AND SUBSCRIBED BEFORE ME THIS

_____

DAY OF _____ 19__

_____

JO 12177

ANI/AI REVIEW
INITIAL [illegible]
DATE 12-21-83

WE HEREBY CERTIFY THAT THE ABOVE STATEMENTS AND VALUES SPECIFIED ARE TRUE AND CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

VELAN ENGINEERING CO.

x [signature]
Q.C. DOCUMENTATION MANAGER

x _____
CUSTOMER REPRESENTATIVE

x _____
DATE

E Marques

T-3238

S&W CERTIFICATE OF COMPLIANCE

CLIENT	J.O.	P.O. NO.
NIAGARA MOHAWK POWER CORP.	12177.50	P304R

PROJECT	SPECIFICATION NO.	REV.	ADDENDA
NINE MILE - UNIT NO. 2	NMP2-P304R	2	4

SELLER VELAN ENGINEERING CO.

PRODUCT DESCRIPTION
NUCLEAR & NON-NUCLEAR VALVES

SELLER'S CERTIFICATION

I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN PURCHASE ORDER NO. P304R REV MIC 27A

S & W ITEM NO.	DATA PKG #	QUANTITY	SERIAL #	MK #
22	W830850	1	850	2WCS-MOV200

FOR INFO ONLY

CL-1

THE VALVES COVERED BY THIS DATA PACKAGE CONFORM IN ALL RESPECTS TO REQUIREMENTS ON THE APPROVED OR APPROVED AS REVISED CUSTOMER DRAWINGS AND ANY ESDCR OR N&D APPLICABLE.

ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO THE ENGINEERS AUTHORIZED REPRESENTATIVE.

SIGNED J.D. Reeves DATE 11/15/83

TITLE DOCUMENTATION MANAGER SELLER VELAN ENGINEERING CO.

STONE & WEBSTER QUALITY ASSURANCE CERTIFICATION

"THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM PROCUREMENT QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW"

*AS APPLICABLE

- [x] AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.
- [x] ALL SPECIFIED SUPPORTING DOCUMENTATION HAS BEEN REVIEWED AND FORWARDED TO S & W PROCUREMENT QUALITY ASSURANCE FOR DOCUMENTATION REVIEW.
- [ ] DOCUMENTATION PREVIOUSLY SUBMITTED.
- [ ] DOCUMENTATION TO REMAIN IN SELLERS FILES.

SIGNED Frank R Shepherd DATE 11-15-83 IR NO. 1020

TITLE SENIOR PQA REPRESENTATIVE

NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS

N&D G-090 SUBVENDOR LIMITORQUE ATTRIBUTES TO BE CHECKED AND ACCEPTED
ESDCR P01,428 ACTUAL VALVE WEIGHT +/- 10%

CERTIFICATE OF TESTS

W830850 ~~W830450~~ Cameron B552 B553

IRON WORKS, INC.

P. O. BOX 1212
HOUSTON, TEXAS 77001

VELAN ENGINEERING LTD.
LARGE STEEL VALVE DIVISION
2125 WARD AVENUE
MONTREAL, QUEBEC
CANADA

*SUPPLEMENTARY REPORT
4/16/82

* ASME QUALITY SYSTEM CERTIFICATE (MANUFACTURER) NO. QSC449 EXPIRES 1-11-85

ALL OPERATIONS WERE PERFORMED BY CIW & MEET THE REQUIREMENTS OF THE MATERIAL SPECIFICATION AND SEC. III, DIV. 1. DATE 11 DEC. 1981

CUSTOMER ORDER NO.	C.I.W. SALES ORDER NO.	SPECIFICATION
C14885	F-22196-01	SA105 ASME B & P.V. CODE SEC. 11 PART A AND SEC. 111 1977 EDITION AND ADDENDA THROUGH WINTER 1979 .

CIW PART NO. DESCRIPTION OF MATERIAL: 61758-10 8" H.P. VALVE BODY FORGING DWG. #8908-006 REV. A

HEAT NO.	LOCATION OR SERIAL NO.	CHEMICAL ANALYSIS C	MN	P	S	SI	CR	NI	MO	CU	CO	TI
L 6742		.25	1.00	.007	.009	.29						
J 9865		.24	.92	.010	.014	.21						

FOR INFO ONLY

S.W.E.C. PQC INSPECTED 57

HEAT NO.	QUANTITY OR SERIAL NO.	TEST LOC.	MECHANICAL PROPERTIES TENSILE PSI	YIELD PSI .2%	% ELONG 2"	% RED AREA	LOT NO.
L 6742	5	TBAR	80,600	56,100	32.7	68.2	0949
J 9865	8	TBAR	76,400	51,900	33.5	67.0	0979

FORG.SER.#	HEAT#	TEST LOT#
0944	J 9865	0979
0945	"	"
0947	"	"
0948	"	"
0961	L 6742	0949
0963	"	"
0967	"	"
0971	"	"
0975	"	"
0979	J 9865	0979
0980	"	"
0981	"	"
0982	"	"

I certify that the contents of this report are in compliance with the requirements of specifications ASME SA-105 Edition 1974 and addenda through WINTER 1975 acepted as noted
Velan Value Corp.
W. Bleau
per Mgr. of Q. C. Documentation

ANI/AI REVIEW INITIAL WC DATE 4-21-82

During manufacture, test and inspection, this product did not come in contact with Mercury of any of its compounds, nor with any Mercury containing device employing a single boundry of containment.

HEAT TREATMENT: 1565°F. HELD 2.50 HRS. AT TEMP. AIR COOLED.
HEAT TREAT FURNACE REPORTS ATTACHED.

SUBSCRIBED AND SWORN TO BEFORE ME THIS
11TH DAY OF DEC. 1981
G. A. TOUCHTON
Notary Public in and for the State of Texas
My Commission Expires April 30, 1985
CIW-429-A

VEL INSP. J

APR 26 1982

I CERTIFY THESE TESTS TO BE CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY.
METALLURGICAL REPRESENTATIVE
M-7581/ch

0553

TECHNITROL CANADA Ltée/Ltd.

TESTING LABORATORIES — LABORATOIRE D'ANALYSES

2245 CHEMIN ST. FRANCOIS ROAD, DORVAL, QUEBEC H9P 1K3 — TEL. (514) 684-5084

TELEX 05-822554

~~W830450~~ W830850

CLIENT / CUSTOMER: Velan Inc.

2125 Ward Avenue

St. Laurent, Québec H4M 1T6

Attention: Mr. G. Trudeau

DATE: February 4, 1983.

NO. DE LABORATOIRE / LABORATORY NO.: N-718

NO. DE COMMANDE / CUSTOMER ORDER NO.: C-16742
Req. P 20014

RAPPORT D'ESSAI
TEST REPORT

S.W.E.C. PQC INSPECTED - 57

Laboratory No.: N-718

Material: ASME SA-105
Heat #J-9865
Serial #0948
Tested to ASME-SA-370 & NB 2300

Size of Impacts: 10mm X 10mm X 55mm

CHARPY V-NOTCH TESTED @ 40°F

	Impact Test Value	Lateral Expansion	% Shear
1	40 ft. lbs.	43 mils	50%
2	87 ft. lbs.	76 mils	60%
3	36 ft. lbs.	42 mils	50%

FOR INFO ONLY

ANI/AI REVIEW
INITIAL
DATE 10-FEB-83

VEL INSP. 64

830208

:dl

D. Gordon, B.Sc.

C458, C459

ENERGY PRODUCTS GROUP
GULF+WESTERN MANUFACTURING COMPANY
Plant 35
P. O. Box 536, West Chester, Pennsylvania 19380

Phone: (215) 793-1500
TWX: 510-663-0372
Telex: 83-5453
Telecopier: (215) 793-1500 Ext. 264

manufacturers of LENAPE FORGE products

* BONNET

MATERIAL TEST REPORT

S. O. NO. 0452-1 WEST CHESTER, PA 11/17/80 19

PURCHASER Velan Valve Corporation DISTRIBUTOR W830450 S15-153 103 1

PURCHASER'S ORDER NO. W6501 DISTRIBUTOR'S ORDER NO. W830850

ITEM NO.	QTY.	PRODUCT	SPEC.	HEAT OR CODE NO.	REMARKS
		All items to be rough forged, heat treated & tested for specification			
1	6	Disc, sufficient to finish to 8.75" O.D. X 6.125" thick (Approx. 140 lbs.ea.) Part # BWCR-DIA-002	SA105 per ASME Sec.II Pt.A,Sec. III,Cl.3	A708N	M/O 690S C458
2 *	5	Disc sufficient to finish to 9.40" O.D. X 8.25" thick (Approx. 216 lbs. each) Part # 7988-012-002 TAG: P.O.# W6501 Part # BWCR-DIA-002 (item 1) # 7988-012-002 (item 2)	'74 Ed. & W '75 Add Velan P.O.Spec. VEL-PS-009,Rev.6 & VEL-QCI-482,Rev.6	A708N	M/O 691S C459

S. N. E. C. P.Q.C. INSPECTED - 57

CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

HEAT NO.	C	MN	P	S	SI	CR	NI	MO			REMARKS
A708N	.26	.90	.007	.016	.21						I certify that the contents of this report are in compliance with the requirements of specifications ASME SA-105 Edition 1974 and addenda through WINTER '75 acepted as noted Velan Value Corp. W. Lean per Mgr. of Q. C. Documentation

FOR INFO ONLY

HEAT NO.	TENSILE	YIELD	ELONG % IN 2"	R.A. %	B.H.N.	V@+40°F IMPACT	LAT EXP	REMARKS % SHEAR
A708N	81,250	50,500	26.5	60.6		40-39-37	.045-.040-.041	30-30-30

MATERIAL INCLUDED ON THIS TEST REPORT WAS MANUFACTURED UNDER ASME QUALITY CONTROL SYSTEMS CERTIFICATE (MATERIALS) NO. N-1980. EXPIRES DECEMBER 9, 1980.

ANI/AI REVIEW INITIAL MKC DATE 10-31-80

We hereby certify the above results to be correct as contained in the records of the Company.

VEL INSP. 73 NOV 24 1980

Tanya Pollock

W830850

~~W830450~~ 5/31/83 WB. #

Velan Valve Corporation

L/F S/O # 0452-1 L/F M/O # 690S,691S

P.O. # W6501

Heat Treatment

1. Heat Treated at Lenape Forge
2. Charge Temperature = 140°F
3. Rate of Temperature Rise or Time to reach Holding Temperature = 8½ hrs.
4. Holding Temperature (Max./Min.) = 1620°min-1640°max.
5. Holding Time = 4½ hrs.
6. Cooling Mode = A.C.

S. W. E. C. PQC INSPECTED · 51

Weld Repair - None

This is to certify that the contents of this report are correct and accurate and that all operations performed are in compliance with the requirements of the material Specification and the purchase order.

This is to certify that to the best of my knowledge the material shipped on this order has not come into contact with any mercury bearing instruments of mercury contaminants during its manufacture and processing.

Provisions of 10 CFR 21 apply.

FOR INFO ONLY

ANI/AI REVIEW
INITIAL
DATE 10-31-83

MATERIAL INCLUDED ON THIS TEST REPORT WAS MANUFACTURED UNDER ASME QUALITY SYSTEMS CERTIFICATE (MATERIALS) NO. N-1950. EXPIRES DECEMBER 9, 1980.

Tanya Pollock

C458, C459

ENERGY PRODUCTS GROUP
GULF+WESTERN MANUFACTURING COMPANY
Plant 35
P. O. Box 536, West Chester, Pennsylvania 19380

Phone: (215) 793-1500
TWX: 510-663-0372
Telex: 83-5453
Telecopier: (215) 793-1500 Ext. 264

manufacturers of LENAPE FORGE products

MATERIAL TEST REPORT

* Disc

S. O. NO. 0452-1 WEST CHESTER, PA. 11/17/80 19

PURCHASER Velan Valve Corporation DISTRIBUTOR ~~W830450~~ W830850

PURCHASER'S ORDER NO. W6501 DISTRIBUTOR'S ORDER NO. W830850

ITEM NO.	QTY.	PRODUCT	SPEC.	HEAT OR CODE NO.	REMARKS
		All items to be rough forged, heat treated & tested for specification			
1 *	6	Disc, sufficient to finish to 8.75" O.D. X 6.125" thick (Approx. 140 lbs.ea.) Part # BWCR-DIA-002	SA105 per ASME Sec.II Pt.A,Sec. III,Cl.3 '74 Ed. & W '75 Add Velan P.O.Spec. VEL-PS-009,Rev.6 & VEL-QCI-482,Rev.6	A708N	M/O 690S C458
2	5	Disc sufficient to finish to 9.40" O.D. X 8.25" thick (Approx. 216 lbs. each) Part # 7988-012-002 TAG: P.O.# W6501 Part # BWCR-DIA-002 (item 1) # 7988-012-002 (item 2)		A708N	M/O 691S C459

S. W. E. C. PQC INSPECTED 57

CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

HEAT NO.	C	MN	P	S	SI	CR	NI	MO			REMARKS
A708N	.26	.90	.007	.016	.21						I certify that the contents of this report are in compliance with the requirements of specifications ASME SA-105 Edition 1974 and addenda through WINTER '75 accepted as noted Velan Value Corp. W Sloan per Mgr. of Q. C. Documentation

FOR INFO ONLY

HEAT NO.	TENSILE	YIELD	ELONG % IN 2"	R.A. %	B.H.N.	V@+40°F CT	LAT EXP	REMARKS % SHEAR
A708N	81,250	50,500	26.5	60.6		40-39-37	.045-.040-.041	30-30-30

MATERIAL INCLUDED ON THIS TEST REPORT WAS MANUFACTURED UNDER ASME QUALITY CONTROL SYSTEM CERTIFICATE (MULTIPLE) NO. S-1980. EXPIRES DECEMBER 9, 1983.

ANI/AI REVIEW INITIAL MC DATE 10-21-82

We hereby certify the above results to be correct as contained in the records of the Company.

VEL INSP. 73 NOV 24 1980

Tanya Pollock

W830850

~~W830450~~ 11/3/83 MB

Velan Valve Corporation

L/F S/O # 0452-1 L/F M/O # 690S,691S

P.O. # W6501

Heat Treatment

1. Heat Treated at Lenape Forge
2. Charge Temperature = 140°F
3. Rate of Temperature Rise or Time to reach Holding Temperature = 8½ hrs.
4. Holding Temperature (Max./Min.) = 1620°min-1640°max.
5. Holding Time = 4½ hrs.
6. Cooling Mode = A.C.

S. W. E. C. PQC INSPECTED 51

Weld Repair - None

This is to certify that the contents of this report are correct and accurate and that all operations performed are in compliance with the requirements of the material Specification and the purchase order.

This is to certify that to the best of my knowledge the material shipped on this order has not come into contact with any mercury bearing instruments of mercury contaminants during its manufacture and processing.

Provisions of 10 CFR 21 apply.

MATERIAL INCLUDED ON THIS TEST REPORT WAS MANUFACTURED UNDER ASME QUALITY SYSTEMS CERTIFICATE (MATERIALS) NO. N-1950. EXPIRES DECEMBER 9, 1980.

ANI/AI REVIEW
INITIAL
DATE

FOR INFO ONLY

Tanya Pollock

GALT-BRITISH FORGE COMPANY

R344

204 BEVERLY STREET — CAMBRIDGE (GALT), ONTARIO N1R 3Z8

Velan Valve 8 pcs. 10½" O.D. x 8½" I.D. x 9½" thick

Specification ASME SA182 F6 P.O. No. WO6609 W830850

Dwg. No. Mill: Atlas Steels

Part No. CVDF-XCP-010

Certificate of Test

~~W830450~~ W830850 HEAT TREATED

CHEMICAL ANALYSIS

HEAT NO.	C	MN	P	S	SI	CR	MO	NI	CU			
J5169	.10	.50	.027	.006	.20	11.76		.38	FOR INFO			

PHYSICAL PROPERTIES

Heat No.	Yield Strength P.S.I. (.2% Offset)	Tensile Strength P.S.I.	Elong. %	Red. of Area %	Brinnel Hardness
T3030 J5169	61,100	85,700	32.1	74.7	183

Charpy V-Notch Impact Test at ° F

	Impact Ft. Lbs.	Lateral Expansion Mils	Shear Fracture %
1.			
2.			
3.			

HEAT TREAT DATA

1. Furnace No. 1.
2. Charge 200° F.
3. 515 °F/hr.
4. Hold 1750 °F/ 6½ hrs.
5. Air cool.
6. Furnace No. 3.
7. Charge 800° F.
8. 400 °F/hr.
9. Hold 1400 °F/ 7 hrs.
10. Air cool.

ASME B. & P.V. Code Section 2 Part A & Sect. 3 1974 Edition & Addenda through Summer 1975

I certify that the contents of this report are in compliance with the requirements of specifications

ASME SA-182-F6 Edition 1974

and addenda through WINTER '75

acepted as noted

Velan Value Corp.

per Mgr. of Q. C. Documentation

ANI/AI REVIEWED
INITIAL
DATE

INSPECTED - 67

1. Material Identification Marking: P.O. No. WO6609 Part No. CVDF-XCP-010 Grade SA182 F6 Heat No. J5169 G.B.F.
2. Material produced according to our Q.A. Manual approved by Velan Engr. Rev. level 5 - Nov. 28, 1980.
3. These forgings have not come into direct contact with mercury or any of its components, nor with any mercury containing devices during manufacture, testing, inspection or storage.
4. Weld Repair — None.

This is to certify that the contents of this report are correct and accurate and that all operations performed are in compliance with the requirements of the material specification and the purchase order.

VEL DISP. 73

JAN 15 1981

Galt-British Forge Company
Quality Assurance

Date Dec. 29, 1980

TECHNITROL CANADA Ltée/Ltd.

R 344

TESTING LABORATORIES — LABORATOIRE D'ANALYSES
2245 CHEMIN ST. FRANCOIS ROAD, DORVAL, QUEBEC H9P 1K3 — TEL. (514) 684-5084
TELEX 05-822554

~~W830450~~ W830850

CLIENT / CUSTOMER: Velan Inc.
2125 Ward Avenue
St. Laurent, Québec H4M 1T6
Attention: Mr. G. Trudeau

DATE: July 14, 1983
NO. DE LABORATOIRE / LABORATORY NO.: N-4514
NO. DE COMMANDE / CUSTOMER ORDER NO.: CE-1968
Req. P-20208

RAPPORT D'ESSAI
TEST REPORT

Laboratory No.: N-4514
Material: ASME SA-182 F6A Class 2
Heat No.: J-5169
Size of Impacts: 10mm X 10mm X 55mm

S.N.I.P.C. INSPECTED '57

CHARPY V-NOTCH TESTED @ +40°F

	Impact Test Value	Lateral Expansion	% Shear
1)	42 ft. lbs.	35 mils	10%
2)	32 ft. lbs.	28 mils	10%
3)	30 ft. lbs.	26 mils	10%

FOR INFO ONLY

ANI/AI REVIEW
INITIAL
DATE 10-22-83

:dl

D. Gordon, B.Sc.

VELAN

FORM VE-46-M-73A

W830850

~~W830450~~ 3/30/83 WB

CERTIFICATE OF NDT APPROVAL

PART	SERIAL NO: OR HEAT CODE		QUANTITY ACCEPTED	LIQUID PENETRANT		MAGNETIC PARTICLE	
				NDT INSPTR.	DATE	NDT INSPTR.	DATE
BODY	948		1			70	FEB 11 1983
BODY BUTTWELD	948		2 ENDS	86	28 APRIL 83		
BONNET (COVER) & BACKSEAT	W 2491		1			69	OCT 19 1981
DISC (WEDGE)	GD 265		1			79	DEC 29 1980
~~STEM~~ THRUST RING		J 5169	1			70	FEB 16, 1983
STUDS							
~~NUTS~~ BACKSEAT HARDFACING		E 3912-836	1	70	MAR 18 1981		
WELD SEATS AND GUIDE	FOR INFO ONLY	431P522	1	86	FEB 08 1983		
HARDFACE SEAT		PC-6V-520	1	68	JUL 07 1982		
HARDFACE DISC. (WEDGE)		E3912-836	1	79	DEC 29 1980		
WELD DISC TO UNION		431P522	1	86	FEB 16 1983		
309 DEPOSIT		23364A	1	86	FEB 08 1983		

INSP.: 70 68 86 69 79

LEVEL 2 CERTIFICATE OF PRODUCTION (HYDROSTATIC) TEST

LOW PRESSURE SEAT TEST 45PSI/15MIN 825 CC

TYPE OF TEST	SHELL	DISC/WEDGE	SEAT 'A' SIDE	SEAT 'B' SIDE	BACK SEAT	PACKING
DURATION MINS.	15	1	1/2		1	2
PRESSURE P.S.I.	3375	2250	1100		3375	3375
RESULT cc.	0	OK	D/A	.2ML	0	0

GAUGE #: G16-3687 G16-2857 G16-4401-G16-4343

TEST DATA FOR MOTOR — OPERATED VALVES		
OPERATOR TYPE SMB-1-25	RATED VOLTS 575	
SERIAL NO. 331987	DIFFERENTIAL PRESSURE 1100	
	FULL RATED VOLTS	[redacted]
TIME TO OPEN (SECS) 43 SECS		
TIME TO CLOSE (SECS) 43 SECS		
PEAK STARTING CURRENT (AMPS) OPEN 2.0	CLOSE 5.0	
NORMAL OPERATING CURRENT (AMPS) OPEN 2.0	CLOSE 2.0	
	OPEN	CLOSE
TORQUE SWITCH SETTING OPEN 2	CLOSE 2	
LIMIT SWITCH SETTING SET OPEN	SET CLOSED	

DATE OF TEST: APRIL 25 1983

TESTED BY: G. DUFFY

CERTIFIED BY: [signature]

CUSTOMER'S [redacted]

ANI/AI REVIEWED
INITIAL
DATE

ULTRASONIC INSPECTION REPORT

TRUTOM

W830850 No: W83-011

~~W830450~~ (1/30/83 WS) DATE: 1/18/83

FORGING ☒ WELDMENT ☐ OTHER (SPECIFY) PAGE 1 OF 1

PRIME SELLER	CUSTOMER	P.O. NO.	ITEM
VELAN ENGINEERING	MAGELLA MOHAWK	P3-7026-N	22

VALVE SIZE	VALVE DESCRIPTION	RATING	PART	TYPE OR SHAPE
8"	SWING CHECK ☐ GATE ☐ GLOBE ☒ PISTON CHECK ☐	900#	BODY	SOLID ☒ HOLLOW ☐ RING ☐

STAGE OF MANUFACTURING AT TEST	MATERIAL TYPE	PART NO.
AS FORGED ☐ ROUGH MACHINED ☒ FINISH MACHINED ☐	C/S ASTM/ASME A105	7908-018-002

NDE PROCEDURE NO.	TECHNIQUE GUIDE NO.	HEAT NO.	CUSTOMER S.O.
T77-32 REV. 0	164	J9865	15PS6L-18542

EQUIPMENT KRAUTKRAMER USIP 10W ☒ USIP-11 ☐

CALIBRATION DATA AT TIME OF TEST

COUPLANT SWAFAGA ☐ CELLULOSE PASTE ☒

	RADIAL SCAN COMPRESSIONAL ☒	RADIAL SCAN SHEAR ☒	AXIAL SCAN COMPRESSIONAL ☒
TRANSDUCER	TYPE AUTO-ULD SFZ / SIZE 3/4" ϕ / FREQ. 2.25 MHZ	TYPE AERO TECH GAMMA / SIZE .5x1 / FREQ. 1 MHZ	TYPE AUTO ULD SFZ / SIZE 3/4" ϕ / FREQ. 2.25 MHZ
CALIBRATION STANDARD	1/8" FBH ☐ 1/4" FBH ☐ 8R ☒	NOTCH 1" x 3% 60°V ☒ SQ. ☐	1/8" FBH ☐ 1/4" FBH ☐ 8R ☒

PART IDENT.	ACCEPT	REJECT	RADIAL SCAN COMPRESSIONAL: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	RADIAL SCAN SHEAR: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	AXIAL SCAN COMPRESSIONAL: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER RESOLUTION	REMARKS
948	✓		10	50	3	3	5.8	9"	OFF	10	60	2	3	3.2	8"	OFF	50	50	3	3	5.0	27	OFF	NAD

NAD - NO APPARENT DEFECTS

FIG # - SEE FIGURE NO.

AI REVIEW
INITIAL RRL
DATE 1/18/83

W. VELAN INC. P.Q.C. INSPECTED

I CERTIFY THAT THIS REPORT OUTLINES THE RESULTS OF AN INSPECTION PERFORMED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND/OR PROCEDURE.

Kevin J Buchanan II 1/18/83
ON BEHALF OF TRUTOM ASNT LEVEL DATE

INSPECTOR Kevin J Buchanan ASNT LEVEL: II

CUSTOMER INSPECTION DATE

ULTRASONIC INSPECTION REPORT

TRUTOM

W830850

No: 2050-515

~~W830450~~ 5/31/93 WB

DATE: DEC. 9/90

FORGING ☑ WELDMENT ☐ OTHER (SPECIFY)

PAGE 1 OF 1

PRIME SELLER	CUSTOMER	P.O. NO.	ITEM
VELAN ENGINEERING	NIAGARA MOHAWK	P3-7026 N	2.2

VALVE SIZE	VALVE DESCRIPTION	RATING	PART	TYPE OR SHAPE
8"	SWING CHECK ☐ GATE ☐ GLOBE ☑ PISTON CHECK ☐	900#	BONNET	SOLID ☑ HOLLOW ☐ RING ☐

STAGE OF MANUFACTURING AT TEST	MATERIAL TYPE	PART NO.
AS FORGED ☐ ROUGH MACHINED ☑ FINISH MACHINED ☐	ASTM/ASME SA 105	7955-012-002

NDE PROCEDURE NO.	TECHNIQUE GUIDE NO.	HEAT NO.	CUSTOMER S.O.
T77-32 REV. 0	152	A703N	15PEGL 05200

EQUIPMENT KRAUTKRAMER USIP 10W ☑ USIP-11 ☐

CALIBRATION DATA AT TIME OF TEST

	RADIAL SCAN COMPRESSIONAL ☑	RADIAL SCAN SHEAR ☐	AXIAL SCAN COMPRESSIONAL ☑
COUPLANT: SWAFAGA ☐ CELLULOSE PASTE ☑			
TRANSDUCER	TYPE AUTO-IND SF2 / SIZE 3/4" / FREQ. 2.25	TYPE / SIZE / FREQ.	TYPE AUTO. IND SF2 / SIZE 3/4" / FREQ. 2.25
CALIBRATION STANDARD	1/8" FBH ☐ 1/4" FBH ☐ BR ☑	NOTCH x 60°V ☐ SQ. ☐	1/8" FBH ☐ 1/4" FBH ☐ BR ☑

PART IDENT.	ACCEPT	REJECT	RADIAL SCAN COMPRESSIONAL: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	RADIAL SCAN SHEAR: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	AXIAL SCAN COMPRESSIONAL: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	REMARKS
W2491	1	0	10"	50	0	5	5.8	9½	51			N/A					10"	38	0	5	5.8	9¾	51	NAD

N.I.T.C. PQC INSPECTED 51

ANI/AI REVIEW
INITIAL
DATE 12-21-93

I CERTIFY THAT THIS REPORT OUTLINES THE RESULTS OF AN INSPECTION PERFORMED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND/OR PROCEDURE.

INSP/CPR. R. SCRIANO ASNT LEVEL: III

R. Scriano — III — DEC. 9/90

ON BEHALF OF TRUTOM — ASNT LEVEL — DATE

CUSTOMER INSPECTION — DATE

ULTRASONIC INSPECTION REPORT

W830850 life 11-7

TRUTOM No: W 30-529

DATE: DEC. 9, 83

~~W830450~~ 5/24/83 WB

FORGING ☑ WELDMENT ☐ OTHER (SPECIFY) PAGE 1 OF 1

PRIME SELLER	CUSTOMER	P.O. NO.	ITEM
VELAN ENGINEERING	NIAGARA MOHAWK	PS-7024-N	22

VALVE SIZE	VALVE DESCRIPTION	RATING	PART	TYPE OR SHAPE
8"	SWING CHECK ☐ GATE ☐ GLOBE ☑ PISTON CHECK ☐	900#	DISC	SOLID ☑ HOLLOW ☐ RING ☐

STAGE OF MANUFACTURING AT TEST	MATERIAL TYPE	PART NO.
AS FORGED ☐ ROUGH MACHINED ☑ FINISH MACHINED ☐	ASTM/ASME SA 105	7948-023-002

NDE PROCEDURE NO.	TECHNIQUE GUIDE NO.	HEAT NO.	CUSTOMER S.O.
T77-32 REV. 0	152	A708N	15 PSEL-6542

EQUIPMENT KRAUTKRAMER USIP 10W ☑ USIP-11 ☐

CALIBRATION DATA AT TIME OF TEST

	RADIAL SCAN COMPRESSIONAL ☑	RADIAL SCAN SHEAR ☐	AXIAL SCAN COMPRESSIONAL ☑
COUPLANT	SWAFAGA CELLULOSE PASTE ☑		
TRANSDUCER	TYPE AUTO. IND. SFZ; SIZE 3/4; FREQ. 2.25	TYPE; SIZE; FREQ.	TYPE AUTO. IND. SFZ; SIZE 3/4; FREQ. 2.25
CALIBRATION STANDARD	1/8" FBH ☐ 1/4" FBH ☐ 8R ☑	NOTCH ___ X 60°V ☐ SQ. ☐	1/8" FBH ☐ 1/4" FBH ☐ 8R ☑

PART IDENT.	ACCEPT	REJECT	RADIAL SCAN COMPRESSIONAL: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	RADIAL SCAN SHEAR: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	AXIAL SCAN COMPRESSIONAL: SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	HF FILTER (RESOLUTION)	REMARKS: NAD - NO APPARENT DEFECTS; FIG # - SEE FIGURE NO.
225	/	0	10	48	0	3	6.5	4⅜	31			N/A					10	56	0	3	6.5	7	31	NAD
GD 265																								

S.W.I.E.C. PQC INSPECTED 57

ANI/AI REVIEW INITIAL [illegible] DATE 12-22-83

I CERTIFY THAT THIS REPORT OUTLINES THE RESULTS OF AN INSPECTION PERFORMED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND/OR PROCEDURE.

INSP/OPR. [signature] ASNT LEVEL: III

[signature] III DEC. 9/83

ON BEHALF OF TRUTOM · ASNT LEVEL · DATE

CUSTOMER INSPECTION DATE

ULTRASONIC INSPECTION REPORT

W830850

TRUTOM

No: W83-041

DATE: 2-16-83

~~W830450~~ 9/30/83 W3

FORGING ☒ WELDMENT ☐ OTHER (SPECIFY) PAGE 1 OF 1

PRIME SELLER	CUSTOMER	P.O. NO.	ITEM
VELAN ENGINEERING	NIAGRA MOHAWK	P3-7026-N	22

VALVE SIZE	VALVE DESCRIPTION	RATING	PART	TYPE OR SHAPE
8"	SWING CHECK ☐ GATE ☐ GLOBE ☒ PISTON CHECK ☐	900#	THRUST RING	SOLID ☐ HOLLOW ☐ RING ☒

STAGE OF MANUFACTURING AT TEST	MATERIAL TYPE	PART NO.
AS FORGED ☐ ROUGH MACHINED ☒ FINISH MACHINED ☐	F-6 ASTM/ASME SA 182	8138-012-010

NDE PROCEDURE NO.	TECHNIQUE GUIDE NO.	HEAT NO.	CUSTOMER S.O.
T77-32 REV. 0	151	JS169	15PSGL-15623

EQUIPMENT KRAUTKRAMER USIP 10W ☒ USIP-11 ☐

CALIBRATION DATA AT TIME OF TEST

	RADIAL SCAN COMPRESSIONAL ☒	RADIAL SCAN SHEAR ☒	AXIAL SCAN COMPRESSIONAL ☒
COUPLANT: SWAFAGA ☐ CELLULOSE PASTE ☒			
TRANSDUCER: TYPE / SIZE / FREQ.	AUTO IND SFZ / 3/4" ø / 2.25 MHZ	REED TECH GAMMA / 1/2" x 1" / 2.25 MHZ	AUTO IND SFZ / 3/4" ø / 2.25 MHZ
CALIBRATION STANDARD	1/8" FBH ☐ 1/4" FBH ☐ BR ☒	NOTCH 1" x 3/16" 60°V ☒ SQ. ☐	1/8" FBH ☐ 1/4" FBH ☐ BR ☒

PART IDENT.	ACCEPT	REJECT	SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	I/F FILTER (RESOLUTION)	SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	I/F FILTER (RESOLUTION)	SCALE (IN.)	GAIN CALIB. dB	SUPPRESSION	PULSE ENERGY	MATERIAL CONTROL KM/SEC	DEPTH RANGE (IN.)	I/F FILTER RESOLUTION	REMARKS
W3041	X		25	56	OFF	3	58	1"	R1	5	58	OFF	3	32	125	R1	25	50	OFF	3	58	1"	R1	NAD - NO APPARENT DEFECTS. FIG 4 - SEE FIGURE NO.

S.W.E. P.R.C. INSPECTED

ANI/AI REVIEW
INITIAL
DATE 10-21-83

I CERTIFY THAT THIS REPORT OUTLINES THE RESULTS OF AN INSPECTION PERFORMED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND/OR PROCEDURE.

INSP/OPR. K. BUCHANAN ASNT LEVEL: II

Kevin D Buchanan II 2-16-83

ON BEHALF OF TRUTOM ASNT LEVEL DATE

CUSTOMER INSPECTION DATE

W830850

5.0 CERTIFICATION OF DESIGN REPORT DR-1158, REV. 2

This Design Report is hereby certified that all the conditions of the Design Specification NMP2-P304R, Rev. 2, Addenda 4 have been met in accordance with the ASME Boiler and Pressure Vessel Code, Article NB-3500, 1974 Edition with Addenda through Winter 1975.

S. W. E. C. PQC INSPECTED 57

Report Prepared By: R. Krishnan

R. Krishnan 20 Sept. '83

Report Certified By: S. Isbitsky, Eng.

Approved by:
S. ISBITSKY, Chief Stress Analyst:
Signature:
Date: Sept 21, 1983

INGÉNIEUR · ENGINEER
A. S. ISBITSKY
PROVINCE OF QUEBEC

Independent Review & Certification By: P.O. Velan, Eng.

FOR INFO ONLY

ANI/AI REVIEW
INITIAL JHC
DATE 10-27-83

INGÉNIEUR · ENGINEER
P. VELAN
PROVINCE OF QUEBEC

~~RELIANCE ELECTRIC COMPANY~~ RELIANCE ELECTRIC COMPANY

~~HWY. 107~~ HWY. 107

Madison, Indiana

W-1722

REPORT OF ROUTINE TESTS

~~Induction Motor~~ Inductor Motor

~~W830450~~ W830850

STATION: Nine Mile Pt. Nuc. Sta.-Unit #2

NIAGARA MOHAWK POWER CORP.

P.O. No.: NMP2P304R

~~REPORT OF ROUTINE TESTS~~

EQUIPMENT: (1)-SMB-1-25

S/N-331987

2WCS*MOV-200

Purchaser

Limitorque Corporation
5114 Woodall Road
Lynchburg, Va. 24502

(Rep. inlist82-CFK)

Date of Test ...3-23-79

Manufacturer's Order No. 204322994-10

Purchaser's Order No. 3D1236 ~~F~~

Style No. 713154

Special Markings 3D1236-F

NAMEPLATE DATA

Hp	Service Factor	Rpm	Phase	Hertz	Volts	Amperes
1.6	1.00	1700	3	60	575	3.2

Type	Frame	(Temp Rise By Method Indicated) (Ambient Temp and Insulation Class)	Time Rating	Design Letter	Code Letter for Locked Kva./HP
P	R56	60°C CLASS RH	15min	—	—

TEST CHARACTERISTICS

SERIAL NUMBER	NO LOAD VOLTS	HERTZ	RPM	AMPERES			LOCKED ROTOR (SINGLE PHASE) VOLTS	HERTZ	AMPERES			SOLID-ROTOR OPEN CIRCUIT VOLTAGE	HIGH POTENTIAL TEST VOLTAGE
1.	575	60	1791	2.2			575	60	17.0				2500

NOV. 16

S.W.E.C. PQC INSPECTED

S.W.E.C. PQC INSPECTED

Carl F. Koenig

Sales Engineer-Limitorque

11/18/82 Copy

NOTES: Data on test from THIS motor. (this or duplicate) 3-23-79

Approved by Warren R. Watson

Date 1/29/82

LIMITORQUE TEST DATA

Order No. [redacted]

Unit Size SMB-1-25

Ref.: P3-[redacted]26-IT22

Cust. P.O. No. W[redacted]2

Filed → W830850

TELECOPY TO WILLISTON - ATTN.: BILL BLEAU

Parameters	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Notes
T.S.SETTING	1	1½	2	2½	3	3½	4	CLOSE
THRUST OUTPUT	12,700	23,500	32,000					POUNDS
VOLTAGE	460	460	460					VOLTS
CURRENT	2.7	5.0	8.7					AMPS
CYCLES	60	60	60					HERTZ
460 volts NORMAL SETTING	2	LOAD 32,000 #	VOLTS 460	AMPS 8.7		HERTZ 60		
460 volts MAXIMUM SETTING	2¼	LOAD 36,500 #	VOLTS 460	AMPS 11.0		HERTZ 60		
632 volts STALL VOLTAGE	110 %	LOAD 72,500 #	VOLTS 633	AMPS 22.5		HERTZ 60		

THRUST TEST PROCEDURE REV. 1 DATED 2-21-79

ALL TEST VALUES ARE BEING TAKEN FROM RECORDING STRIP CHARTS, AND ARE KEPT ON FILE.

Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station-Unit #2
P.O. #NMP2-P 304 R
Valve Motor Operator
Mark # 2 WCS-XMOV-200
Limitorque Corporation
5114 Woodall Road
Lynchburg, Va. 24502

S.W.E.C. PQC INSPECTED 27 MAR 29 1982

W.A. Moore

H.A. Moore
Test Lab. Manager

Serial No. 331987

P3-7026-M
Items 22

Tested by M.T./GA.

ATTN.: BILL BLEAU - WILLISTON

Title Test Lab. Tech.

P1-9726-N
P3-7026-N

cc: B. BLEAU
R. BOSE
S. MIKHAIL

W830850

THIS MUST BE SUBMITTED AS PART OF THE DATA PACKAGE. RC 10/18

VELV4LVE WIVT

WU INFOMASTER 1-8137671292 10/17/83
TWX STONEWBST CHI
ZCZC 21 CHERRY HILL, NJ 26234 10-17-83
TLX 93-4013 VELVALVE WIVT
VELAN VALVE CORPORATION
ATTN: R. LEE
GRISWOLD INDUSTRIAL PARK
WILLISTON, VT 25495

BT
PURCHASE ORDER NO. NMP2-P304R
MOTOR OPERATOR CARBON STEEL VALVES-CATEGORY I
NINE MILE POINT NUCLEAR STATION-UNIT 2
NIAGARA MOHAWK POWER CORPORATION

THIS ENGINEER'S SHIPPING RELEASE NOTICE SIGNIFIES THAT THE EQUIPMENT LISTED BELOW IS TECHNICALLY ACCEPTABLE FOR SHIPMENT IN ACCORDANCE WITH ADDENDUM 4 TO REV.2:

P.O. ITEM	MARK NO(S)
5	2MSS/MOV111
22	2WCS/MOV202
75	21CS/MOV143
76	21CS/MOV116
78	2ASS/MOV148
84	21CS/MOV170

FOR INFO ONLY

S. W. E. C. PQC INSPECTED 57

ITEM 44 CANNOT BE RELEASED AT THIS TIME, SINCE SWEC HAS NOT RECEIVED E SEISMIC REPORT AND HAS NOT COMPLETED REVIEW OF THE DESIGN REPORT NOR H VELAN PERFORMED A SATISFACTORY OPERABILITY TEST ON THIS SIZE AND DESIG VALVE. PLEASE EXPEDITE SUBMITTAL OF THE SEISMIC REPORT AND PERFORMANE OF THE OPERABILITY TEST.

THIS NOTICE DOES NOT CONSTITUTE A RELEASE OF THE SELLER FROM THE PERFO MANCE OF ANY REQUIREMENT OF THE SPECIFICATION. IT RECOGNIZES, HOWEVER THAT THE SELLER IS PURSUING COMPLETION OF REPORT SUBMITTAL AND ADDRESS

J.J.PANCHISON-PRINCIPAL PIPING ENGINEER
STONE AND WEBSTER ENGR. CORP.
TWX 712-992-0147 STONEWBST CRL
MESSAGE 12177/17996

NNNN
/ REPLACES CHAR(S) ON SENDERS KEYBD UNAVAIL ON YOURS

1443 EST

V LVALVE WIVT

VELAN ENGINEERING COMPANIES	Q.C. PROCEDURE
WALL THICKNESS INSPECTION W830850	VEL-QC-663A REV.:

VALVE TYPE	P/B Globe	BODY MIN. WALL THICKNESS REQ'D (t_m)	.880
VALVE SIZE	8"	BONNET MIN. WALL THICKNESS REQ'D (t_m)	
PRESSURE RATING	900#	BONNET MIN. WALL THICKNESS REQ'D (t_1)	
NUCLEAR CLASS	1		
MATERIAL	C/S		
BODY SERIAL NO.	948		
BONNET SERIAL NO			

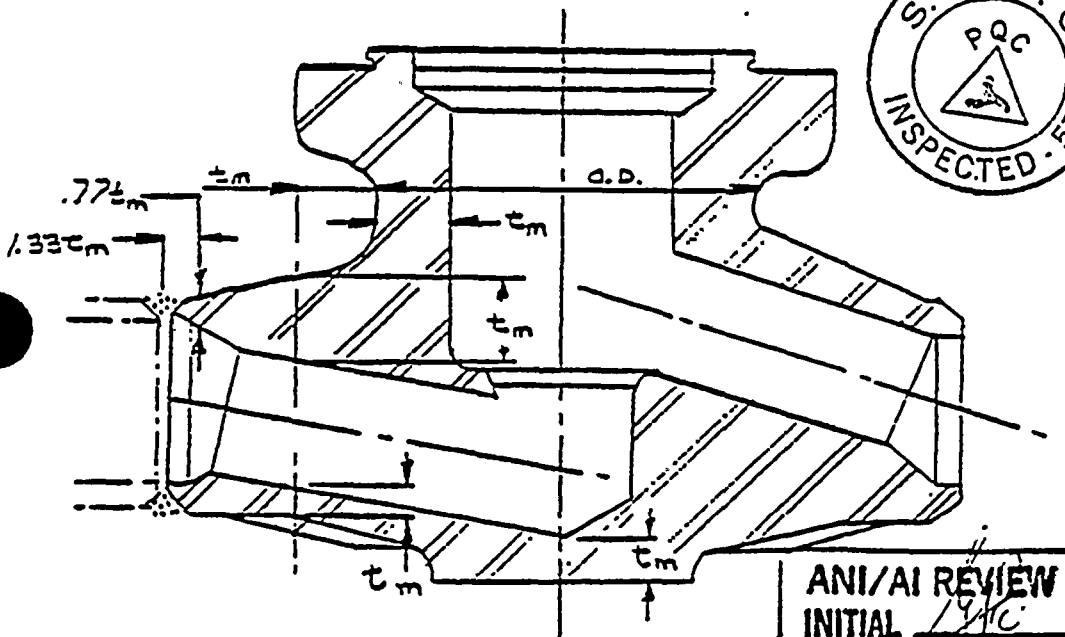
B11.3580 - B11.3585 - B22.4449

~~W830450~~ 8/31/83 WB

PRESSURE SEAL CONFIGURATION SHOWN

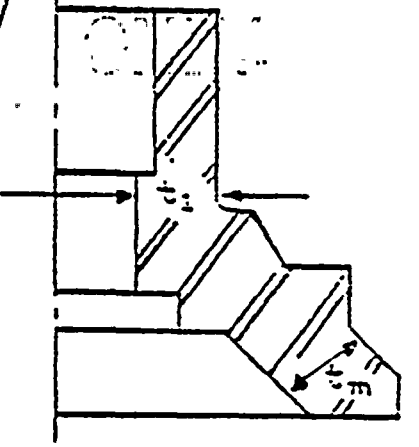
S.W.E.C. PQC INSPECTED 57

FOR INFO ONLY



GLOBE VALVE BODY

ANI/AI REVIEW
INITIAL VIC
DATE 10-21-83



GLOBE VALVE BONNET

ACTUAL MEASUREMENTS (FINISHED/MACHINED CONDITION)

	t INLET (t_m)	t OUTLET (t_m)	t NECK (t_m)	t BOWL (t_m)	t BONNET (t_m)	t BONNET (t_1)	t SOCKET (.77 t_m) INLET	t SOCKET (.77 t_m) OUTLET
A	2.812	1.500	2.875	1.312			.995	.985
B	1.437	4.250	3.062	1.312			.995	.985
C	1.562	3.250	3.062	1.312			.995	.985
D	2.937	1.500	2.875	1.312			.995	.985

Values are lowest measured in each four quadrants. For end connections, quadrants start at top and progress clockwise, facing the end. For neck and bonnet, quadrants start at side over manufacturer's symbol and progress clockwise facing down.

INSPECTOR (VEL INSP. 74)	AUG - '83 DATE
ACCEPTABLE 1	REJ. 0

FORM #VL-99-04-80

W2491

VELAN ENGINEERING COMPANIES	Q.C. INSTRUCTION
Instruction for the measurement inspection of Nucelar Valve minimum wall thickness	VEL-QC-665A Section III

1. SCOPE

W830850 Nia Mohawk P3-7026-N Item 22 ~~W830450~~

Bonnet Wall Thickness for Pressure Seal

Valves 3" and larger - Nuclear Class 1, 2 & 3

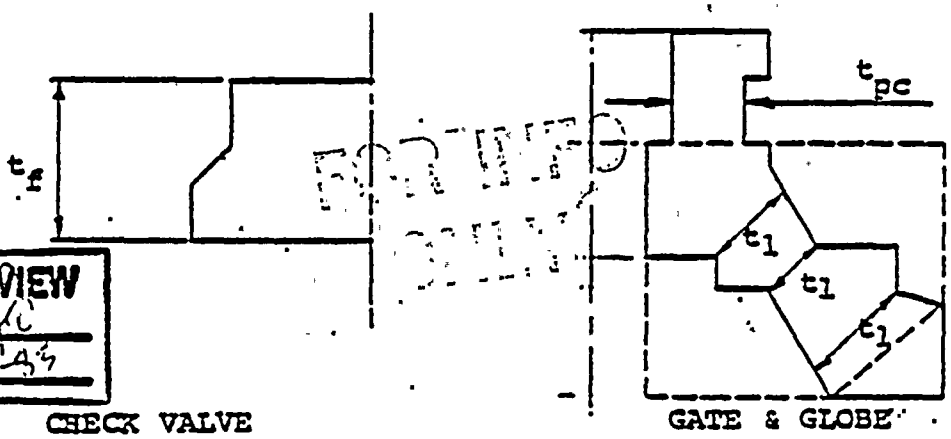
2. MEASUREMENTS OF WALL THICKNESS

The thickness t_f, t_1 and t_{pc} (derived from B16.5) shall be measured as shown in the sketch below.

Wall thickness t_1 shall be measured and the lowest value recorded. These measurements shall be made within the dotted boundary shown. The valves shown in the table below are the mimimum required values

S/N W2491

Y22-3863



CHECK VALVE GATE & GLOBE

ANI/AI REVIEW
INITIAL JWC
DATE 10-21-87

S. W. E. C. PQC INSPECTED 57

Valve Size	600 - 900 LBS.			1500 LBS.		
	CHECK	GATE & GLOBE		CHECK	GATE & GLOBE	
	t_f	t_1	t_{pc}	t_f	t_1	t_{pc}
(inch NPS)	(inch)	(inch)	(inch)	(inch)	(inch)	(inch)
3	.406	.406	.169	.625	.625	.299
4	.500	.500	.196	.75	.75	.346
6	.719	.719	.248	1.094	1.094	.438
8	.875	.875	.248	1.406	1.406	.645
10	1.063	1.063	.365	1.719	1.719	.645
12	1.25	1.25	.392	2.00	2.00	.6915

3. RECORD

Valve Size: 8" Type: P.S. Rating: 900# lbs

Actual lowest measurements: t_f ____ t_1 1.425 t_{pc} .965 ok

(as applicable)

VEL QCR 78

NOV 25 '87

Velan Valve Corporation
Williston Vermont 05495

VELAN

~~W830450~~ 5/30/93 WB

WELD RECORD

W830850

VELAN VALVE CORPORATION hereby certifies the following excerpts from its Weld Record Book:

STONE & WEBSTER JOB #: 12177

CUSTOMER: NIAGARA MOHAWK POWER CORPORATION

VELAN ORDER #: P3-7026-D

ITEM #: 22

VELAN SERIAL #: 850

STONE & WEBSTER P.O. #: NMP2- P304R

STONE & WEBSTER SPEC. #: NMP2- P304R

FOR INFO ONLY

P.Q.C. INSPECTED 57

WORK COMPLETED	WELD PROCEDURE	W F M HEAT CODE	WELDER NAME	SYMBOL
1. Seat Welds to Body	VEL-P-631 REV 5	431P522	G. WALTON	WA 59
2. Backseat Seal Weld				
3. Tack Weld Disc & Union	VEL-P-631 REV 5	431P522	C. BLOW	WA 66
4. Drain Pipe to Body				
5. Leakoff Pipe to Bonnet				
6. Wedge Guide to Body				

ANI/AI REVIEW
INITIAL
DATE 10-21-93

W Bleau
Q.C. DOCUMENTATION MANAGER

ALLOY RODS DIVISION
CHEMETRON CORPORATION
P.O. BOX 37 HANOVER, PA 17331 717/637-8911

CERTIFICATE OF ANALYSIS

W218

CERTIFIED MATERIALS TEST REPORT

[redacted]an Valve Co.
Ave. C. Griswold Ind. Park
REF: P.O. C-16078
Williston, VT 05495

Customer Order No. C-16078
Order No. 210569-1 W830850
Shipped: ~~W830450~~

This Material Conforms to Specification ASME SFA 5.18 Sec. II Part C & ASME B&PV Sec. III, NB-2400 1980 Ed. thru Wats 198 Add. VEL-PS-0-28 Rev. 0. 10 CFR Part 21 applies.

Trade Name or Trademark: Spoolarc 85
Diameter Size: 3/32"
Weight: 1,990 lbs.
Lot Number:
Heat Number: 431P522

Type: ER70S-3
Test No. 8028
X-Ray Satisfactory

FOR INFO ONLY

Type Steel A-285

Carbon	.10
Manganese	1.11
Chromium	.02
Nickel	.02
Silicon	.70
Columbium+ Tantalum	
Molybdenum	.01
Tungsten	
Copper	.13
Titanium	
[redacted]osphorus	.012
[redacted]Sulphur	.016
[redacted]anadium	.01
Cobalt	
Ferrite:	

Test No.	Full	Split	Volts	Amps
Tensiles & Impacts	--	5	18	250 DC-

Test Results:	As Welded
Yield	69,300
Tensile	83,100
Elongation	42.0%
Red. of Area	77.4%

Charpy V-Notch Impacts Tested @ 0° F.
Ft. Lbs. 65-214-144
Lat. Exp. 51-86-87
% Shear 20-100-60

Tensile Specimen .358"
Impact Specimen .394" x .394"

P.Q.C. INSPECTED - 57

Location & Orientation of Charpy-V-Notch/Tensile Specimens is T/A/W ASME NX-2322 and/or AWS/SFA specifications as applicable.

Quality Systems Certificate No. QSC-221
Expiration Date: September 8, 1984

State of Pennsylvania }
County of York } SS

The undersigned certifies that the contents of this report are correct and accurate and that all operations performed by the undersigned or sub contractors are in compliance with requirements of the material specification and ASME Boiler and Pressure Vessel Code Section III Division I Subsection NCA-3800

Subscribed and sworn to before me this 17th day of May, 1982

SEAL Kay Addison
Notary Public

My Commission expires: 11/22/82

ALLOY RODS DIVISION
Chemetron Corporation

BY J. L. [redacted]
Q. C. [redacted]

Para. 6 does not apply.
THIS MATERIAL IS CERTIFIED TO BE FREE OF ANY MERCURY CONTAMINATION.

ANI/AI REVIEW
INITIAL LAC
DATE 9-2-82

I certify that the contents of this report are in compliance with the requirements of specification ASME SFA 5.18 SUPERVISOR 1974 and addena through WINTER '75 except as noted

VELAN VALVE CORP.

WBlean
Per Mgr. of Q. C. Documentation

82/05/27

Techalloy Maryland, Inc.

The Reid - Avery Division W246

Dundalk, Baltimore, Md. 21222

QUALITY ASSURANCE TEST REPORT

Ammended 12/15/82

DATE: 12/10/82

SOLD TO: Velan Valve Corporation
2125 Avenue Ward
Montreal, Quebec
Canada H4M 1T6

P.O. NO.:- C16322

SHIPPED TO: Velan Valve Corp
Avenue C
Griswold Industrial Park
Williston, Vermont 05495

DATE SHIPPED: 12/10/82

W830850
~~W830450~~

P.O. NO.:-

SPECIFICATION: Chemistry to VEL-PS-002-Rev. 4; ASME Sect. III '80 Ed. W W '80 Add. & Sect. II Part C SFA 5.4

ITEM	POUNDS	SIZE	TYPE	LOT NO.	HEAT NO.
1.	1000	3/16	309-16 (10# cans)	23364A	97571
2.					
3.					

ACTUAL CHEMICAL ANALYSIS OF ~~xxxxxx~~ WELD METAL

ITEM	C	Mn	P	S	Si	Cr	Ni	Mo	Cu	V	Ti	Nb + Ta
1.	.025	.85	.018	.009	.36	23.41	13.27	.07	.05	.05	.025	.14
2.												
3.												

ADDITIONAL TEST RESULTS

A.S.M.E. QUALITY SYSTEM CERTIFICATE (MATERIALS) QSC-395 EXP. JANUARY 7, 1983

TESTS PERFORMED WITH: N/A

X-RAY: Satisfactory

STRESS RELIEVED N/A HRS. @ °F.

	AS WELDED PLATE NO. 55N	STRESS RELIEVED PLATE NO. N/A
YIELD POINT, PSI	64,450	
TENSILE STRENGTH, PSI	84,450	
ELONGATION IN 2" -	41%	
REDUCTION OF AREA -	N/A	
IMPACTS	PLATE NO. N/A @ °F ft. lbs.	PLATE NO. N/A @ °F ft. lbs.

S.W.E.C. PQC 3 INSPECTED 57

This material has been alloy identity tested.
Ferrite by De Long - 12%

THIS IS TO CERTIFY THAT THIS MATERIAL IS FREE FROM METALLIC MERCURY, RADIUM OR ALPHA PARTICLE CONTAMINATION.

I certify that the contents of this report are in compliance with the requirements of specifications ASME SFA 5.4 Edition 1974 and addenda through WINTER '75 acepted as noted

Velan Value Corp.

per Mgr. of Q. C. Documentation

VEL INSP. 73

JAN 06 1983

I certify the chemical analysis and physical or mechanical test results reported above are correct as contained in the records of the company.

ANI/AI REVIEW
INITIAL JK
DATE 12-21-82

MATERIAL MANUFACTURERS TEST REPORT TRANS. #1 00173

NM-908 BWB

9-24-81 BWB

Heat Code: RB-E

CUSTOM ALLOY CORPORATION

ROUTE 513, CALIFON, N. J. 07830

PRODUCT DESCRIPTION	CUSTOMER DATA
Item L/R 45° Elbow	Name ITT Grinnell Industrial
Size 8" NPS	P.O. No. KER-14731
Wall S/160 (.906)	Tag No. KER-14731 Niagara Mohawk
Grade WP-B Smls.	Job No. N-16225-3 TAG: NM-1003-6

Specifications: ASME SA234 WP-B Seamless, Section III Class 1, 1974 Edition No Addenda Ends per NM-D2 NM-001 Rev. 3 & NM-005 Rev. 3 ANSI B16.9 applies.

U.S.N.I. S.W.E.C. CERTIFIED 103

CHEMICAL ANALYSIS

	C	Mn	P	S	Si	Cr	Ni	Mo	Cb	
Ladle	.26	.95	.01	.02	.26					
Check										

MECHANICAL PROPERTIES

Yield Strength .2% Offset	Tensile Strength PSI	Elong. in 2" Trans.	Red of Area %		Starting Material Control No.	Starting Material conforms to the chemical and tensile requirements of
54,020	85,628	28.0			CAC 12617	ASME SA-106

MILL HEAT NO: 60786 Phoenix Steel Corp.

REMARKS:
(A) Heat Treatment: Normalized at 1650°F ± 25°F, held at temperature for 1 hr/inch, then cooled in still air. (75-HT-4 Rev.2)
(B) Hardness: BHN 127
(C) U.T. Procedure: 78-UTFF-6 Rev. 2 - Satisfactory
(D) We certify this material is in compliance with NB-2550.
(E) We certify that this order is in compliance with 10 CFR-21.
(F) Charpy Impact test in accordance with NB-2300 and 77-CI-1 Rev.1 testing temperature at +40°F

Sample No.	Ft. Lbs.	Ave.	Lateral Exp.	Shear Fracture
1	37	42	35	40
2	41		39	40
3	49		42	50

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this _____ day of _____ 19__

NOTARY PUBLIC OF NEW JERSEY
My Commission Expires

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE SEP. 21 1981
SHEET 1 OF 3

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

5F082581-1

8/27/81

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

HEAT CODE: RB-E

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

MATERIAL MANUFACTURERS TEST REPORT
Continuation Sheet

NM BWF-908

CUSTOMER	P.O. NO.	JOB NO.
ITT Grinnell Industrial	KER-14731	N-16225-3

REMARKS: (F) Continued: Orientation & Location: The specimens were removed with the longitudinal axis parallel to the longitudinal axis of the sample with the axis of the Vee perpendicular to the surface.

(G) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA-3800 as audited and approved by ITT Grinnell on 5/12/81, Our Q.A. Manual dated 4/1/81.

INSPECTED S.W.E.C. PQC 103

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
✱APPROVED✱
T. C. WILSON
DATE SEP. 21 1981
SHEET 2 OF 3

Q.A. AUDITED
By:
Date: 8-27-81

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

____ day of _____ 19____

NOTARY PUBLUC OF NEW JERSEY
My Commission Expires _____

5F082581-1
8/27/81

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

21589 9/80

NM BWR-908

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7[illegible] • TWX: 510-235-3362 • TELEX: 13-6456

CAC NO: 12617

HEAT NO: RB-E

ULTRASONIC TEST REPORT

ITT Grinnell	Mark Lidwell	8/26/81
CUSTOMER	INSPECTOR/LEVEL II	DATE
N-16225-3R1 WP-B		
JOB NO. ALLOY	EXAMINER/LEVEL III	DATE
L/R 45° Elbow 8" S/160		
ITEM SIZE	CUSTOMER APPROVAL	DATE

ASNI S.W.E.C. PQC FECTED-103

PROCEDURE: 78-UTFF-6, Rev. 2

Krautkramer USIP 11	Exosen 14
TEST EQUIPMENT	COUPLANT
1" x ½" / Gamma / 2½ MHz	
TRANSDUCER / TYPE / FREQUENCY	
5% Notch	
CALIBRATION STANDARD	
80%	45°
REFERENCE LEVEL (%)	SOUND ANGLE – DEGREES

The following material has been inspected and accepted in accordance with the above procedure:

2 fittings accepted

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE SEP. 21 1981
SHEET 3 OF 3

MATERIAL MANUFACTURERS TEST REPORT 00173

NM Buffalo

Page 1 of 2 Heat Code: QS-L

CUSTOM ALLOY CORPORATION

ROUTE 513, CALIFON, N. J. 07830

N.E.C. S. PAC INSPECTED: 103

PRODUCT DESCRIPTION	CUSTOMER DATA
Item L/R 90° Elbow	Name ITT Grinnell Industrial Piping
Size 8" NPS	P.O. No. KER-14770 P.N. NM-1003-5
Wall S/160 (.906)	Tag No. KER-14770 Niagara Mohawk-Marble Hill II
Grade WP-B Smls.	Job No. N-16310-1

Specifications: ASME SA234 WP-B Seamless Section III Class 1, 1974 Edition
No Addenda and NM-001 Rev. 3 & NM-005 Rev. 3 Ends per NM-D-2

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE AUG 24 1981
SHEET 1 OF 3

CHEMICAL ANALYSIS

	C	Mn	P	S	Si	Cr	Ni	Mo	Cb
Ladle	.26	.95	.01	.02	.26				
Check									

MECHANICAL PROPERTIES

Yield Strength .2% Offset	Tensile Strength PSI	Elong. in 2" %	Red of Area %		Starting Material Control No.	Starting Material conforms to the chemical and tensile requirements of
53,266	84,422	30.0			CAC 12617	ASME SA-106

MILL HEAT NO: 60786 Phoenix Steel Corp.

REMARKS: (A) Heat Treatment: Normalize at 1650°F ± 25°F, held at temperature for 1 hr/inch, then cooled in still air. (75-HT-4 Rev.2)

(B) Hardness: BHN 170

(C) U.T. Procedure: 78-UTFF-6, Rev. 2 - Satisfactory

(D) Charpy Impact test in accordance with 77-CI-1 Rev. 1, testing temperature at +40°F

Sample No.	Ft. Lbs.	Ave.	Shear Fracture	Lateral Expansion
1	57		40	47
2	60	52.7	50	58
3	60		50	53

Orientation & Location: The specimens were removed with the longitudinal axis parallel to the longitudinal axis of the sample with the axis of the Vee perpendicular to the surface.

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
S. O. 12177 SHOP FAB. PIPE
PIECE MARK: - - -
ITT GRINNELL
KERNERSVILLE, N.C. 27284

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

____ day of _____ 19 ____

NOTARY PUBLIC OF NEW JERSEY
My Commission Expires

5F070881-1
8/18/81

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

HEAT CODE: QS-L

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

MATERIAL MANUFACTURERS TEST REPORT
Continuation Sheet

CUSTOMER	P.O. NO.	JOB NO.
ITT Grinnell Industrial	KER-14770	N-16310-1

REMARKS: (E) We certify that this order is in compliance with 10 CFR-21.
(F) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA-3800 as audited and approved by Grinnell on 11/6/80 Our Quality Manual of 4/1/80 with Rev. 2 of 2/16/81.

NM Bw 7.902

S. W. E. C. PQC INSPECTED 103

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE AUG 24 1981
SHEET 2 OF 3

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Q.A. AUDITED
By: JS
Date 8-18-81

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

_____ day of _____ 19____

NOTARY PUBLUC OF NEW JERSEY
My Commission Expires _____

5F070881-1

8/18/81

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

CAC NO: 12617

HEAT NO: QS-L

ULTRASONIC TEST REPORT

ITT Grinnell		Mark Keeney	7/15/81
CUSTOMER		INSPECTOR/LEVEL II	DATE
N-16310-1R1	WP-B		
JOB NO.	ALLOY	EXAMINER/LEVEL III	DATE
L/R 90° Elbow	8" S/160		
ITEM	SIZE	CUSTOMER APPROVAL	DATE

PROCEDURE: NM RWR-902 78-UTT-6, Rev. 2

Krautkramer USIP 11		Exosen 14
TEST EQUIPMENT		COUPLANT
1" x ½"	Gamma	2¼ MHz
TRANSDUCER	TYPE	FREQUENCY

5% Notch
CALIBRATION STANDARD

80%	45°
REFERENCE LEVEL (%)	SOUND ANGLE – DEGREES

The following material has been inspected and accepted in accordance with the above procedure:

1 Fitting Accepted

S. W. E. C. PQC INSPECTED 103

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE AUG 24 1981
SHEET 3 OF 3

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
R. O. #2177 SHOP FAB. PIPE
PIECE MARK
ITT GRINN...
KERNERSV...

MATERIAL MANUFACTURERS TEST REPORT 00173

NM Bldg 889

Page 1 of 2

Heat Code: PK-R

CUSTOM ALLOY CORPORATION

ROUTE 513, CALIFON, N. J. 07830

PRODUCT DESCRIPTION	CUSTOMER DATA
Item L/R 90° Elbow	Name ITT Grinnell Industrial
Size 8" NPS	P.O. No. KER-14731 P.N. NM-1003-5
Wall Sch 160 (.906)	Tag No. KER-14731 Niagara Mohawk
Grade WP-B Smls.	Job No. N-16225-1

Specifications: ASME SA234 WP-B Seamless, Section III Class 1, 1974 Edition, No Addenda Spec Sheets NM-001 Rev. 3 & NM-005 Rev. 3; Also ANSI B16.9 applies. Ends per NM-D2

CHEMICAL ANALYSIS

	C	Mn	P	S	Si	Cr	Ni	Mo	Cb			
Ladle	.26	.95	.01	.02	.26							
Check												

MECHANICAL PROPERTIES

Yield Strength .2% Offset	Tensile Strength PSI	Elong. in 2" %	Red of Area %		Starting Material Control No.	Starting Material conforms to the chemical and tensile requirements of
		transv.				
51,382	82,412	28.0			CAC 12617	ASME SA-106

MILL HEAT NO: 60786 Phoenix Steel Corp.

REMARKS: (A) Heat Treatment: Normalized at 1650°F ± 25°F, held at temperature for 1 hour per inch, then cooled in still air. (75-HT-4 Rev.2)

(B) Hardness: BHN 128

(C) U.T. Prodedure: 78-UTFF-6, Rev. 2 - Satisfactory

(D) We certify this material is in compliance with NB-2550.

(E) We certify this Order is in compliance with 10 CFR-21.

(F) Charpy Impact test in accordance with NB-2300 & SA-234, testing temperature at +40°F, and 77-CI-1, Rev. 1

Sample No.	Ft. Lbs.	Ave.	Lateral Exp.	Shear Fracture
1	24		32	30
2	26	29.6	30	30
3	26		27	30

W. E. C. S. PQ1 INSPECTED-22

3 M.P.C. MINE MILL NUC. STATION UNIT-6 P. O. MMPS-P3018 J. O. 18177 SHOP FAB. PIPE PIECE MARK — — ITT GRINNELL KERNERSVILLE, N.C. 27284

ITTG - IPI QUALITY CONTROL ★APPROVED★ T. C. WILSON DATE AUG 17 1981 SHEET 1 OF 3 5F050181-1

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

___ day of _____ 19 ____

NOTARY PUBLIC OF NEW JERSEY
My Commission Expires

5/27/81

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

BWF. 889

HEAT CODE: PK-R

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

NM Buf. 889

MATERIAL MANUFACTURERS TEST REPORT
Continuation Sheet

CUSTOMER	P.O. NO.	JOB NO.
ITT Grinnell Industrial	KER-14731	N-16225-1

REMARKS: (F) Cont. Orientation & Location: The specimens were removed with the longitudinal axis parallel to the longitudinal axis of the sample with the axis of the Vee perpendicular to the surface.

(G) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. NCA-3800 as audited and approved by ITT Grinnell on 11/6/ Our Quality Manual of 4/1/80 with Revision 2, 2/16/81.

(H) Note: We certify we did not authorize Phoenix Steel to do any weld repair on the material supplied.

S.W.E.C. PQA INSPECTED 224

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 18177 SHOP FAB: PIPE
PIECE MARK —
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE AUG 17 1981
SHEET 2 OF 3

Q.A. AUDITED
D.A.: J
Date: 5.27.81

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

____ day of _____ 19____

NOTARY PUBLUC OF NEW JERSEY
My Commission Expires _____

5F050181-1
5/27/81

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

21589 9/80

BWF 889

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

UM BWF-889

CAC NO: 12617

HEAT NO: PK-R

ULTRASONIC TEST REPORT

ITT Grinnell			
CUSTOMER		INSPECTOR/LEVEL II	DATE
N-16225-1	WP-B	[signature]	5/8/81
JOB NO.	ALLOY	EXAMINER/LEVEL III	DATE
L/R 90° Elbow	8" S/160		
ITEM	SIZE	CUSTOMER APPROVAL	DATE

PROCEDURE:

78-UTFF-6 Rev. 2

Krautkramer USIP 11		Exosen 14
TEST EQUIPMENT		COUPLANT
1/2" x 1"	Gamma	2¼ MHz
TRANSDUCER	TYPE	FREQUENCY
5% Notch		
CALIBRATION STANDARD		
80%		45°
REFERENCE LEVEL (%)		SOUND ANGLE — DEGREES

The following material has been inspected and accepted in accordance with the above procedure:

6 fittings accepted

S. W. E. C. POA 224 INSPECTED

N.H.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 18177 SHOP FAB. PIPE
PIECE MARK ——
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE AUG 17 1981
SHEET 3 OF 3

00173

MATERIAL MANUFACTURERS TEST REPORT

Nm BWF 233

Heat Code: OR-Y
* Revised 9/24/81

CUSTOM ALLOY CORPORATION

ROUTE 513, CALIFON, N. J. 07830

PRODUCT DESCRIPTION		CUSTOMER DATA	
Item	Straight Tee	Name	ITT Grinnell Inudstrial Piping
Size	8" NPS	P.O. No.	KER-14704 P.N. NM-1003-90
Wall	Sch 160 (.906)	Tag No.	KER-14704 Niagara Mohawk
Grade	WP-B Smls.	Job No.	N-16167-1

...W. P. C. NINE MILE ...NIC. STATION L...-2 P. O. NMP2-...-0018 J.O. 12177 SHOP FAB. PIPE PIECE MARK:---------- ITT GRINNELL KERNERSVILLE, N.C. 27284

Specifications: ASME SA234 WP-B Seamless, Section III Class 1, 1974 Edition No Addenda Spec NM-001 Rev. 3 (3/15/79) & NM-005 Rev. 3 (4/7/77) Ends per NM-D2 Also ANSI B16.9 applies

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE SEP. 28 1981
SHEET 1 OF 3

CHEMICAL ANALYSIS

	C	Mn	P	S	Si	Cr	Ni	Mo	Cb
Ladle	.26	.68	.009	.028	.15				
Check									

MECHANICAL PROPERTIES *

Yield Strength .2% Offset	Tensile Strength PSI	Elong. in 2" %	Red of Area %		Starting Material Control No.	Starting Material conforms to the chemical and tensile requirements of
41,500	63,000	29.0	45.0		CAC 9-H	ASTM A-106

MILL HEAT NO: 44853 Colt Industries Crucible, Inc.

REMARKS: (A) Heat Treatment: Normalize at 1650°F ± 25°F, held at temperature for 1 hour per inch, then cooled in still air. Tempering at 1100± 25°F for 1 hr. then air cooled. (75-HT3 Rev.1)

(B) Hardness: BHN 137

(C) U.T. Procedure: 78-UTFF-6 Rev. 2 - Satisfactory

(D) We certify that this order is in compliance with 10 CFR-21.

(E) Charpy Impact test in accordance with ASME SA-234, testing temperature at +40°F and Proc. 77-CI-1 Rev. 1

Sample No.	Ft. Lbs.	Average
1	16.5	
2	22.0	26.7
3	18.5	

S. E. C. PQA INSPECTED-224

(F) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA-3800 as audited and and approved by ITT Grinnell on 11/6/80.

State of New Jersey
County of Hunterdon

Acceptance and Approval by Customer Representative/Inspector

...rn and subscribed before me this ... day of ... 19 ...

NOTARY PUBLIC OF NEW JERSEY
My Commission Expires

Q.A. AUDITED
By: ...
Date: 4-16-81

5F032681-1

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

HEAT CODE: OR-Y

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

NM Buf-833

MATERIAL MANUFACTURERS TEST REPORT
Continuation Sheet

CUSTOMER	P.O. NO.	JOB NO.
ITT Grinnell Industrial	KER-14704	N-16167-1

REMARKS: (F) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA-3800 as audited and approved by ITT Grinnell on 11/6/80.

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-79010
J. O. 16177 SHOP FAB. PIPE
PIECE MARK —
ITT GRINNELL
KNOXVILLE, TN. 37204

S. W. E. C.
PQA
INSPECTED-224

ITTG - 'PI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE MAY 28 1981
SHEET 2 OF 3

QA AUDITED
By: JS
Date: 5-22-81

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

_____ day of _____ 19____

NOTARY PUBLUC OF NEW JERSEY
My Commission Expires _____

4/16/81
5F032681-1

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

21589 9/80

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

RM Buf 833

CAC NO: 9-H

HEAT NO: OR-Y

ULTRASONIC TEST REPORT

Itt Grinnell		Mark Hurney	4/10/81
CUSTOMER		INSPECTOR/LEVEL II	DATE
N-16167-1	WP-B		
JOB NO.	ALLOY	EXAMINER/LEVEL III	DATE
St. Tee	8" x S/160		
ITEM	SIZE	CUSTOMER APPROVAL	DATE

PROCEDURE:

78-UTFF-6 Rev. 2

S. W. E. C. PQA INSPECTED 224

Krautkramer USIP 11		Exosen 14
TEST EQUIPMENT		COUPLANT
1" x ½"	Gamma	2¼ MHz
TRANSDUCER	TYPE	FREQUENCY

5% Notch

CALIBRATION STANDARD

80%	45°
REFERENCE LEVEL (%)	SOUND ANGLE – DEGREES

The following material has been inspected and accepted in accordance with the above procedure:

1 Fitting Accepted

N.N.P.D. NINE MILE HUC. STATION UNIT-2 P. O. NNPS-P5018 J. O. 12177 SHOP FAB. PIPE PIECE MARK — — ITT GRINNELL [illegible] N.C. 27864

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE MAY 28 1981
SHEET 3 OF 3

21589 9/80

LAD[illegible] CO.
'laterial[illegible]ysis Report
METALLURGICAL DEPARTMENT

PURCHASER ITT Grinnell-Industrial Piping Div.

CUDAHY, WIS., March 26, 19 80

PURCHASER'S ORDER NO. KER 12886-F

LSO NO. F61016A

ADDRESS

INVOICE NO.

NM Brif-1880

NO. PCS.	DESCRIPTION AND SPECIFICATION	HEAT NO. AND CODE	CHEMICAL COMPOSITION								PHYSICAL PROPERTIES			
			C	Mn	P	S	Si	Ni	Cr	Mo	YIELD STRENGTH KSI	ULTIMATE STRENGTH KSI	ELONG. %	RED. OF AREA
	ITEM # 10													
2	8" S/160 45° Ell Bev per Grinnell NM-D2 Rev. 5 dated 12-20-78 ASME SA234 WPB Per ASME Section III Nuclear Class 1 1974 Edition No Addenda & NM-005 Rev. 3 dated 4-7-77 & NM-001 Rev. 3 dated 3-15-79 Serial # 895, 896 Item #NM-1003-6	L65662 AD8NN	.24	.92	.009	.008	.19				50.4	71.4	35	69

VEE NOTCH Charpy Impacts 10 X 10 X 8
@ +40° F.
Ft. Lbs. 112 - 119 - 99
% Shear 74 - 72 - 77
Lat. Exp. .085 -.081 -.077

ITTG - PI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE APR. 21 1980
SHEET 1 OF 3

Impacts were taken with their longitudinal axis parallel to the longitudinal axis of the fitting. Centered on wall. The axis of the notch is perpendicular to the surface.

This material was produced under a quality system program approved by ITT Grinnell Industrial Piping Incorporated on October 1, 1979 as conforming to the requirements of ASME Section III, Sub-Article NCA-3800.

S.W.E.C. INSPECTED 103 P.O.C.

SUBSCRIBED AND SWORN TO BEFORE ME THIS

____ DAY OF _____ 19____

NOTARY PUBLIC

MY COMMISSION EXPIRES _____

LCO 1016 R2

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:- - - - - - - -
ITT GRINNELL
KERNERSVILLE N.C. 27284

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE ABOVE REPORT IS TRUE AND CORRECT.

W. Gauge J.

LADISH CO.
Material Test Report
METALLURGICAL DEPARTMENT

PURCHASER ITT Grinnell-Industrial Piping Div.

CUDAHY, WIS., March 26, 19 80

PURCHASER'S ORDER NO. KER 12886-F

LSO NO. F61016A

ADDRESS

INVOICE NO.

UN
BWG-686

Item # 10

Starting material conforms to chemical and tensile properties of ASME SA106 Grade B Seamless Pipe.

Fittings have a maximum hardness of 197 BHN.

Tensile specimen size - Standard Round.

Fittings were heat treated per Ladish Procedure 13-F-451 - Normalized at 1650° F.

Fittings were ultrasonically inspected and accepted per Ladish Procedure 9-Q-2 Rev. 4 - Report attached.

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIPE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

INSPECTED-103 S.W.E.C. PROC.

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE APR. 21 1980
SHEET 2 OF 3

SUBSCRIBED AND SWORN TO BEFORE ME THIS

_____ DAY OF _____ 19 ____

NOTARY PUBLIC

MY COMMISSION EXPIRES _____

LCO 1016A

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE ABOVE REPORT IS TRUE AND CORRECT.

W. Gauger

NM

BWF 686

LADISH C.J.
METALLURGICAL DEPT.
ULTRASONIC FITTINGS REPORT

CUSTOMER	LJO	LSO	DATE
Grinnell	28-46348	F61016	2/26/80

PART NAME: 8 S/160 45° EL BEV Per Grinnell

ULTRASONIC SPEC.	ITEM NO.	MATERIAL SPEC.
9 Q 2 Rev. 4	10	SA 234

METHOD OF FORMING: ☐ FORGED ☐ EXTRUDED ☒ FORMED ☐ ROLL & WELD

EQUIPMENT: ☒ USIP II NO. (L) 1782 ☐ OTHER NO. _____ NO. _____

METHOD: ☒ CONTACT ☒ WITH SHOE ☐ IMMERSION

WAVE FORM: ☐ LONGITUDINAL ☒ SHEAR ANGLE 45° | COUPLANT: SC-2 | WATER PATH DISTANCE: | FREQUENCY (MHZ): ☐ 1.0 ☒ 2.25 ☐ 5.0

TRANSDUCER SIZE & NUMBER: 1/2" ø (LF) 2

SENSITIVITY:

LONGITUDINAL

Circ.: Set 50% vs. OD axial notch, estab. DAC vs. ID axial notch.

SHEAR Axial: Set 50% vs. OD circ. notch, estab. DAC

NOTCH DEPTH Circ. Axial .027 ±

TEST PROCEDURE:

LONGITUDINAL

SHEAR Test OD in 2 opposite circum. directions and 2 opposite axial directions.

MATERIAL INSPECTED

SERIAL	CODE	DISPOSITION	SURFACE CONDITION	INSPECTOR NAME	CERTIFICATION LEVEL
895	AD8N N	Sonic OK	Shot Blasted	Colby	I
896	"	" "			

ITTG QUALITY CONTROL IPI ★APPROVED★ T. C. WILSON DATE APR 21 1980 SHEET 32 OF 32

COMMENTS:
Level I operator supervised by Level II personnel.

R. P. Mierzwa Level III
R. P. MIERZWA - LEVEL III
RPM:kjm

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

U.S.W.E.C. PQC INSPECTED-103

APPROVED BY R. P. Mierzwa
R. P. MIERZWA/dh

LCO 5213

Capitol
PIPE & STEEL PRODUCTS, INC.
Subsidiary of Bowline Corporation
301 CITY LINE AVENUE • AREA CODE 215 • TE 9-4300
BALA-CYNWYD, PENNSYLVANIA 19004

NM p.552

CAPITOL PIPE CERTIFICATE OF CONFORMANCE

ASME QUALITY SYSTEMS CERTIFICATE (MATERIALS) NUMBER QSC-206-2

EXPIRATION DATE: May 6, 1984

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

MATERIAL MANUFACTURER'S CERTIFICATION: 8" S/160 SA333 GR 6

HEAT NUMBER: 51125

REFERENCE: ITT Grinnell Ind. Piping
PO# KER 17712 P
SO# GN-2768-A3
Item# 1
Charge# N24071
Tag Pt# NM-96

MANUFACTURER: Phoenix

Capitol Pipe certifies that the certified Mill Test Report supplied for the material described above, is a true copy of the material manufacturer's original as contained in our files. We further certify that this material was procured under and controlled by the Quality Systems Program covered by the ASME Certificate shown above.

Based upon Capitol's review of the Material Manufacturer's Certified Mill Test Report and the requirements of the purchase order, this material is supplied in accordance with the specifications checked below.

- [ ] ASTM Specification _____
- [X] ASME Specification SA333 Gr6, 1974 Edition, NO Addenda.
- [X] ASME Section III, Class 1, 1974 Edition, NO Addenda, paragraphs N B 2000. ~~(including the exceptions to NX-2610).~~
- [X] Other Grinnell Spec NM-001 and NM-005 Apply

S. W. E. C. INSPECTED 103 POC

Capitol Pipe certifies that the following tests, examinations or treatments were performed in accordance with and meet the requirements of the specifications shown above. Reports containing the results of these operations are included as attachments.

Ultrasonic Test

QUALITY CONTROL
☆APPROVED☆
DATE 3/2/83
SHEET 1 OF 1

Patty Spade — Quality Assurance Representative
3/2/83 — Date

NM
P-552

CAROLINA TESTING CONSULTANTS, INC.

P.O. BOX 306 / MT. HOLLY, NORTH CAROLINA 28120 / (704) 394-7675
RT 14, BOX 512 / CHARLOTTE, N.C. 28208

ULTRASONIC INSPECTION REPORT

CLIENT: CAPITOL PIPE AND STEEL PRODUCTS CO. DATE: 2/9/83

PROJECT: ITT GRINNELL CTC JOB NO: 83-002
PO# 17712 P / Part #NM-96
SO# GN2768A3/N24071
Item #1

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

MATERIAL AND EQUIPMENT

MATERIAL: 8" SCH 160, ASME SA-333, Gr. 6
HEAT LOT NO: See Below
CAPITOL PIPE'S P.O. NO: 26027-04 RELEASE NO: 03
ULTRASONIC UNITS: Krautkramer USK6 SERIAL NO: 27593-1893
TRANSDUCERS: CIRCUMFERENTIAL DIRECTION - ½"x1", 45° Shoe, Branson, S/N HF6930
TESTING FREQUENCY: 2.25 MHz
COUPLANT: EXOSEN
ULTRASONIC PROCEDURE: CAPITOL PIPE'S UT-7 (REVISED 8/11/80)
CALIBRATION STANDARD: 5% NOTCH PER CAPITOL PIPE'S UT-7 PROCEDURE SUPPLIED BY CAPITOL PIPE, S/N CS-61

ULTRASONIC RESULTS

CTC PIPE NO.	HEAT NO.	LENGTH	DATE TESTED	ULTRASONIC RESULTS
N24071-1-1	51125	16' 0"	2/9/83	Accepted

S. W. E. C. POC INSPECTED-103

ITTG - IPI
QUALITY CONTROL
☆APPROVED☆
DATE 3/28/83
SHEET 2 OF 2

CAPITOL QA C-2 APPROVED
FEB 11 1983

RESPECTFULLY SUBMITTED,
CAROLINA TESTING CONSULTANTS, INC.

INSPECTOR: DANIEL E. SEYMOUR
ASNT LEVEL II
SIGNATURE: Daniel E. Seymour

REVIEWED BY: WILLIAM H. SEYMOUR
ASNT LEVEL: III
SIGNATURE: William H. Seymour

TUBE DIVISION
PHOENIXVILLE, PENNA.

CERTIFICATE OF INSPECTION AND TESTS

NM P-550

12-22-82	DATE SHIPPED: 12-17-82	MILL ORDER NO. T-7582-6	SHIPPING LIST 88 D

SOLD TO / SHIP TO:
ITT GRINNELL IND PIPIN
PO# KER 17712 P
SO# GN 2768A3
Item# 1
Charge# N24071 GN
TAG: Pt# NM-96

CUSTOMER ORDER NO: I-30329-00N

CAR NO. CR 533653

MATERIAL: SEAMLESS ☐ PIPE ☒ TUBE, HOT FINISHED

SPECIFICATION: ASTM A-333-81a, ASME SA-333 Gr. 6

10 CFR 21 APPLIES

8" 160 Gr. 6

NO. PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	8.625"	x .906"				51125

Longitudinal Vee Notch Charpy at Minus 50°F. (10mm x 10mm)

Ft. Lbs.	Lateral Expansion	Per Cent Shear
170-140-114	.098-.095-.090	70-100-60

TAG: P.O. I-30329-00N

ITTG - IPI
QUALITY CONTROL
☆APPROVED☆
DATE 2/11/83

SHEET 1 OF 2

HEAT NO.	C	Mn.	P.	S.	Si.	Cu.	Ni.	Cr.	Mo.	
5	.15	1.12	.012	.020	.24					Ladle Analysis
5	.15	1.11	.010	.020	.23					Product Analysis

S.W.E.C. P.O.C. INSPECTED 103

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

CAPITOL-QA C-2 APPROVED

JAN 06 1983

HEAT NO.	TENSILE (KSI)	YIELD (KSI)( )	% ELONG. IN 2"	% RA	HARDNESS ROCKWELL	HARDNESS BRINELL	GRAIN SIZE	
51125	69.0	49.8	42.00					Normalized at 1650°F. Held 2 hours and air cool

This material was manufactured in accordance with our Quality Program revised 2-1-80 which was audited by Capitol Pipe on 7-21-82 and approved as meeting the requirements of ASME Section III Subarticle NCA-3800.

JOMINY DISTANCE - 16TH ROCKWELL C FLATTENING OK HYDROSTATIC PSI 2800

1	2	4	6	8	10	12	14	16	20	24	28	32

THE PHOENIX STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH TH METHODS PRESCRIBED IN THE APPLICABLE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE COMPAN REC ARE AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO METHODS OF INSPECTION OR TESTING ARE PRESCRIBED CIFICATIONS, THE STANDARD MILL INSPECTION AND TESTING PRACTICES OF THE PHOENIX STEEL CORPORATION HAVE BEEN APPLIED. UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFI ION.

E. C. Schmall
ENGINEER OF TESTS

(RM 1&T-0153-R4 (12/78)

P550

Westmoreland Mechanical Testing & Research Inc.
Specialists In Stress Rupture Testing

P. O. Box 388, Youngstown, Pa. 15696
Telephone: 412-537-3131

26 January 1984

Capitol Pipe & Steel
Products, Incorporated
8200 Henderson Road
Charlotte, NC 28213

WMT&R REPORT CP0002
P.O. No. 26082-04
Rel. No. 03
Heat No. 51125

S. W. E. C. POC INSPECTED-103

ATTENTION: Betty Flynn

Tag: Grinnell
SO# GN2768A3, PO# KER17712-P, Part No. NM96

Service to be provided under the Quality Program Rev. 3, dated 9/6/83 as audited and approved by Capitol Pipe on 11/21/83.

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

SUBJECT: Heat Treatment

Introduction

One (1) 2½" coupon, submitted as 8" S/160 Smls SA333, Grade 6 Material, identified as Heat No. 51125 was received in the laboratory for heat treatment as follows:

Heat to 1500°F with continued heating at 175°F per hour to 1950°F. Hold for 15 minutes, then cool at 1100°F per hour to below 1350°F, followed by cooling at 300°F per hour to below 600°F.

At your service

Walter Vargo
Laboratory Technician

kmc

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE 1-30-84
SHEET 4 OF 5

Approved by

Robert A. Apel
Laboratory Manager

P550

CERTIFICATION OF IMPACT TESTING DATA

WMT & R Report No. CP0002

Customer: Capitol Pipe & Steel Products, Incorporated Date: 1-26-84

Machine is certified to Watertown Specifications.

P.O. No. 26082-04
Rel. No. 03
Heat No. 51125

TESTING DATA

Material	*Sample No.	Location	Temperature	ENERGY FOOT POUNDS	MILS PERCENT LATERAL EXPANSION	PERCENT SHEAR FRACTURE
Submitted as	1	V-notch	+40°F	63.0	56.0	30.0
Smls SA333	2	V-notch	+40°F	74.0	65.0	30.0
Gr. 6 2½" cpn	3	V-notch	+40°F	81.0	68.0	30.0

ITTG - IPI
QUALITY CONTROL
APPROVED
DATE 1-30-84
SHEET 5 OF 5

N. M. P. C.
NINE MILE PNT. STATION
UNIT 2 P. O. NMP2-P301B
I.O. 12177 SHOP FAB. PIPE
PIECE MARK
ITT GRINNELL
KERNERSVILLE, N.C. 27284

S. W. E. C.
P.O.C.
INSPECTED 103

*Samples were heat treated. Standard Size Charpy Specimens. Tag: Grinnell SO# GN2768A3
All testing done at Westmoreland Mechanical Testing & Research, Incorporated.
Service to be provided under the Quality Program Rev. 3, dated 9/6/83 as audited and approved by Capitol Pipe on 11/21/83. Tag: PO# KER17712-P, Part No. NM96

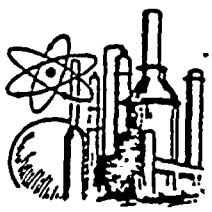
Work Completed by: Walter Vamp

Certified by: Robert A. Hart

kmc

nm R527

GUYON ALLOYS, INC.



TUBULAR PRODUCTS FOR THE ENERGY INDUSTRIES
P. O. Box 42345, Houston, Texas 77042
(713) 974-7200

MATERIAL CERTIFICATION

S. W. E. C. INSPECTED - 103 POC

Subject: ITT Grinnell
Order Number: KER-15861-P

Description: SMLS ASME SA333 GR 6

Item 2 8" S/160 Heat #60775;51125 (PHOENIX)
S/N UT-2-1 & 2-2

Additional Testing: The above subject material was 100% Ultrasonically Tested to a 5% Notch in 2 circumferential and 2 axial directions, in accordance with ASME Section III, 1974 Edition thru NO Addenda.

CERTIFICATION: This certifies that, to the best of our knowledge and belief, the piping material described herein meets the purchasing requirements, material specifications, and all special requirements of ASME Section III, Class 1 of the ASME Boiler and Pressure Vessel Code, 1974 Edition thru NO Addenda and Grinnell specs. NM-001 Rev. 3 and NM-005 Rev. 3. Material has been processed in accordance with our Identification and Verification program.

Attachment: CMTR (2)
LAB REPORT (1)

Pete Rodriguez
Assistant Manager
Quality Assurance

Date: 6/3/82

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE JUN 15 1982
SHEET 1 OF 4

Quality System Certificates
Mat'l:# QSC-205-2

Expiration Date: 1/6/84

PR/ps

cc: Q. A. File

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

nm P-527

ALPHA TESTING LABORATORIES
REPORT OF ULTRASONIC INSPECTION

TO: Guyon Alloys
P.O.: A 53150-HN
Scope Examination: 100%UT(2 axial/2 circ dirs)
Specification: ASME Sect. III, 1974 Edition thru No Addenda.
Procedure: ATL-7100 Rev. 2 Dtd. 1/29/82
Supplement: 4745 Dtd. 2/15/80

Date of Test: May 28, 1982
Witnessed by:
Technician: Tom Schuddekopf

Instrument	Sonatest UFD-2A
Calibration Dt.	Jan. 12, 1982
Calibration Std.	435-5-H 5% Notch
Calibration Amp.	75% Screen Height
Distance Amp. Correction	N/A
Method	Pulse Echo (Contact)
Scanning Speed	< 6" Per Second
Manual	X Auto
Indexing Width	10%
Couplant	Cellulose Gum

TRANSDUCERS

Circ. Scanning:

Type	Aerotech
Freq.	2.25 MHZ
Size	.5" X 1.0" Diameter
Shoe: Contour	8.625" O.D.
Angle	45°

Axial Scanning:

Type	Magnaflux
Freq.	2.25 MHZ
Size	3/4" Diameter
Shoe: Contour	Flat
Angle	45°

ITEM	MATERIAL DESCRIPTION
# 2	Seamless ASME SA 333 Grade 6. 2 pcs. (51'0") 1). 36-4 S/N UT-2-1 Heat No. 60775 2). 14-8 S/N UT-2-2 Heat No. 51125 8" S/160 (.906) X RLS ITT Grinnell P.O. #KER- 15861-P

S. W. E. C. INSPECTED - 103 POC

Results of Inspection: The listed pipe was ultrasonically inspected in accordance with the referenced specification, procedure and supplement and revealed no apparent relevant indications.

Inspection Engineer Tom Schuddekopf
S.N.T. Level II
Date 5/28/82

Examination was performed in accordance with a Q.A. Pro. Dtd. 4-20-78 Rev. 2 Dtd. 1-25-80 as audited and approved by Guyon Alloys, Inc. on 9-28-81 as conforming to the requirements of ASME Sect. III, NCA-3800.

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE JUN. 15 1982
SHEET 2 OF 4

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
P.O. 12177 SHOP FAB. PIPE
PIECE MARK: ---
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Q. A. APPROVED
BY: [signature] DATE: 6-2-82
GUYON ALLOYS, INC.

PHOENIX STEEL CORPORATION

TUBE DIVISION Itt Grinnell Industrial Piping

PHOENIXVILLE, PENN KER15861-P

CERTIFICATE OF INSPECTION AND TESTS 00113

hm P527 It.2

DATE:	DATE SHIPPED:	MILL ORDER NO.	SHIPPING LIST NO
1-15-82	1-14-82	T-4063-C	55A

SOLD TO
Guyon Alloys, Inc.
Valley Forge South
440 E. Swedesford Road
Wayne, Pennsylvania 19087

CUSTOMER ORDER NO. A48119N

CAR NO. PC 557089

MATERIAL: SEAMLESS ☐ PIPE ☒ TUBE, HOT FINISHED

SHIP TO
8" S/160

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE JUN 15 1982

SPECIFICATION: ASTM/ASME A/SA 333-79 Gr. 1 & 6

NO. PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	8.625"	x .906"	SHEET 3 OF 4			

P.O.C. INSPECTED 103

Longitudinal Vee Notch Charpy at Minus 50°F. (10mm x 10mm)
Longitudinal Midwall Charpy Test

Ft. Lbs.	Lateral Expansion	Per Cent Shear	
100-122-108	.099-.099-.101	80-80-90	(61984)
170-140-114	.098-.095-.090	70-100-60	(51125)

NO.	C	Mn.	P.	S.	Si.	Cu.	Ni.	Cr.	Mo.	V.	
61984	.13	1.14	.012	.024	.21						Ladle Analysis
61984	.13	1.16	.012	.024	.23						Product Analysis
61984	.12	1.13	.012	.025	.23						Product Analysis
51125	.15	1.12	.012	.020	.24						Ladle Analysis
51125	.15	1.11	.011	.020	.23						Product Analysis
51125	.15	1.11	.011	.020	.23						Product Analysis

Q.A. APPROVED BY: _____ DATE: 2/10/82
GUYON ALLOYS, INC.

HEAT NO.	TENSILE (KSI)	YIELD (KSI) ( )	% ELONG. IN 2"	% RA	HARDNESS ROCKWELL - BRINELL	GRAIN SIZE
61984	66.5	46.5	38.00		Normalized at 1650°F. Held for 2 hours and	
51125	67.0	44.0	37.00		air cooled.	

Material was produced in accordance with the quality program revision dated 2/1/80, which was audited and approved by Guyon Alloys, on June 24, 1981 as conforming to ASME Section III, Subarticle NCA-3800.

U. S. M. P. S.
THREE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
P. O. 12177 SIOP FAB. PIPE
PIECE MARK: ----------
ITT GRINNELL
PHOENIXVILLE, N.C. 27284

JOMINY DISTANCE - 16TH ROCKWELL C FLATTENING OK HYDROSTATIC PSI 2800

1	2	4	6	8	10	12	14	16	20	24	28	32

THE PHOENIX STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE APPLICABLE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE COMPANY'S RECORDS ARE AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO METHODS OF INSPECTION OR TESTING ARE PRESCRIBED BY THE SPECIFICATIONS, THE STANDARD MILL INSPECTION AND TESTING PRACTICES OF THE PHOENIX STEEL CORPORATION HAVE BEEN APPLIED. BASED UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFICATION.

R. E. Schell
ENGINEER OF TESTS

FORM IAT-0153-R4 (12/76)

PHOENIX STEEL CORPORATION

TUBE DIVISION
PHOENIXVILLE, PENNA.

7-15-82

nm P-527

CERTIFICATE OF INSPECTION AND TESTS

S.W.E.C. P.O. INSPECTED-103

DATE:	DATE SHIPPED:	MILL ORDER NO.	SHIPPING LIST NO
5-17-82	3-31-82	T-4063-C	363A

SOLD TO: Guyon Alloys, Inc.
P. O. Box 42345
Houston, Texas 77042
Attn: Ms. Carolyn Owen

CUSTOMER ORDER NO. A48119N

CAR NO. CR 529005

MATERIAL: SEAMLESS ☐ PIPE ☒ TUBE, HOT FINISHED

SHIP TO: 8" S/160

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE JUN. 15 1982
SHEET 4 OF 4

SPECIFICATION: ASTM A-333-79, ASME SA-333 Gr. 1 & 6

NO. PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	8.625" x	.906"	--			

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3612
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Longitudinal Vee Notch Charpy at Minus 50°F. (10mm x 10mm)
Longitudinal Midwall Charpy Test

Ft. Lbs.	Lateral Expansion	Per Cent Shear	
100-122-108	.099-.099-.101	80-80-90	(61984)
72-52-71	.063-.045-.063	50-40-50	(60775)

HEAT NO.	C	Mn.	P.	S.	Si.	Cu.	Ni.	Cr.	Mo.	V
61984	.13	1.14	.012	.024	.21	Ladle Analysis				
61984	.13	1.16	.012	.024	.23	Product Analysis				
60775	.12	1.17	.012	.026	.22	Ladle Analysis				
60775	.13	1.08	.012	.027	.24	Product Analysis				

Itt Grinnell Industrial Piping
KER15861-P It. 2

Q.A. APPROVED
BY: _____ DATE: 5/20/82
GUYON ALLOYS, INC.

HEAT NO.	TENSILE (KSI)	YIELD (KSI)( )	% ELONG. IN 2"	% RA	HARDNESS ROCKWELL	HARDNESS BRINELL	GRAIN SIZE
61984	66.5	46.5	38.00	Normalized at 1650°F. Held for 2 hours and air			
60775	65.0	45.0	43.00	cooled.			

Material was produced in accordance with the quality program revision dated 2/1/80 which was audited and approved by Guyon Alloys on June 24, 1981 as conforming to ASME Section III subarticle NCA-3800.

JOMINY DISTANCE - 16TH ROCKWELL C FLATTENING OK HYDROSTATIC PSI 2800

1	2	4	6	8	10	12	14	16	20	24	28	32

THE PHOENIX STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE APPLICABLE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE COMPANY'S RECORDS ARE AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO METHODS OF INSPECTION OR TESTING ARE PRESCRIBED IN SAID SPECIFICATIONS, THE STANDARD MILL INSPECTION AND TESTING PRACTICES OF THE PHOENIX STEEL CORPORATION HAVE BEEN APPLIED. BASED UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFICATION.

R. E. Schell
ENGINEER OF TESTS

NM. Bwp-1-613

L[illegible]SH CO.
Material Analysis Report
METALLURGICAL DEPARTMENT

TRANS. 00173

PURCHASER ITT Grinnell-Industrial Piping Div.

PURCHASER'S ORDER NO. KER 12886-F

ADDRESS P.O. Box 566 Kernersville, N. C. 27284

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK ----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

CUDAHY, WIS., February 11, 1980

LSO NO. F61016A

INVOICE NO. P54728

NO. PCS.	DESCRIPTION AND SPECIFICATION	HEAT NO. AND CODE	CHEMICAL COMPOSITION								PHYSICAL PROPERTIES			
			C	MN	P	S	SI	NI	CR	MO	YIELD STRENGTH KSI	ULTIMATE STRENGTH KSI	ELONG. %	RED OF ARE
2	ITEM # 9 8" S/160 90° LR Ell Bev. Per Grinnell NM-D2 Rev. 5 dated 12-20-78	L65662 AD8NK	.24	.92	.009	.008	.19				50.4	71.4	35	69

VEE Notch Charpy Impacts 10 X 10 X 8
+40° F.
Ft. Lbs. 112 - 119 - 99
% Shear 74 - 72 - 77
Lat. Exp. .085 - .081 - .077

Impacts were taken with their longitudinal axis parallel to the longitudinal axis of the fitting. Centered on wall. The axis of the notch is perpendicular to the surface.

S. W. E. C. PQA INSPECTED 211

ASME SA234 WPB Per
ASME Section III
Nuclear Class 1
1974 Edition No Addenda
& NM-005 Rev. 3 dated
4-7-77 & NM-001 Rev. 3
dated 3-15-79

Serial No. 897,
898

Item No. NM-1003-5

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE FEB. 19 1980
SHEET 1 OF 3

SUBSCRIBED AND SWORN TO BEFORE ME THIS

_____ DAY OF _____ 19____

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES _____

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE ABOVE REPORT IS TRUE AND CORRECT.

W. Grupe Jr.

NM BWF-1643

LA[illegible]ISH CO.
Material Analysis Report
METALLURGICAL DEPARTMENT

TRANS. 00173

PURCHASER ITT Grinnell - Ind. Piping Div.

PURCHASER'S ORDER NO. KER 12886-F

ADDRESS

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK-
ITT GRINNELL
KERNERSVILLE N.C. 27284

CUDAHY, WIS., February 11, 19 80

LSO NO. F61016A

INVOICE NO. P54728

Starting material conforms to chemical and tensile properties of ASME SA106 Grade B Seamless Pipe.

Fittings have a maximum hardness of 197 BHN.

Tensile specimen size - Standard Round.

Fittings were ultrasonically inspected and accepted per Procedure 9-Q-2 Rev. 4 Nuclear Class 1 - Reports attached.

This material was produced under a quality system program approved by ITT Grinnell Industrial Piping Incorporated on October 1, 1979 as conforming to the requirements of ASME Section III, Sub-Article NCA 3800.

Fittings were heat treated per (L) Procedure 13-F-451 -

Normalized at 1650° F.

S. W. E. C. PQA INSPECTED 211

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE FEB. 19 1980
SHEET 2 OF 3

SUBSCRIBED AND SWORN TO BEFORE ME THIS

_____ DAY OF _____ 19 ____

NOTARY PUBLIC

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE ABOVE REPORT IS TRUE AND CORRECT.

W. Francis F.

NM BWF 643

N. M. P. C.
NINE MILE NUC. STATION
UNIT - 2 P. O. NMP2-PO618
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
TO GRINNELL
FORNERSVILLE, N.C. 27260

LADISH CO.
METALLURGICAL DEPT.
ULTRASONIC FITTINGS REPORT

BWF 643

TRANS. 00173

CUSTOMER	LJO	LSO	DATE
Grinnell	28-46347	F61016	1/18/80

PART NAME: 8 S/160 90 LR El

ULTRASONIC SPEC.	ITEM NO.	MATERIAL SPEC.
9 Q 2 Rev. 4	9	SA234 WPB Ncc Cl. 2

METHOD OF FORMING: ☐ FORGED ☐ EXTRUDED ☒ FORMED ☐ ROLL & WELD

EQUIPMENT: ☐ USIP II NO. ____ ☒ OTHER Mark I NO. (L) 1981 NO. ____

METHOD: ☒ CONTACT ☐ WITH SHOE ☐ IMMERSION

WAVE FORM	COUPLANT	WATER PATH DISTANCE	FREQUENCY (MHZ)
☐ LONGITUDINAL ☒ SHEAR ANGLE 45°	SC-1		☐ 1.0 ☒ 2.25 ☐

TRANSDUCER SIZE & NUMBER: 1/2" x 1" sq. C-75.

SENSITIVITY:

LONGITUDINAL

Circ.: Set 50% vs. OD axial notch, estab. "DAC" vs. ID axial notch placed 1.5" from end.

SHEAR

Axial: Set 50% vs. OD circ. notch, estab. "DAC" vs. second full node on OD notch placed 6" from end. NOTCH DEPTH 5% N/W "V" .045"x1"

TEST PROCEDURE:

LONGITUDINAL

Scan 2 opp. circ. and 2 opp. axial directions.

MATERIAL INSPECTED

SERIAL	CODE	DISPOSITION	SURFACE CONDITION	INSPECTOR NAME	CERTIFICATI LEVEL
897	AD8N K	Sonic accept.	Grit blast & ground	Toth	II
898	"	" "			

COMMENTS:

ITTG - IPI
QUALITY CONTROL
★APPROVED★
T. C. WILSON
DATE FEB. 1 9 1980
SHEET 3 OF 3

S. W. E. C.
PQA
INSPECTED 211

APPROVED BY R. P. Mierzwa
R. P. MIERZWA/dh

LCO 5213

P.359

LOUIS P. CANUSO, INC.

Wholesale Distributor

PIPE, VALVES, FITTINGS AND INDUSTRIAL PIPING COMP.

DATE: March 13, 1980

STATEMENT OF CONFORMANCE

CUSTOMER: I.T.T. Grinnell Industrial Piping

PURCHASE ORDER NO: KER-13324 It. 23590

DESCRIPTION: 8" Sch 160 SA016 Grade B Pipe

NM-71 Lot # 504901

MANUFACTURER: Phoenix Steel Corp.

HEAT NUMBER: 58400

This is to certify to the best of our knowledge and belief that the Seamless Pipe described herein is in accordance with the specification Section III, Class 1 of the ASME Boiler and Vessel Code 1974 Edition thru summer of 1974 addenda

Material stored at Louis P. Canuso, Inc., Deptford, New Jersey, retains traceability by the Identification and Verification Program of NCA 3800. ASME Section III Quality System Certificate No. QSC-396 expires January 31, 1983. ✓

SIGNED: Dale Richards

TITLE: Quality Assurance Manager

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK-------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

S. W. E. C. PQA INSPECTED 211

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE JUL 2 1980
SHEET 1 OF 4

CEDAR AND SPRUCE STREETS • P.O. BOX 371 • DEPTFORD, NEW JERSEY 08096
(609) 227-5200 • (215) 334-4700 • TELEX: 83-1556

771 P359

PHOENIX STEEL CORPORATION

TUBE DIVISION
PHOENIXVILLE, PENNA.

CERTIFICATE OF INSPECTION AND TESTS

DATE:	DATE SHIPPED:	MILL ORDER NO.	SHIPPING LIST NO.
2-13-79	2-12-79	T-5054-A-10	65A

SOLD TO:
Louis P. Canuso, Inc.
Cedar & Spruce Sts.
Deptford, N. J. 08096

CUSTOMER ORDER NO. 14015

CAR NO.

MATERIAL: SEAMLESS ☒ PIPE ☐ TUBE, HOT FINISHED

SHIP TO:
I.T.T. Grinnell
P.O.#KER-13324
It. 23590

SPECIFICATION:
ASTM A-106-B-77, ASME SA-106-B (O.H.)

NO. PCS.	OD	WALL	LENGTH	TOTAL FT.	TOTAL WT.	HEAT NO.
	8.625"	x .906"				58400 68783

The material was manufactured in accordance with the Quality System Program audited and approved by L.P. Canuso, Inc. on 5-25-78 as conforming with the requirments of ASME Section III Subarticle NCA-3800.

HEAT NO.	C	Mn.	P.	S.	Si.	Cu.	Ni.	Cr.	Mo	PI
58400	.25	.81	.012	.027	.24	Ladle Analysis				
58400	.26	.80	.013	.027	.24	Product Analysis				
58400	.26	.80	.012	.027	.24	Product Analysis				
68783	.27	.85	.014	.028	.25	Ladle Analysis				
68783	.25	.82	.014	.028	.24	Product Analysis				
68783	.25	.80	.013	.029	.25	Product Analysis				

ITTG - MPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE JAN 2 1980
SHEET 2 OF 4

HEAT NO.	TENSILE (KSI)	YIELD (KSI) ( )	% ELONG. IN 2"	% RA	HARDNESS ROCKWELL	HARDNESS BRINELL	GRAIN SIZE
58400	75.0	48.8	34.00	Normalized at 1650°F.			
68783	79.8	48.3	32.00	"	"	"	

S. W. E. C. PQA INSPECTED 211

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

JOMINY DISTANCE - 16TH ROCKWELL C FLATTENING OK HYDROSTATIC PSI 2800

1/16"	2	4	6	8	10	12	14	16	20	24	28	32

PHOENIX STEEL CORPORATION HEREBY CERTIFIES THAT THE ABOVE MATERIALS HAVE BEEN INSPECTED AND TESTED IN ACCORDANCE WITH THE LOTS PRESCRIBED IN THE APPLICABLE SPECIFICATIONS AND THE RESULTS OF SUCH INSPECTION AND TESTS AS CONTAINED IN THE COMPANY RECORDS ARE AS SHOWN ABOVE. FOR PROPERTIES OR CHARACTERISTICS FOR WHICH NO METHODS OF INSPECTION OR TESTING ARE PRESCRIBED IN SAID SPECIFICATIONS, THE STANDARD MILL INSPECTION AND TESTING PRACTICES OF THE PHOENIX STEEL CORPORATION HAVE BEEN APPLIED. BASED UPON SUCH INSPECTION AND TESTS, THE ABOVE MATERIALS HAVE BEEN APPROVED AS FULFILLING THE REQUIREMENTS OF SAID SPECIFICATION.

R. W. Perkins
ENGINEER

P359

UNIVERSAL TECHNICAL TESTING LABS., INC.

Woodlawn Avenue and North Street Post Office Box 372, Collingdale, Pa. 19023
Phone: 215/586-3070

REPORT 3497

To: LOUIS P. CANUSO, INC.
P. O. Box 178
Deptford, N. J. 08096

Job No. 13787
Date March 3, 1980
Cust. P. O. 23273

page 1 of 1 pages

INSPECTION METHOD:	APPLICABLE SPECIFICATIONS:	JOB LOCATION
ULTRASONIC	ASTM E 213	Lab ☒ Field

QUANTITY	DESCRIPTION	RECOMMEND ACCEPT	RECOMMEND REJECT	REMARKS
	NM-71 Ht. 58400			
2	8" Sch. 160 SA 106-B			
	1 @ 17-3	x		No rejectable indications noted
	1 @ 16-8	x		External gouges noted on pipe
	TAG P.O. KER 13324 It. 23590 LPC 23273			
				Calibration against 2 direction 5% w/t notches

NM P-359

U.T. Procedure - UT-CAN-1 Rev. A dated 10/10/78

S.N.I. P.C.A. INSPECTED 211

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE JUN 2 1980
SHEET 3 OF 4

LOUIS P. CANUSO, INC.
APPROVED
Q. A. DEPT.
INTL. 3/3/80 DATE

EQUIPMENT and/or PROCEDURE

ULTRASONIC
Model: USIP-11
Search Unit: Harisonic 1 MHZ
Couplant: Water
Shear ☒ Longit. ☐

MAGNETIC PARTICLE
Current:
A. C. ☐ D. C. ☐
Wet ☐ Dry ☐
Residual ☐ Continuous ☐

LIQUID PENETRANT
Penetrant:
Penetrant time:
Cleaner:
Developer:
Developer time:

The test results reported herein are our conclusions based on our professional experience and our interpretation of the applicable specifications. Our recommendations should be carefully reviewed and are subject to acceptance by customer and/or his agents. We make no warranty relative to the structual integrity of the part inspected.

Govt./Industrial Rep.

Inspector/Technician Michael C. Hodes, Level III

Form A5-2

P359

BENJAMIN F. SHAW COMPANY

LABORATORY REPORT

N. M. P. C.
NINE MILE NUC. STATION
UNIT - 2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

March 12, 1980

B. F. SHAW COMPANY LABORATORY ORDER NO. 9204

REFERENCE: L. P. Canuso, Inc., Purchase Order No. 23272
Taged P.O. KER-13324

Procedure Q.C. 5 Rev. 0
dated 5/23/79

Gentlemen:

We hereby certify that six (6) samples of pipe were impact tested at the temperatures listed below. The longitudinal specimens were removed from mid wall of the specimens with the notch perpendicular to the surface. Test results are as follows:

Size	Grade	Ht. No.	Test Temp.	Lat. Exp.	Ft. Lbs.	Percent Shear	Spec. Size (mm)
16" S/80	SA106B	58185	+32°F	29.5	26.5	30	10 x 10
				36.5	31.5	30	
				35.0	29.0	30	
16" S/80	SA106B	N92657	+32°F	39.5	32.0	20	10 x 10
				44.0	40.0	20	
				40.0	37.0	20	
16" S/80	SA106B	N97873	+32°F	66.0	71.0	20	10 x 10
				50.0	47.0	20	
				60.0	70.0	20	
8" S/160	SA106B	58400	+40°F	47.5	42.0	30	10 x 10
				57.0	54.0	40	
				46.5	41.5	40	
20" S/80	SA106B	N97287	+40°F	40.0	33.0	20	10 x 10
				43.5	35.0	20	
				26.5	17.0	20	
6" S/80	SA106B	26257	+40°F	57.0	35.5	60	10 x 7.5
				55.0	35.0	60	
				56.0	32.5	60	

S. W. E. C. PQA INSPECTED-211

BENJAMIN F. SHAW COMPANY LABORATORY

Leonard P. Smeal | S.H.S

Leonard P. Smeal
Laboratory Supervisor

LPS/ktg

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE JUL 2 1980
SHEET 4 OF 4

LOUIS P. CANUSO, INC.
APPROVED
Q. A. DEPT.
INTL. DATE 3/13/80

00173

MATERIAL MANUFACTURERS TEST REPORT

Nm BWF 833

Heat Code: OR-Y
* Revised 9/24/81

CUSTOM ALLOY CORPORATION

ROUTE 513, CALIFON, N. J. 07830

PRODUCT DESCRIPTION		CUSTOMER DATA	
Item	Straight Tee	Name	ITT Grinnell Inudstrial Piping
Size	8" NPS	P.O. No.	KER-14704 P.N. NM-1003-90
Wall	Sch 160 (.906)	Tag No.	KER-14704 Niagara Mohawk
Grade	WP-B Smls.	Job No.	N-16167-1

... W. P. C. NINE MILE MUC. STATION ... L...-2 P. O. NMPZ-... J.O. 12177 SHOP FAB. PIPE PIECE MARK: ---------- ITT GRINNELL KERNERSVILLE, N.C. 27284

Specifications: ASME SA234 WP-B Seamless, Section III Class 1, 1974 Edition No Addenda Spec NM-001 Rev. 3 (3/15/79) & NM-005 Rev. 3 (4/7/77) Ends per NM-D2 Also ANSI B16.9 applies

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE SEP. 28 1981
SHEET 1 OF 2

CHEMICAL ANALYSIS

	C	Mn	P	S	Si	Cr	Ni	Mo	Cb
Ladle	.26	.68	.009	.028	.15				
Check									

MECHANICAL PROPERTIES *

Yield Strength .2% Offset	Tensile Strength PSI	Elong. in 2" %	Red of Area %		Starting Material Control No.	Starting Material conforms to the chemical and tensile requirements of
41,500	63,000	29.0	45.0		CAC 9-H	ASTM A-106

MILL HEAT NO: 44853 Colt Industries Crucible, Inc.

REMARKS: (A) Heat Treatment: Normalize at 1650°F ± 25°F, held at temperature for 1 hour per inch, then cooled in still air. Tempering at 1100± 25°F for 1 hr. then air cooled. (75-HT3 Rev.1)

(B) Hardness: BHN 137

(C) U.T. Procedure: 78-UTFF-6 Rev. 2 - Satisfactory

(D) We certify that this order is in compliance with 10 CFR-21.

(E) Charpy Impact test in accordance with ASME SA-234, testing temperature at +40°F and Proc. 77-CI-1 Rev. 1

Sample No.	Ft. Lbs.	Average
1	16.5	
2	22.0	26.7
3	18.5	

S. W. E. C. PQA INSPECTED-224

(F) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA-3800 as audited and and approved by ITT Grinnell on 11/6/80.

State of New Jersey
County of Hunterdon

Acceptance and Approval by Customer Representative/Inspector

...rn and subscribed before me this ... day of ... 19...

NOTARY PUBLIC OF NEW JERSEY
My Commission Expires

Q.A. AUDITED
By:
Date: 4-16-81

5F032681-1

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

HEAT CODE: OR-Y

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

NM Buf-833

MATERIAL MANUFACTURERS TEST REPORT
Continuation Sheet

CUSTOMER	P.O. NO.	JOB NO.
ITT Grinnell Industrial	KER-14704	N-16167-1

REMARKS: (F) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA-3800 as audited and approved by ITT Grinnell on 11/6/80.

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMPS-70010
J. O. 18177 SHOP FAB. PIPE
PIECE MARK —
ITT GRINNELL
KENNESSVILLE, N.C. 27284

S. W. E. C.
PQA
INSPECTED-224

ITTG - 'PI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE MAY 28 1981
SHEET 2 OF 3

QA AUDITED
By: [signature]
Date: 5-22-81

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this

_____ day of _____ 19____

NOTARY PUBLUC OF NEW JERSEY
My Commission Expires _____

4/16/81
5F032681-1

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

21589 9/80

00173

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

RM Buf 833

CAC NO: 9-H

HEAT NO: OR-Y

ULTRASONIC TEST REPORT

Itt Grinnell		Mark Hurney	4/10/81
CUSTOMER		INSPECTOR/LEVEL II	DATE
N-16167-1	WP-B		
JOB NO.	ALLOY	EXAMINER/LEVEL III	DATE
St. Tee	8" x S/160		
ITEM	SIZE	CUSTOMER APPROVAL	DATE

PROCEDURE:

78-UTFF-6 Rev. 2

S. W. E. C. PQA INSPECTED 224

Krautkramer USIP 11	Exosen 14
TEST EQUIPMENT	COUPLANT
1" x ½"	Gamma	2¼ MHz
TRANSDUCER	TYPE	FREQUENCY
5% Notch		
CALIBRATION STANDARD		
80%	45°	
REFERENCE LEVEL (%)	SOUND ANGLE – DEGREES	

The following material has been inspected and accepted in accordance with the above procedure:

1 Fitting Accepted

N.M.N.C.
NINE MILE HUC. STATION
UNIT-2 P. O. NMPS-P3018
J. O. 18177 SHOP FAB. PIPE.
PIECE MARK —
ITT GRINNELL
[illegible], N.C. 27864

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE MAY 28 1981
SHEET 3 OF 3

NM BWF-3005

Heat Code: R19

CUSTOM ALLOY CORPORATION

ROUTE 513, CALIFON, N. J. 07830

PRODUCT DESCRIPTION		CUSTOMER DATA	
Item	L/R 90° Elbow	Name	ITT Grinnell Industrial
Size	8" NPS	P.O. No.	KER-18149S
Wall	S/160 (.906)	Tag No.	KER-18149S & NM1003-5
Grade	WP-B Smls.	Job No.	N-24213-1

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Specifications: ASME SA234 Section III Class 1, 1974 Ed. No Addenda Grinnel Spec's: NM-001 Rev.3 & NM-005 Rev. 3 Ends machined per NM-D2.

S. W. P.C. INSPECTED-103

CHEMICAL ANALYSIS

	C	Mn	P	S	Si	Cr	Ni	Mo	Cb		
Ladle	.26	.95	.01	.02	.26						
Check											

MECHANICAL PROPERTIES

Yield Point PSI	Tensile Strength PSI	Elong. in 2" %	Red of Area %		Starting Material Control No.	Starting Material conforms to the chemical and tensile requirements of
1,382	82,412	28.0 transv.			CAC 12617	ASME SA-106

MILL HEAT NO: 60786 & Phoenix Steel

REMARKS: (A) Heat Treatment: Normalized at 1650°F ± 25°F, held at temperature for 1 hr/inch, then cooled in still air.
(B) Hardness: BHN 183
(C) Magnetic Particle per Spectrum MP-3A - Satisfactory
(D) Ultrasonic Testing per 77-UTTP-7 Rev.2 - Satisfactory
(E) Charpy Impact Test per A234, testing temp. at +40°F

Sample No.	Ft. Lbs.	Ave.	Lateral Exp.	Shear Fracture
1	24		32	30
2	26	29.6	30	30
3	26		27	30

Longitudinal Charpy specimens, oriented mid-wall
(F) We certify that this order is in compliance with 10 CFR-21.
(G) We certify these items were manufactured under a Quality System meeting the requirements of ASME Sec. III NCA3800 audited and approved by Grinnel on 5/28/82, Our QA Manual 8/31/82 Rev. 4

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE 7/2/83

SHEET 1 OF 4

State of New Jersey
County of Hunterdon

Sworn and subscribed before me this ____ day of ____ 19____.

NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 7/3/83

Acceptance and Approval by Customer Representative/Inspector

I certify the above product has been manufactured in accordance with all applicable parts of the above order and specifications.

CUSTOM ALLOY CORPORATION
Authorized Signature

Custom Alloy Corporation Route 513 Califon, N.J. 07830 • Telephone 201-832-7111 • TWX: 510-235-3362 • TELEX: 13-6456

NM
BWF-3005

CAC NO: 12617

HEAT NO: R19

ULTRASONIC TEST REPORT

ITT Grinnell Industrial			6/16/83
CUSTOMER		INSPECTOR/LEVEL II	DATE
N-24213-1	WP-B		
JOB NO.	ALLOY	EXAMINER/LEVEL III	DATE
L/R 90° Elbow	8" S/160		
ITEM	SIZE	CUSTOMER APPROVAL	DATE

PROCEDURE:

77-UTTP-7 Rev.2

Krautkramer USL-38	Exosen 14
EQUIPMENT	COUPLANT
1"x½"	Gamma 2½ MHz
TRANSDUCER	TYPE FREQUENCY
5% Notches	
CALIBRATION STANDARD	
80%	45°
REFERENCE LEVEL (%)	SOUND ANGLE – DEGREES

The following material has been inspected and accepted in accordance with the above procedure:

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

1 fitting accepted

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE 8/12/83
SHEET 2 OF 4

S.W.E.C. P.Q.C. INSPECTED-103

SPECTRUM LABORATORIES INC.
524 PELHAM AVE. P. O. BOX 565
PISCATAWAY, NEW JERSEY 08854
(201) 752-1400 Phila. No. (215) 923-7882

NM
BWF-3005

CUSTOMER
CUSTOM ALLOY CORPORATION
Route 513
Califon, New Jersey 07830

Attention: Mrs. J. Tierney

ESSION TESTING
CAL TESTING
NICAL TESTING
FIELD TESTING
X-RAY

MASS SPECTROMETER
CHEMICAL ANALYSIS
ULTRASONIC
INSPECTION

REPORT of TEST

Laboratory No. 34846

PURCHASE ORDER NO.	DATE	MATERIAL	IDENTIFICATION
QA 36144	6-30-83	WP-B	1 pc. 8" S/160 (.906") L/R 90 Elbow. CAC 12617, Heat R1S CAC S.O. N-24213-1, ASME SA-234 Sec. III, Cl. 1, 1974 Ed. No Add. ITT Grinnell KER-18149S

FILM OR PART IDENTIFICATION	RADIOGRAPH OR PART NUMBER	ACCEPT	REJECT	No Significant Defect	Gas Holes	Porosity	Shrinkage Cavity	Shrinkage Sponge	Foreign Material	Tungsten	Segregation	Cold Shuts	Surface Irregularities	Misruns	Micro Shrinkage	Cracks	Lack of Penetration	Lack of Fusion	Burn Through	Slag Inclusion	Gas Porosity	Undercutting	Remarks
Pc.	#1	XX		XX																			

NOTES:- 1. Procedural information is submitted on the attached control sheet.

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
GRINNELL
GREENVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
★APPROVED★
DATE 12/2/83
SHEET 2 OF 4

The material furnished against this order was tested under our QC Program which meets the requirements of the ASME Boiler and Pressure Vessel Code, Section III, PAR NCA-3800. Our program was audited and approved by Custom Alloy Corporation on 12-22-82.

S. W. E. C.
P Q C
INSPECTED 103

Quality Assurance Inspection System complies with MIL-I-45208A, ASTM E-548, and ASME Sec. III, Par. NCA-4000.

TYPE	QUANTITY IN ORDER	QUANTITY TESTED	QUANTITY SERVICEABLE	SPECIFICATION
X-RAY	1			
MAGNETIC PARTICLE	1	1	1	100% - MP-3A
DYE PENETRANT				

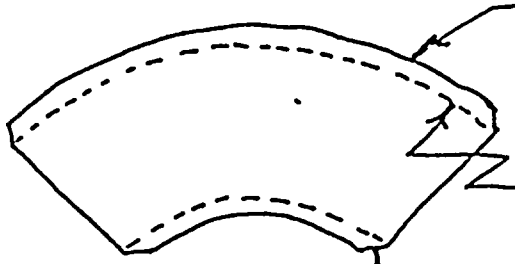
Garrett C. Schanck, Metallurgist
Level III, SNT-TC-1A
CORROSION AND METALLURGICAL TESTING
PROFESSIONAL ENGINEERING

Samples returned upon request only. Held for a period of 30 days maximum. The liability of this laboratory relative to this report shall not exceed the amount of the invoice.

SPECTRUM LABORATORIES, INC.

MAGNETIC PARTICLE CONTROL SHEET

NM
BW f-3005



O.D. Inspection.

Prod method using 3inch. Gri
Test included the end preps.

I.D. Inspection

Longitudinal indications inspecte
using the central conductor
method. Circumferential
indications inspected by direct
contact prods.

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

END PREPS

Examined using the Yoke
method (DC)

Notes

(1) Indications which were caused by surface roughness inherent to manufacture were considered non-relevant after indication removal (10%) and reinspection produced no defects.

(2) Arc strikes were removed after test and demagnitization conducted.

S. W. E. C.
POC
INSPECTED-103

Client Custom Alloy Corp.

P.O. No. QA 36144 Lab. No. 34846

Date 6/30/83

Material 8" S/160 (.906) L/R 90° Elbow
CAC 12617 MT. Code: R19
CAC S.O. N-24213-1

Specification ASME SA-234
ASME Sect. III, Class 1, 1974

Method Dry ☒ Continuous ☒
Wet ☐
Fluorescent ☐ Residual ☐

Apparatus Portamag 2000

Procedure MP-3A

Application	Magnetization	Current Type	Amperage
Cent. Cond.	circular	DC	1250
Prod	circular	DC	700
Yoke	longitudinal	DC	N/A

Grid .3in.

Operator G.C. Schanch Inspector [signature] Level III

Remarks

Indications

Piece No.	Type	Size	Location A	Location B	Location C	Acc
1	L	1/4"	Adjacent to end prep. Removed by grinding			X

ITTG - IPI
QUALITY CONTROL
APPROVED
DATE 7/1/83
SHEET 4 OF 4

RETURN TO:
NOTED MAY 29 1984 C. HOWELL

ITT GRINNELL INDUSTRIAL PIPING, INC.
P. O. Box 566, Kernersville, N. C. 27284

Form N9.1B

EXAMINATION AND DOCUMENTATION CHECK LIST

Nine Mile Point NMP2-P301B
Plant: Nuclear Sta. Unit 2 Job: Niagara Mohawk Corp. Cont. No.: Shop Fabricated Piping

System: WCS Ref. Dwg.: 09-14 Class: N-1

Piece Mark: 09-14-2-WCS-89-1-98 Register No.: NM-9-98X

N. M. P. C.
NINE MILE PNC. STATION
UNIT-2 P. O. SPECIFICATION
J.O. 12177 SHOP FAB. PIPE
PIECE MARK----------
ITT GRINNELL
KERNERSVILLE N.C. 27284

Req'd	In File	
(X)	QA	Data Reports
(X)	N/A	Materials Manufacturer Code Data Reports
(X)	QA	Shop Traveler (N4.1E)
(N/A)	N/A	Operations Record - Production Planner (N4.1A)
(X)	QA	MT Reports
(X)	QA	PT Reports
(X)	QA	UT Reports
(X)	QA	RT Reports - Including final acceptance
(X)	N/A	Furnace Load Sheet (N8.1A)
(N/A)	N/A	Isometric Sketch
(X)	QA	Engineering Shop Sketches (N2.1C)
(X)	QA	Materials Records (N2.1F)
(N/A)	N/A	Index of Certificates
(X)	Previously Submitted	Certified Material Test Report
(X)	Previously Submitted	Weld Procedure Qualification
(N/A)	N/A	Welder Qualification
(N/A)	N/A	NDE Personnel Qualification
(X)	N/A	Nonconformance Reports
(N/A)	N/A	Materials Receipt Reports (N3.3A) Int Reports (N3.3A)
(N/A)	N/A	Weld Chemical Analysis

Sargent & Lundy Engineering Corporation
[X] APPROVED AS SUBMITTED IN DCL SPECIFICATIONS
[ ] DISAPPROVED
[ ] APPROVED AS REVISED AS NOTED IN DCL SPECIFICATIONS
[ ] REVISED
J.O. No. 12177.50
SPEC No. NMP2-23GR
DATE 5-7-79
BY R. HUGGINS

P.O. & Spec. No. NMP2-P301B

Other Documents Required by Owner or his Agent

(X)	Previously Submitted	Approved Procedures
(X)	Previously Submitted	Certified Product Report

Signed: Quality Control Manager (NMP)

S. W. E. C. PQC INSPECTED-103

There item not required, mark NA

Special Contract System Applicable Documents:

(X)	NA	PWHT Total Time at Temperature
(X)	N/A	Painting Documentation
(X)	N/A	Supplemental Tests - Special Requirements

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*

(As Required by the Provisions of the ASME Code Rules)

ITT Grinnell Industrial Piping, Inc. Sheet 1 of 5

1. Fabricated by Old Highway 421, Kernersville, NC 27284 (Name and Address of Fabricator) Order No. 7100

2. Fabricated for Stone and Webster Engineering Corp Cherry Hill, NJ (Name and Address) Order No. NMP2-P301B

3. Owner Niagara Mohawk Power Corp 4. Location of Plant Scriba, New York

5. Piping System Identification Reactor Water Clean Up (Brief description of intended use, main coolant etc.)

(a) Drawing No. NM-9-98X Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class NUC - 1

Edition 1974, Addenda Date None, Case No. N/A

Remarks: Manufacturers' Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report N/A (Name of Part — Item number, Manufacturer's name, and identifying stamp)

Supplemental Sheets 2 ---Drawings

3 ---Material Record(s)

7. Shop Hydrostatic Test Field psi.

8. Description of piping Inspected: Piece Mark Number 09-14-2-WCS-89-1-98 (include—mark no.—material spec.—nom. pipe size—schedule or thickness—length—fittings—flanges, etc.)

See Attached Sheets

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

S. W. E. C. PQC INSPECTED 103

We certify that the statements made in this report are correct and that the fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE.

Date 1-30-84 Signed * By

* ITT Grinnell Industrial Piping, Inc.

Certificate of Authorization Expires 7-16-85 Certificate of Authorization No. N-2444-5

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of U.A. and employed by ** of Hartford, Ct. have inspected the piping described in this Data Report on 1-31 1984, and state that to the best of my knowledge and belief, the Manufacturer has constructed this piping in accordance with the applicable Subsections of ASME Code, Section III. ** The Hartford Steam Boiler Inspection and Insurance Company

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the piping in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 1-31, 1984

(Inspector) Commissions U.A. 321 (National Board, State, Province and No.)

ITT Grinnell Industrial Piping, Inc.

KERNERSVILLE, N. C.

FORM EN-101 REV. 9/80
Q. A. FORM N2.1C
1/4/1983

JOB NO 7100

LOCATION NIAGARA MOHAWK
SCRIBA NY

REDRW'N

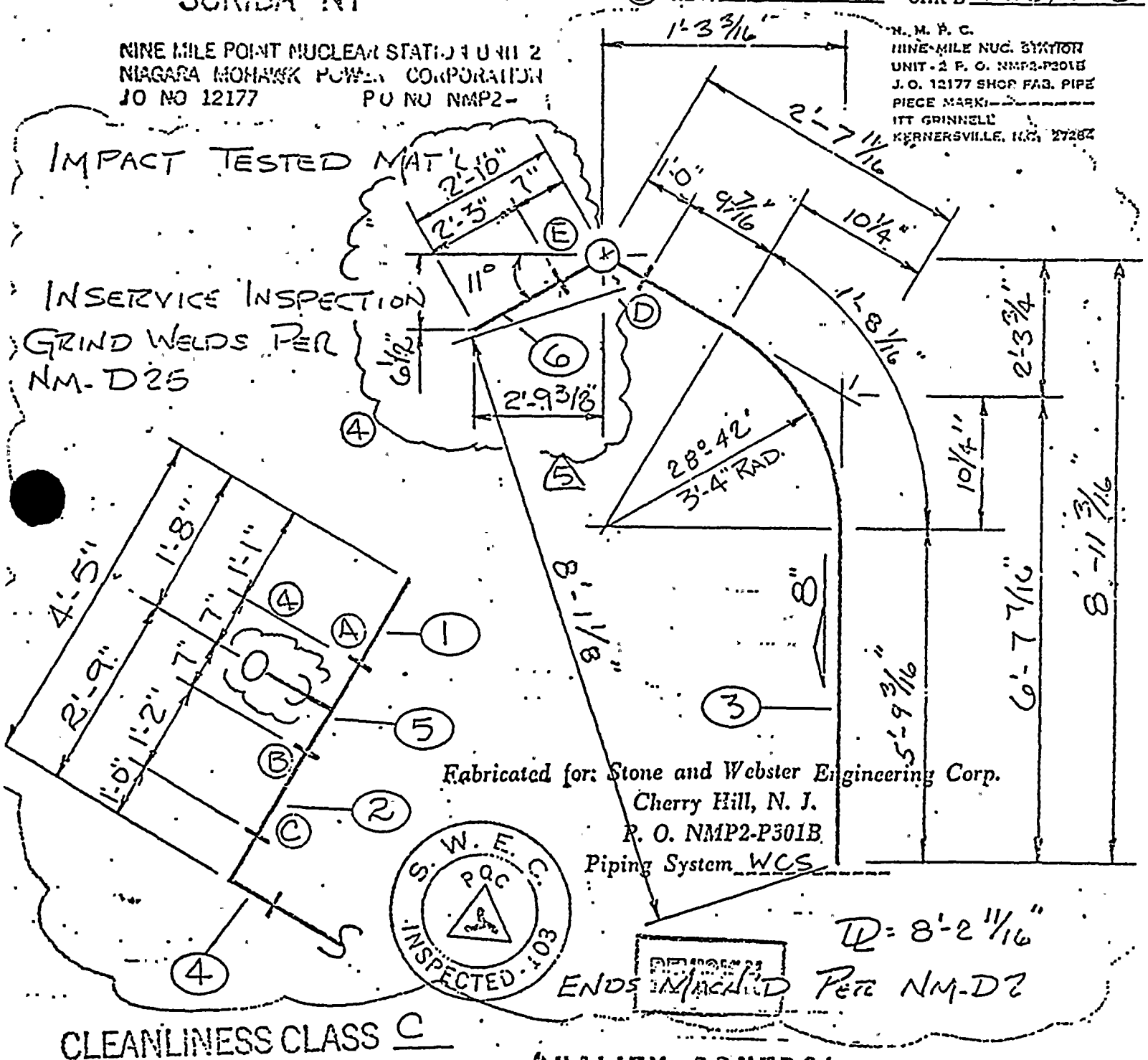
DRW'N WRAY 12-4-79 CHK'D P. D. 1-24-81
1 REV. KES 3-10-81 CHK'D DE 3-12-81
2 REV. VCV 9-29-81 CHK'D DE 10-1-81
3 REV. DB 11-2-82 CHK'D FEG 11-12-82

NINE MILE POINT NUCLEAR STATION UNIT 2
NIAGARA MOHAWK POWER CORPORATION
JO NO 12177 PU NO NMP2-

N. M. P. C.
NINE-MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK-
ITT GRINNELL
KERNERSVILLE, N.C. 27282

IMPACT TESTED MAT'L

INSERVICE INSPECTION
GRIND WELDS PER
NM-D25



Fabricated for: Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System WCS

D = 8'-2 11/16"

CLEANLINESS CLASS C

QUALITY CONTROL

CLASS Nuc. 1 LINE SPEC. 1511 APP. CODE ASME SECT III NO. REQ'D 1

SYSTEM WCS FAB. SPECS. JS 137

REF. DRW'G NO. EP 74 A ⑤ PRESS. 1200 PSI. TEMP. 575 °F. WT. 1233 LBS.

PIECE MARK 09-14-2-WCS-B9-1-93 REGISTER N/A | 1 | 1 | 98X

ITT GRINNELL INDUSTRIAL PIPING, INC.

ITT GRINNELL IND. PIPING

FORM 02 REV. 6-79 Q.A. N2.1F

9/7/83 Sheet 3 2 of 23

CONT. NO. 7100 KERNERSVILLE, N. C.

NAME NIAGARA MOHAWK

LOCATION SCRIBA NY

MATERIALS RECORD PRODUCTION PLANNER

REGISTER N.M. 09 9BX

REV. NO. BY DATE

PIECE MARK 09-14-2-WCS-89-11-9B

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL DOCUMENT	IN PROCES	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE SA 333 GR.6 (2) N.M.-091-2- (1)	F	1	1			SEE SUPPLEMENTAL SHEETS	SEP 15 1983	DELIVERED
2	8" SCH 160 SMLS C.S. PIPE SA 333 GR.6 (2) N.M.-091-2-	F	1	2					
3	8" SCH 160 SMLS C.S. PIPE SA-333 GR.1 (3) N.M.-091-3- (3)	F	8	2 11/16					
4	8" SCH 160 SMLS 90° LRWE SA234WPB GM. N.M.-1003- 5-	E	1		R-19 Pc.#1	Rwt 3005 9-21-83	Q103	GATHERED	01-2-4
5	8" SCH 160 SMLS STR. TEE SA234WPB N.M.-1003- 90-	E	1					AUG 9 1983 JH	
	8" C.S.E.P.	E	3						
6	8" Sch 160 SMLS C.S. PIPE SA-333-GR 6 (4) N.M.-091-	C	2	3	5X125-XW SER-VT-2	P-527 P-527583	Q103 9-21-83	9-1-83	

Fabricated for: Stone and Webster Engineering Corp.

Cherry Hill, N. J.

P. O. NMP2-P501B

Piping System WCS

INSPECTED

CODE ASME III, Cl. 1 CUST LINE SPEC 151 MFG CODE L X

SIZE 1 8

UNIT PRICE P.O.	DIS VENDOR	NET
TOTAL		

ITT GRINNELL INDUSTRIAL PIPING, INC.

SN-11 UT-2-2

Q. A. FORM N2.1F

Sheet 2 of 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

REGISTER NM | 9 | 98x

REV. NO. | BY | DATE

PIECE MARK P9-14-2-WCS-89-11-98

ITEM	DESCRIPTION: PART NUMBER/STOCK NUMBER	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL: DOCUMENT	IN PROCESS	INSPECTION	WISE LOCATION
1	8" SCH 160 SMLS C.S. PIPE				SA 333 GR.6 -2	P-527G	4-21-83	3/22/83	
	N.M.-91-2-	F	1	1	1		Q103	Q183	
					HT-511125 LOT-508145				
2	8" SCH 160 SMLS C.S. PIPE				SA 333 GR.6 -2	P-527G	4-21-83	Q183	
	N.M.-91-2-	F	1	2			Q103	3/4/83	
					HT-511125 LOT-508145				
3	8" SCH 160 SMLS C.S. PIPE				SA-333 GR.6 -3	P-550G		Q103	
	N.M.-91-3-	F	8 2	11/16	3 HT-511125 SN-N2047T-1-1 LOT-508733		Q129 5-9-83	3/3/83	
4	8" SCH 160 SMLS 90° LRWE				SA234WPB				
	N.M.-1003-5-	E	1						
5	8" SCH 160 SMLS STR. TEE				SA234WPB				
	NM-1003-90-	E	1						
	8" C.S.E.P.	E	3						

N. M. P. [illegible] NUC. STATION
NINE MIL[illegible] O. NMP2-P[illegible]
UNIT-2 [illegible] SHOP FAB. PIPE
J.O. 1217[illegible]
PIECE M[illegible]
ITT GRINNELL
KERNER[illegible]LE, N.C. [illegible]

INSPECTED 1983 S W C P O

CODE ASME III, CL 1 CUST LINE SPEC 151 MFG CODE L X

JOB SPEC JS-137-14 BATCH SIZE 8

UNIT PRICE P.O.	DIS VENDOR	NET
TOTAL		
ACCOUNTING		

ITT GRINNELL INDUSTRIAL PIPING, INC

REVISION SHOP COPY LAYOUT

FORM EN- /. 5-79
Q. A. FOR

Sheet 1 of 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

REGISTER NM 9 98X

REV. NO. BY DATE

PIECE MARK P9-14-2-WCS-89-1-98

ITEM	DESCRIPTION: PART NUMBER/STOCK NUMBER	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL: DOCUMENT	IN PROCESS	INSPECTION	WISE LOCATION
1	8" SCH 160 SMLS C.S. PIPE NM-71-	F	1	1	SA106B				
2	8" SCH 160 SMLS C.S. PIPE NM-71-	F	1	2	SA106B				
3	8" SCH 160 SMLS C.S. PIPE NM-71-	F	7	0	SA106B				
4	8" SCH 160 SMLS 90° LRWE NM-1003-5-	E	1		SA234WPB PKR	Bwf 889	Q103 9.21.83		DF 11/6 DI 10-5 DI-12-R-5/11/83
5	8" SCH 160 SMLS STR. TEE NM-1003-90-	E	1		SA234WPB ORY	Bwf 833	Q103 9.21.83		5/11/83
	8" C.S.E.P.	E	3						
							N. M. P. C. NINE MILE UNIT-2 P. O.	UC. STATION NMP2-P301	
							PIECE MARK	ITT GRINNELL KERNERSVILLE, N.C.	
								G.T.D.	
								QCT Q1 Bal	

INSPECTED 103

CODE ASME III, CL 1 CUST LINE SPEC 151 MFG CODE LX SIZE 8

UNIT PRICE P. O. DIS VENDOR NET TOTAL

ITT Grinnell Industrial Piping, Inc. — TRAVELER — SHEET 1 OF

PROJECT NIAGARA CONTRACT PC. NK. 09.142-WCS-89-1-98 REG. # NM 9 98X

SPECIFICATION JS-137-14

WELD	FIT-UP/PREHEAT			ROOT		INTERMEDIATE		FINAL			RT DATE			MAG	LP
	WELDER I.D.	WELD MAT'L	Q.C. INSP.	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	Q.C. INSP.	Q.C.	AI	CUST.	ROOT	(FINAL)
A	PROC. 5-4			PROC. 5-4		PROC. 1-3		PROC. 3-4							
	5331	NAGAF	Q103	C102	NAGAF	C102	NAEAY	C102	NAYAE NCDAC	Q181	10/26/83	10/31/83	11/3/83	—	M12
DATE	9/15/83		9-21-83	9/21/83		9/22/83		9/22/83		9/26/83					10-18-83
B	PROC. 5-4			PROC. 5-4		PROC. 1-3		PROC. 3-4							
	5331	ALPHA NAGAF	Q103	C102	NAGAF	C102	NAEAY	C102	NAYAE NCDAC	Q181	10/26/83	10/31/83	11/3/83	—	M12
DATE	9/15/83		9-21-83	9/21/83		9/22/83		9/22/83		9/26/83					10-18-83
C	PROC. 5-4			PROC. 5-4		PROC. 1-3		PROC. 3-4							
	5331	NAGAF	Q103	C102	NAGAF	C102	NAEAY	C102	NAYAE NCDAC	Q181	11/1/83	11/9/83	11/10/83	—	M12
DATE	9/23/83		9-21-83	9/21/83		9/22/83		9/22/83		9/26/83					10-18-83
D	PROC. 5-4			PROC. 5-4		PROC. 1-3		PROC. 1-3							
	5331	NAGAF	Q103	C50	NAGAF	C50	NAEBD	C50	NAEBD	(illegible)	10/26/83	10/31/83	11/3/83	—	M12
DATE	9/24/83		9-24-83	9/23/83		9/24/83		9/26/83		9/28/83					10-18-83
QUALITY	PROC. 5-4			PROC.		PROC.		PROC.							
	5331	NAGAF	Q103											—	M12
DATE	9/24/83		9-24-83												11-15-83

STRESS DATE N/A

FINAL INSP. (illegible) 10-18-83

SPECIAL OPERATIONS: C DIN. N/A

Q.C. DOC. APPROVAL 83 11/10/83 — 12/21/83

SQUARE UP 11-11-83 Q105 10-18-83

WALL THK P. M. P. G. NINE MILE RUG. & WRN UNIT-2 P. O. 6NF P.O.T.B.

A/I STAMP/DATA REPORT 1-31-84

CLEAN UP 11-15-83 Q185

CUST INSP DW 12-16-83

OTHER PIECE MARK: ITT GRINNELL

CUST DOC. APPROVAL

Form QA 10

ITT Grinnell Industrial Piping, Inc. TRAVELER SHEET 2 OF 2

PROJECT NIAGARA CONTRACT 7100 PC. MK. # 09-14-2-WCS-89-1-98 REG. # NM 9 9.8X

WELD	FIT-UP/PREHEAT			ROOT		INTERMEDIATE		FINAL			RT DATE			MAG PT	
	WELDER I.D.	WELD MAT'L	Q.C. INSP.	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	Q.C. INSP.	Q.C.	AI	CUST	ROOT	FINAL
Pull LEG	PROC.	N/A		PROC.		PROC.		PROC.							
DATE															
Temp Attch.	PROC. 5-4			PROC.		PROC.		PROC.							
	S-366	NAGAF	0129												N124
DATE	5-9-83		5/9/83												10-14-83
E"	PROC. 5-4			PROC.		PROC.		PROC.							
	S331	NAGAF	QC 9/20/83												
DATE	9/18/83														
E'	PROC. 5-4			PROC.	5-4	PROC.	1-3	PROC.	3-4						
	C217	NAGAF	0103	C102	NAGAF	C102	NAEAY	C102	NAYAE NGDAC	0184	10/26/83	10/31/83	11/3/83	—	N124
DATE	9-21-83		9-21-83	9/21/83		8/21/83		9/26/83		9-26-83					10-18-83
Rewld C	PROC.			PROC.	5-4	PROC.	1-3	PROC.	1-3						
				C136	NAGAH	C136	NAEAY	C136	NAEBD	0185	11/7/83	11/8/83	11/10/83	—	N124
DATE				11-2-83		11-2-83		11-2-83		11-2-83					11/11/83
	PROC.			PROC.		PROC.		PROC.							
DATE															
	PROC.			PROC.		PROC.		PROC.							
DATE															

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NM 2-P301B
J. O. 12177 SHOP FAB. PIP.
PIECE MARK: — —
ITT GRINNELL

Form N4-1B (2)

Req. No. _____ In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 10-19-83

Form N6.3A

Register No	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-____98X	89-14-2-W05-89-1-98	-A-	8" S/160	C-102 R10

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
Views	4														
Source	Ir 192														
Source Curies or KVP & MA	45	0-8			A	A							OST MKS CLR, SPLATTER 0-2, PA SURFACE 0-4	✓	
Source Size or Focal Spot	.1X.1	8-16											PROCESS CLR @ 14-16	✓	
TECHNIQUE — Source Film Distance	8.625	16-14				A							PA@10	✓	
TECHNIQUE — Time	2:00	14-0		.		A							PA @ 18, PROCESS MKRS CLR 14-18	✓	
TECHNIQUE — Actual Weld Thickness	.968														
TECHNIQUE — Penetrameter	17														
TECHNIQUE — Sensitivity	4T														
Shim Thickness	062														
Film Size	4½x10														
Film Type	55														

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

Viewing Technique: Single ☒ Double ☐

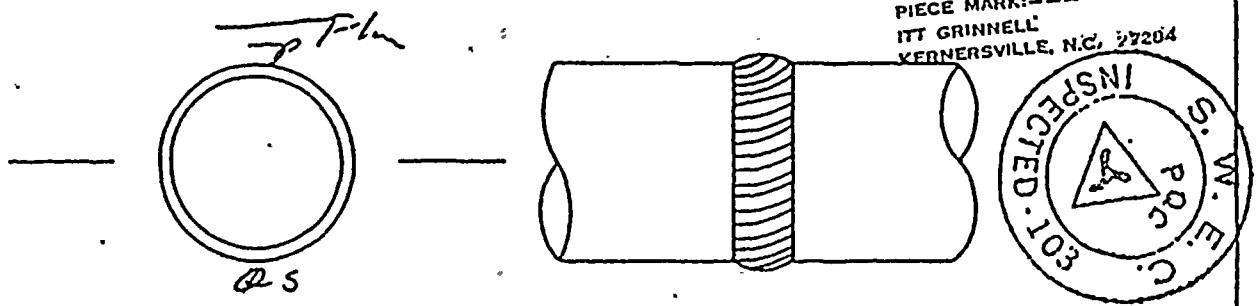
Screen	Front	010
	Back	010
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure

Root 5-4

Intermediate 1-3

Balance 3-4



N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:-----
ITT GRINNELL
KERNERSVILLE, N.C. 27284

INSPECTED 103 S.W.E.C. PQC

Radiographer — Date 10-25-83 By [signature]

Interpretation — Date 10-26-83 By [signature] Level II

Approval — Date 10-26-83 By [signature]

Customer Niagara Mohawk

Contract 7100

Inspection Standard _____

Authorized Insp. — Date STP-2-10-31-83 By [signature]

Customers Approval — Date 11-3-83 By [signature] Level II

Location Nine Mile Point Unit 2

Job No. _____

Acceptance Standard _____

Req. No. _____ In-Process ☐ RADIOGRAPHIC INSPECTION REPORT Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 10-19-83

Form N6.3A

Register No	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-----28X	09-14-2-WCI-89-1-98	B	8" S/160	C-102 RKB

Views	4
Source	IR192
Source Curies or KVP & MA	45
Source Size or Focal Spot	.1X.1
TECHNIQUE: Source Film Distance	8.625
TECHNIQUE: Time	2:00
TECHNIQUE: Actual Weld Thickness	.968
TECHNIQUE: Penetrameter	17
TECHNIQUE: Sensitivity	4T
Shim Thickness	062
Film Size	4½x10
Film Type	.55
Viewing Technique	Single [X] Double [ ]

Screen	Front	010
	Back	010
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

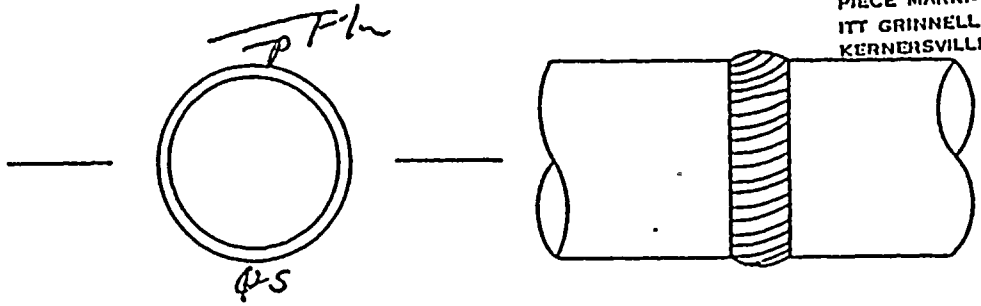
INTERPRETATION

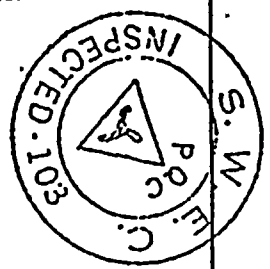
Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC	R
0-8											PROCESS MKS CLR	✓	
8-16												✓	
16-24											PROCESS MKS CLR.	✓	
24-0												✓	

LP – Lack of Penetration; LF – Lack of Fusion; S – Slag; P – Porosity; BT – Burn Thru; UC – Under Cut; C – Crater; CR – Crack; T – Tungsten; HL – High Low

Severity: A – Acceptable; R – Rejectable; B – Borderline

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284





Radiographer – Date 10-25-83 By _____
Interpretation – Date 10-26-83 By _____
Approval – Date 10-26-83 By _____

Customer Niagara Mohawk
Contract 7111
Inspection Standard _____
Authorized Insp. – Date 10-31-83 By _____
Customers Approval – Date 11-3-83 By _____

Location _____
Job No. _____
Acceptance Standard _____

Req. No. NUC-1 In-Process ☐ RADIOGRAPHIC INSPECTION REPORT Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. GM Repair ☑ Date 11-3-83

Form N6.3A

Register No	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM--9----98X	09-14-2-WCS-89-1-98	CRL	8" S160	C136RLB C102RLB

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
	Views: 4														
	Source: Ir192														
	Source Curies or KVP & MA: 60	0-8											spatter 6-8 scratch c/r	K	
	Source Size or Focal Spot: .106x10	8-16											process c/r surface 10-12	T	
TECHNIQUE	Source Film Distance: 8.625"	16-24			A	A							P&SA	T	
TECHNIQUE	Time: 1:20	24-0												∝	
TECHNIQUE	Actual Weld Thickness: .968													.	.
TECHNIQUE	Penetrameter: 17														
TECHNIQUE	Sensitivity: 4T													-	
	Shim Thickness: .002														
	Film Size: 4½x10														
	Film Type: SR														

LP – Lack of Penetration; LF – Lack of Fusion; S – Slag; P – Porosity; BT – Burn Thru; UC – Under Cut; C – Crater; CR – Crack; T – Tungsten; HL – High Low

Severity: A – Acceptable; R – Rejectable; B – Borderline

Viewing Technique: Single ☒ Double ☐

Screen	Front	.010
	Back	.010
Development	68° Kodak 6 min.	
	Automatic	X

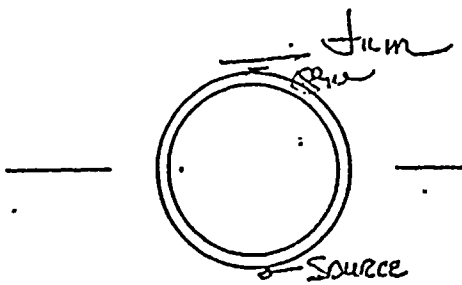
Welding Procedure

Root 5-4

Intermediate 1 5 3

Balance 3-4 / 1

10-25-83 S. Wilson Level II



N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
[illegible]

INSPECTED N.M.P.C. 103

Radiographer — Date 11-4-83 By C. Ledlow II

Interpretation — Date 11-7-83 By Don Thompson Level II

Approval — Date 11-7-83 By [signature]

Customer Niagara Mohawk

Contract 7100

Inspection Standard RTP-3-1 11-8-83 By [signature]

Authorized Insp. Date By

Customers Approval — Date 11-0 83 By W. Williams Level II

Location Nine Mile Point Unit 2

Job No.

Acceptance Standard RTA-1-1

Req. No. _____ In-Process ☐ RADIOGRAPHIC INSPECTION REPORT Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 10-19-83

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No
NIT-1-9-98X	09-14-2-WC5-89-1-98	-C-	8" S/160	C100 K18

Views	1
Source	IR 192
Source Curies or KVP & MA	45
Source Size or Focal Spot	1.8 x 1
TECHNIQUE: Source Film Distance	8.625
TECHNIQUE: Time	2:00
TECHNIQUE: Actual Weld Thickness	.968
TECHNIQUE: Penetrameter	17
TECHNIQUE: Sensitivity	4T
Shim Thickness	.062
Film Size	4½ x 10
Film Type	55
Viewing Technique	Single ☒ Double ☐
Screen: Front	010
Screen: Back	010
Development: 68° Kodak 8 min.	
Development: Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

INTERPRETATION

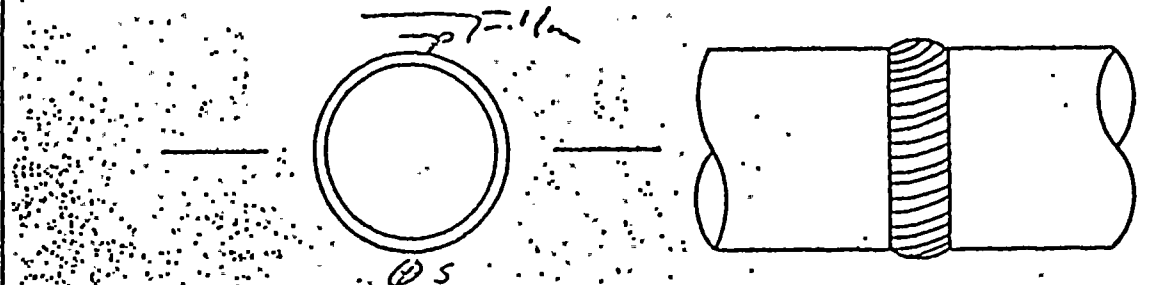
Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC	R
0-8											C/S		
8-16			C								SA @ 10		✓
16-24			A	A							SAPA		
24-0												✓	

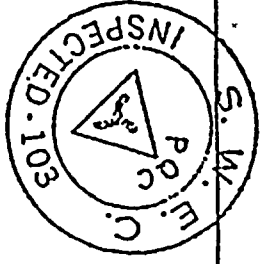
Comments (continued):
T. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. [illegible]
J. O. 12177 SHOP FAB. PIPE
PIECE MARK-----
ITT GRINNELL
[illegible], N.C. 27201

C/S 0-8
8-16

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline





Radiographer — Date 10-25-83 By [signature]

Interpretation — Date 10-26-83 By [signature] LEVEL II

Approval — Date _____ By _____

Customer Niagara Mohawk

Contract 7100

Inspection Standard RTP-3-1

Authorized Insp. _____ By _____

Customers Approval — Date _____ By _____

Location Nine Mile Point Unit 2

Job No _____

Acceptance Standard RTP-3-1

Re[redacted] _____ In-Process ☐ RADIOGRAP[redacted]SPECTION REPORT Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. ZB Repair ☐ Date 10-19-83

Form N6.3A

Register No	Piece No.	Weld No	Pipe Size and Schedule	Welder No.
NM-9-----98X	09-14-2-WC5-89-1-98	-D-	8" S/160	C-50R10

Views	4
Source	IR 192
Source Curies or KVP & MA	45
Source Size or Focal Spot	1X.1
TECHNIQUE: Source Film Distance	8.625"
TECHNIQUE: Time	2:00
TECHNIQUE: Actual Weld Thickness	.968
TECHNIQUE: Penetrameter	17
TECHNIQUE: Sensitivity	4T
Shim Thickness	062
Film Size	4½x10
Film Type	55
Viewing Technique	Single ☒ Double ☐
Screen: Front	010
Screen: Back	010
Development: 68° Kodak 6 min	
Development: Automatic	X

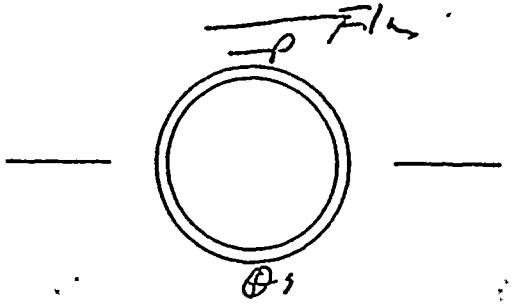
Welding Procedure
Root 5-4
Intermediate 1-3
Balance 1

INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
0-8											PROCESS MKS CLR.	✓	
8-16				A							PA @ 8-10	✓	
16-24											PROCESS MK CLR 20-22	✓	
24-0												✓	

LP – Lack of Penetration; LF – Lack of Fusion; S – Slag; P – Porosity; BT – Burn Thru; UC – Under Cut; C – Crater; CR – Crack; T – Tungsten; HL – High Low

Severity: A – Acceptable; R – Rejectable; B – Borderline



N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
[redacted]

INSPECTED · 103 · S. W. V. P. C. C.

Radiographer – Date 10-25-83 By [signature]
Interpretation – Date 10-26-83 By [signature] LEVEL II
Approval – Date 10-26-83 By [signature]

Customer Niagara Mohawk
Contract 7100
Inspection Standard RTP-3.1
Authorized Insp. – Date 10-31-83 By [signature]
Customers Approval – Date 11-3-83 By [signature] Level II

Location Nine Mile Point Unit 2
Job No. _____
Acceptance Standard [illegible]

13

Req. No. _____ In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 10-19-83

Form N6.3A

Register No	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM--9-----98X	09-14-2-WC2-89-1-98	-E-	8"S/160	C102 R1B

Views	4
Source	IR192
Source Curies or KVP & MA	45
Source Size or Focal Spot	1.X.1.
TECHNIQUE — Source Film Distance	8.625
TECHNIQUE — Time	2:00
TECHNIQUE — Actual Weld Thickness	968
TECHNIQUE — Penetrameter	17
TECHNIQUE — Sensitivity	4T
Shim Thickness	062
Film Size	4½ x 10
Film Type	55
Viewing Technique	Single [X] Double ☐
Screen — Front	010
Screen — Back	010
Development — 68° Kodak 6 min.	
Development — Automatic	X

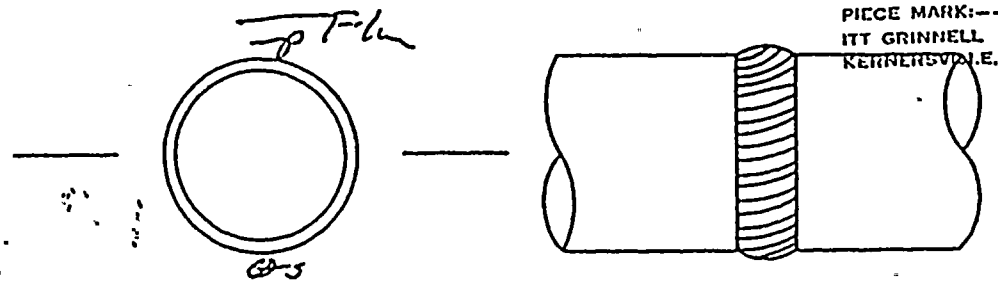
Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

INTERPRETATION

Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
0-8											-	✓	
8-16											PROCESS MKS ELC. -	✓	
16-24											-	✓	
24-0											PROCESS MKS ELC -	✓	
											-		
											-		
											-		
											-		
											-		
											-		

LP – Lack of Penetration; LF – Lack of Fusion; S – Slag; P – Porosity; BT – Burn Thru; UC – Under Cut; C – Crater; CR – Crack; T – Tungsten; HL – High Low

Severity: A – Acceptable; R – Rejectable; B – Borderline



N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

INSPECTED - 103 - P C C - S. W.

Radiographer – Date 10-25-83 By _____
Interpretation – Date 10-26-83 By _____
Approval – Date 10-26-83 By _____

Customer Niagara Mohawk
Contract 7703
Inspection Standard ITP 3-1
Authorized Insp. – Date 10-31-83 By _____
Customers Approval – Date 11-3-83 By _____

Location Nine Mile Point Unit 2
Job No. _____
Acceptance Standard NE-1-1

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer NIAGARA MOHAWK Register Number NM-9-98X

Contract/PO No. 7100 Piece Mark 09-14-2-WCS-8-9-1-98

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. P-2

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
A, B, C, D, E	8"S-160	FINAL & HAZ	✓	
TEMP ATTACH	8"S-160	REMOVAL AREAS	✓	
CODE PLATE	———	FILLET WELDS & HAZ	✓	

S. W. E. C. INSPECTED 103

S. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
P. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
[illegible]

Comments

SED # 240, 245, 121

Examination Performed by [signature] Date 10-18-83
NDT Level II

Interpretation Performed by [signature] Date 10-18-83
NDT Level II

MAGNETIC PARTICLE EXAMINATION REPORT

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer Niagara Mohawk Register Number NM-9-98x

Contract/PO No. 7100 Piece Mark 0-9-14-2-WCS-89-1-98

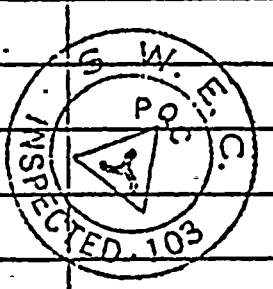
System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. 63

Examination Method Dry Powder Continuous

Procedure MTP 1-1 Acceptance MTA 1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
P.	8" S 160	FINAL & HAZ	✓	



N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 7100 SUPP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
[illegible]

Comments

SEQ #241

Examination Performed by Steve Gardner Date 11-11-83
NDT Level II

Interpretation Performed by Steve Gardner Date 11-11-83
NDT Level II

MAGNETIC PARTICLE EXAMINATION REPORT

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

LIQUID PENETRANT EXAMINATION REPORT

Customer NIAGARA MOHAWK Register Number NM-9-98x

Contract/PO No. 7100 Piece Mark 09-16-2-WCS-B9-1-99

System WCS

Examination Method ____ Solvent Removable ____ Visible Dye ____

Penetrant Batch No. H350A Penetrant Manufacturer Tracer-Tech

Developer Batch No. H369A Procedure PTP-1-2

Cleaner Batch No. H363A Acceptance PTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
IT #5 & IT #6	8"S-160	2 ENDS (CUT APART @ E)	✓	

S. W. E. C. QC INSPECTED 103

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P301B
J.O. 12177 STOP TAG ____
PIECE MARK: ____
ITT GRINNELL
GREENSVILLE, N.C. 27284

Comments

SED # 116

Examination Performed by Jesse Anderson Date 9-20-83
NDT Level II

Interpretation Performed by Jesse Anderson Date 9-20-83
NDT Level II

LIQUID PENETRANT EXAMINATION REPORT

ITT GRINNELL INDUSTRIAL PIPING, INC. Pg. 1 of 1

LIQUID PENETRANT EXAMINATION REPORT

Customer Niagara Mohawk Register Number NM-9-98V

Contract/PO No. 7100 Piece Mark 09-14-2-WCS-B9-1-98

System WCS

Examination Method Solvent Removable Visible Dye

Penetrant Batch No. H133 Penetrant Manufacturer Tracer-Tech

Developer Batch No. H181 Procedure PTM-1-2

Cleaner Batch No. H3634 Acceptance PTA-1-D

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
C	8" S160	GOUGED AREA	✓	

S. W. I. P. C. INSPECTED 103

N. M. P. C.
NINE MILE STATION
UNIT-2 P. O. NMP2-P301B
P. O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL

Comments SEQ# 107

Examination Performed by Joseph Anderson Date 11-2-83
NDT Level II

Interpretation Performed by Joseph Anderson Date 11-2-83
NDT Level II

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

ULTRASONIC BEND THICKNESS REPORT

Customer N.M. Register No. WN-9-98X

Contract/PO No. 7100 Piece Mark 09-14-2-WC-5-89-1-9

Calibration: Step Block Increments .5-1. Micrometer Reading .894"

Ultrasonic Instrument Sonic

Search Unit Type Aerotech Frequency 5MHZ Size 1/4"

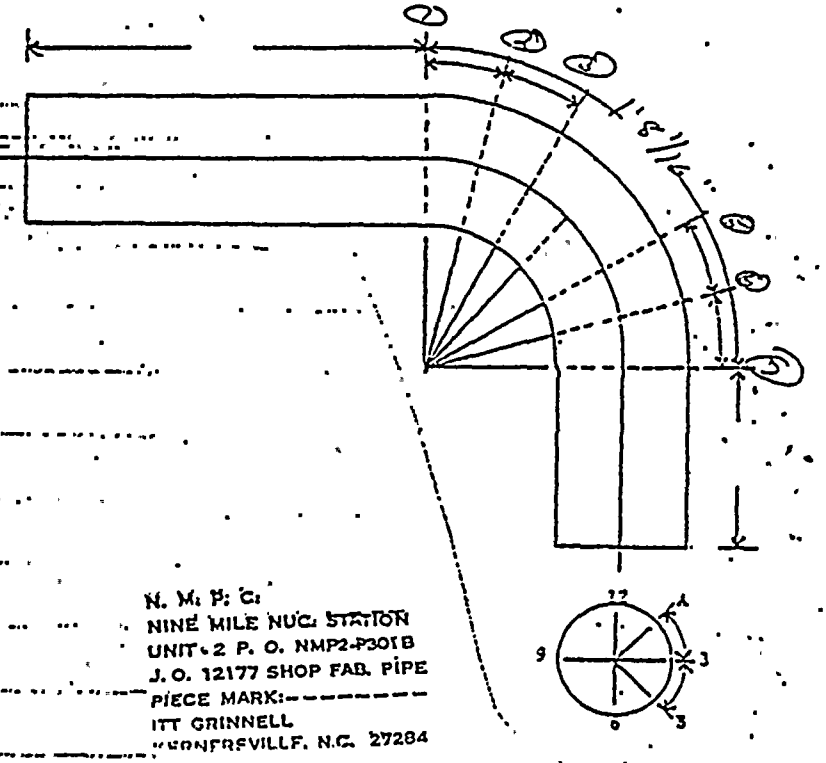
Couplant Sonotrace 30 Procedure UTP-1-0

Pipe Size 8"Ø-160

Nominal Wall .906"

Minimum Wall .793"

Lowest Reading .840"



N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
HENDERSVILLE, N.C. 27284

Ultrasonic Measurements

	@3	@A	@B		@3	@A	@B
1.	.880	.870	.860	17.			
2.	.865	.860	.855	18.			
3.	.870	.860	.840	19.			
4.	.880	.860	.840	20.			
5.	.860	.855	.850	21.			
6.	.870	.860	.855	22.			
7.	.880	.865	.860	23.			
8.				24.			
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							

S. W. E. C. POC INSPECTED-103

Examination Performed by T. Smith Date 5-10-83

NDT Level II

R301B IR P100 1309

T158F. TO KEYPUNCH | STONE & WEBSTER ENGINEERING CORPORATION | SH. 1 OF 2

QUALITY ASSURANCE INSPECTION REPORT TYPE-A | PQA DISTRICT N/A

ITEM DESCRIPTION: Piping SHOP FABRICATED PIPING LOAD SHEET # 7244 LOAD # 300

IR NUMBER (SHOP ONLY)		KEYWORD	SYS. CODE	FILE LOCATION CODE	QA CAT.
P100 1309	A 1	NUPFAB	VAR		1

TYPE INSP	PURCHASE ORDER	LOT SIZE	SAMPLE SIZE	NO/QTY UNSAT ITEMS	UNITS
R 1	P301B	27	27	0	PIECES

CODE/CLASS: A.L.L. — INSPECTION RESULTS: S or U: S — INITIALS: CRH — SIGNATURE: C Robertson Ford — DATE: 09 03 81

PRIME SELLER CODE	INSPECTION PERFORMED AT: SELLER NAME/LOCATION	WORK PACKAGE NO/SHOP ORDER NO.	SUB-SELLER CODE
41020	ITT GRINNELL KERNERSVILLE, N.C.		

WELD NOS: 1 2 3 4 5 6 7

ITEM NO.	MAT'L/EQUIPMENT NOS.	S OR U	ITEM NO.	MAT'L/EQUIPMENT NOS.	S OR U
01	NM91472X	S	04	KM18452X	S
02	WM18392X	S	05	WM219382X	S
03	NM18432X	S	06	NM211021X	S

ATTR. NO. COLS	ATTR. CODE	ATTRIBUTES	RESULT OR RESPONSIBILITY	NO/QTY UNSAT SUMMARY	REFERENCE N&D OR E&DCR NO.	USE FOR SINGLE UNSAT ITEM ONLY ACTION	USE FOR SINGLE UNSAT ITEM ONLY QC REINSP
1 14-22	D06	Documentation	S				
2 23-31	M01	Shipping Damage	S				
3 32-40	B01	Identification/Marking	S				
4 41-49	M03	Protective Covers/Seals	S				
5 50-58	W01	Cleanliness	S				
6 59-67	W06	Dimensions	N				
7 68-76	M03	Coatings/Preservatives	N				

ATTR. NO. COLS	ATTR. CODE	ATTRIBUTES	RESULT OR RESPONSIBILITY	NO/QTY UNSAT SUMMARY	REFERENCE N&D OR E&DCR NO.	USE FOR SINGLE UNSAT ITEM ONLY ACTION	USE FOR SINGLE UNSAT ITEM ONLY QC REINSP
8 14-22	M02	Physical Damage	N				
9 23-31	W18	Weld Preparation	N				
10 32-40	W05	Workmanship	N				
20 41-49	W25	Assigned Storage Level	S				
50-58							
59-67							
68-76							

ACTION ASSIGNED: 1. 2.

SIG/INITIALS DATE

ACTION COMPLETED: 1. 2.

SIG/INITIALS DATE

QC REINSPECTION ALL ITEMS SAT

SIG/INITIALS DATE

JOB ORDER NO. 12187

DWG. NO/REV. N/A

PQA DOCUMENTATION HAS NOT BEEN FORWARDED TO THE SITE.

REF. PQC N&D D012

RH Bunch 6/27/83

J. O. NO 12187

SEP 16 1981

STONE & WEBSTER ENG. CORP. CONTROL LEVEL 2

RECEIVED

SPEC. NO/ADD NO/REV. DATE: P301B ADD 3 10/1/80 REV. 2 8/24/79

PO. CHANGE NO. (PQA ONLY): N/A

ATTR. LIST NO/IPS NO.: N200AD77FA001/00/01

CLOSERS INITIALS	NO. OF REINSP	IR CLOSED DATE NO	DAY	YR	N&D NO.	N&D APPLIES TO THESE ITEMS	N&D ISSUE DATE NO	DAY	YR

IR CLOSED & REVIEWED BY: [signature]

REMARKS: MRR # 81-7580 MRR # 81-7601 (CERTS.)

NOTED AUG 09 1981 F. J. CRYTZER

STONE & WEBSTER ENGINEERING CORPORATION-QUALITY ASSURANCE INSPECTION REPORT | SH. 2 OF 2

SUPPLEMENTAL SHEET SI (FOR ADDITIONAL MAT'L/EQUIP IDENTIFICATION NUMBERS)

IR NUMBER P 1 0 0 1 3 0 9 — A 3 (SHOP ONLY)

ITEM NO.		S OR U	ITEM NO.		S OR U
09	NM2110710X	S			
08	NM211096X	S			
07	MM211087X	S			
10	MM232702	S			
11	NM232712	S			
12	MM33544	S			
13	NM331444	S			
14	MM331502	S			
15	NM34884	S			
16	MM577254X	S			
17	MM578624X	S			
18	NM6312	S			
19	MM6317	S			
20	MM63284	S			
21	NM669504X	S			
22	NM6623232X	S			
23	MM662314X	S			
24	NM725577	S			
25	MM738834X	S			
26	NM794084	S			
27	NM794112	S			

3 AC 4/18/81

REMARKS:

TERIAL RECEIVING REPORT — TR#P10138 — STONE & WEBSTER — J.O. NO. 14177 — P.O. NO. P-301B

T.I. Grinnell — REQ. NO. 18587 — OF Cuzner

SHIPPING POINT: Kernersville N.C. — SHIPPERS NUMBER: 2145

NUMBER & TYPE OF UNITS RECEIVED: 27 PCS

RECEIVED	CAR NUMBER	PRO OR W/B NUMBER		SHIPMENT	WEIGHT
9-3-81	—	600635	☒ PREPAID $ ☐ COLLECT $	☒ PARTIAL ☐ COMPLETE	18037#

CONDITION OF SHIPMENT	SHIPPING DAMAGE	DAMAGE TO BE CORRECTED BY	DAMAGE CLAIM NO.
☒ GOOD ☐ POOR	☐ APPARENT DAMAGE ☒ NO APPARENT DAMAGE	☐ FIELD FORCES ☐ RE-ORDER ☐ RETURN TO VENDOR	—

IDENTIFICATION/MARKING	CORRECT MATERIAL/ITEM	CLEANLINESS	PROTECTIVE COVERS/SEALS
☒ SATISFACTORY ☐ NOT SATISFACTORY	☒ YES ☐ NO	☒ SATISFACTORY ☐ NOT SATISFACTORY	☐ SATISFACTORY ☐ NOT SATISFACTORY

NO.	QUANTITY	UNIT	DESCRIPTION	STORAGE LOCATION
	27	PCS	Shop Fabricated Pipe Per Attached Pages 2-3.	B-3 Yard
			Load Sheet 7244 Load # 300	
			15 PCS QA CAT I. 12 PCS QA CAT II	

REMARKS — (OVER/SHORT & DAMAGE EXCEPTIONS, ETC.) FQC Accepted.

QA CAT I & II — Level D

NAME PLATE DATA (COMPLETE FOR ALL VESSELS, ENGINES, MOTORS, INSTRUMENTS, EQUIPMENT, TOOLS, ETC. CARRYING NAME PLATE)

MANUFACTURER'S NUMBER — SERIAL: PERMANENT

CAPACITY — SIZE — H.P. — RPM — VOLTS

FT. — GPM — RATING — AMPS — STEAM PRESS.

SPEC. AT — Attached Pages 2-3 — AMPS — CYCLES — OHMS — MODEL — MFG. MATERIAL

81-7880 Page 1 of 3

DATE 9-3-81 — SIGNATURE L. Gerard — MATERIAL DEPARTMENT

MATERIAL RECEIVING REPORT

A 4570-2A

STONE & WEBSTER

J.O. NO. 12180 | P.O. NO. P301B

SELLER: ITT GRINNELL INDUSTRIAL PIPING, INC.

REQ. NO. load 300 OF C. ZEHRER

SHIPPER: SAME

SHIPPING POINT: KERNERSVILLE, N.C.

SHIPPER'S NUMBER:

DELIVERED BY: W/SHIPMENT

NUMBER & TYPE OF UNITS RECEIVED: 1 CERTIFICATION

DATE RECEIVED: 9-3-81

CAR NUMBER:

PRO OR WB NUMBER:

☐ PREPAID $ ☐ COLLECT $

SHIPMENT: ☒ PARTIAL ☐ COMPLETE

WEIGHT:

CONDITION OF SHIPMENT: ☐ GOOD ☐ POOR

SHIPPING DAMAGE: ☐ APPARENT DAMAGE ☐ NO APPARENT DAMAGE

DAMAGE TO BE CORRECTED BY: ☐ FIELD FORCES ☐ RE-ORDER ☐ RETURN TO VENDOR

DAMAGE CLAIM NO.:

IDENTIFICATION/MARKING: ☐ SATISFACTORY ☐ NOT SATISFACTORY

CORRECT MATERIAL/ITEM: ☐ YES ☐ NO

CLEANLINESS: ☐ SATISFACTORY ☐ NOT SATISFACTORY

PROTECTIVE COVERS/SEALS: ☐ SATISFACTORY ☐ NOT SATISFACTORY

P.O. ITEM	QUANTITY	UNIT	DESCRIPTION	STORAGE LOCATION
	1	EA.	CERTIFICATE OF COMPLIANCE ON SHOP FABRICATED PIPE.	FQC
			LOAD SHEET NO. 7244 - 27 pc.	
			12 pc cat II 15 pc cat I	
	1H	ea	NPP-1 asme data report	
			drawings in package	
			CERTS REC'D ☑	
			NOTED F. Q. C. SIGNATURE SEP 17 1981 R. M. HARDISON	68 pg.
			CERTS NOT REC'D ☐	

REMARKS — (OVER/SHORT & DAMAGE EXCEPTIONS, ETC.) RECEIVED W/SHIPMENT. REFER TO MRR # 81-7880

QA CAT. I & II

LEVEL B

NAME PLATE DATA (COMPLETE FOR ALL VESSELS, ENGINES, MOTORS, INSTRUMENTS, EQUIPMENT, TOOLS, ETC. CARRYING NAME PLATE)

SERIAL NUMBER/HEAT NUMBER				SERIAL NUMBER	
CAPACITY	SIZE	H.P.	R.P.M.	H.P.	R.P.M.	VOLTS
FT.	GPM	RATING		AMPS	STEAM PRESS.
VOLTS	AMPS	WATTS	OHMS		
MFG.	MODEL			MFG.	

81-0601 | DATE 9-3-81 | SIGNATURE D. Bolster

T-3238 S&W CERTIFICATE OF COMPLIANCE PAGE 1 OF 3

CLIENT	J.O.	P.O. NO.	
Niagara Mohawk	12177.50	NMP2-P301B	
PROJECT	**SPECIFICATION NO.**	**REV.**	**ADDENDA**
9 Mile Point Nuclear Station #2	NMP2-P301B	2	3
SELLER	ITT Grinnell Industrial Piping, Inc. - Kernersville, N.C.		
PRODUCT DESCRIPTION	Shop Fabricated Piping		

SELLER'S CERTIFICATION

I HEREBY CERTIFY THAT THE PRODUCT(S) IDENTIFIED HEREIN HAVE BEEN MANUFACTURED UNDER A CONTROLLED PROGRAM AND ARE IN COMPLIANCE WITH THE APPLICABLE CODES, STANDARDS AND SPECIFICATIONS LISTED IN PURCHASE ORDER NO. P301B REV 26

S & W ITEM NO.	QUANTITY
See attached Load Sheet No. 7244	27 pcs. cst 1 & 2

ALL SUPPORTING DOCUMENTATION REQUIRED BY THE ABOVE REFERENCED DOCUMENTS HAVE BEEN ISSUED TO THE ENGINEERS AUTHORIZED REPRESENTATIVE.

SIGNED Betty Cook DATE 8-31-81

TITLE Lead QC Coordinator SELLER ITT Grinnell I.P.I.

STONE & WEBSTER QUALITY ASSURANCE CERTIFICATION

"THIS IS TO CERTIFY THAT EVIDENCE SUPPORTING THE ABOVE SUPPLIERS' CERTIFICATION STATEMENT HAS BEEN REVIEWED AND THAT NO DEVIATIONS FROM PROCUREMENT QUALITY ASSURANCE REQUIREMENTS HAVE BEEN FOUND UNLESS NOTED BELOW"

*AS APPLICABLE

- ☐ AUTHORIZED DEVIATIONS AND NONCONFORMANCES HAVE BEEN NOTED BELOW.
- ☑ ALL SPECIFIED SUPPORTING DOCUMENTATION HAS BEEN REVIEWED AND FORWARDED TO S & W PROCUREMENT QUALITY ASSURANCE FOR DOCUMENTATION REVIEW.
- ☐ DOCUMENTATION PREVIOUSLY SUBMITTED.
- ☐ DOCUMENTATION TO REMAIN IN SELLERS FILES.

SIGNED [signature] DATE 8-31-81 IR NO. 1019, 2054, 3086, 4129

TITLE Senior Engineering Representative

NONCONFORMANCES FROM PURCHASE ORDER REQUIREMENTS

817091

MA-6 Page 1 of 2
1-78

ITT GRINNELL INDUSTRIAL PIPING, INC.
FINAL LOADING SHEET

HRE 223

Loading Sheet No. 7244 Date Loaded 8/28/81 Bill of Lading No. _____

Customer Order No. CONTRACT # 7100 Date Shipped _____ Routing _____

Sold to STONE & WEBSTER ENGINEERING CORPORATION C/O NIAGARA MOHAWK Address 9 MILE POINT NUCLEAR STATION LYCOMING, N.Y.

Ship to SAME Address SAME

Destination	Car Number	Weight	No. Pcs.	Rate
LYCOMING, N.Y.	DAILY 600635	18,037	27	

Kernersville Plant No.	Piece Mark	Weight	Remarks
NM 19 142X	09-14-2-WCS-89-1-142	810	
NM 18 39X	18-8-2-CCP-341-3-39	81	
NM 18 43X	18-9-2-CCP-104-3-43	82	
NM 18 45X	18-9-2-CCP-106-3-45	65	8-0129 28-81
NM 21 938X	21-123-2-SWP-172-3-938	253	
NM 21 021X	21-134-2-SWP-163-3-1021	96	
NM b h 10 71X	21-141-2-SWP-181-3-1071	131	
NM b h 1 096X	21-75-2-SWP-129-3-1096	9	N. M. P. C. NINE MILE NUC. STATION
NM 23 1 108X	21-74-2-SWP-131-3-1108	179	J.O. 12177 SHOP FAB. PIPE PIECE MARK:---------
NM 23 270	23-4-2-CNM-32-4-270	3254	ITT GRINNELL KERNERSVILLE, N.C. 27284
NM 23 272	23-5-2-CNM-211-4-272	3254	
NM 33 54	33-5-2-DSR-114-4-54	1175	
NM 33 144	33-22-2-DSR-16-4-144	1905	
NM 33 150	33-24-2-DSR-30-4-150	1905	
NM 34 88	34-2-2DSM-49-4-88	317	
NM 57 75X	57-4-2-ICS-1-2-75	117	
NM 57 86X	57-3-2-ICS-38-2-86	138	
NM 63 2	63-2-2-OFG-6-4-2	112	
NM 63 7	63-2-2-OFG-12-4-7	112	
NM 63 28	63-4-2-OFG-33-4-28	178	
NM 66 95X	66-18-2-RHS-5-2-95	514	

817601

MA-6
1-78

Page 2 of 2. ITT GRINNELL INDUSTRIAL PIPING, INC.
FINAL LOADING SHEET

Page 323

Loading Sheet No. 7244 Date Loaded 8/28/81 Bill of Lading No. _____

Customer Order No. CONTRACT # 7100 Date Shipped _____ Routing _____

Sold to STONE & WEBSTER ENGINEERING CORPORATION C/O NIAGARA MOHAWK Address 9 MILE POINT NUCLEAR STATION LYCOMING, N.Y.

Ship to SAME Address SAME

Destination	Car Number	Weight	No. Pcs.	Rate
LYCOMING, N.Y.	DAILY 600635	18037	27	

Kernersville Plant No.	Piece Mark	Weight	Remarks
NM 66 232X	66-36-2-~~RES~~-6-2-232 ✓	199	
NM 66 331X	66-49-2-~~RES~~-170-2-331 ✓	1941	
NM 72 57	72-9-2-SVE-634-4-57 ✓	672	
NM 73 88X	73-11-2-SVV-31-3-88 ✓	455	8-0129 8-28-81
NM 79 408	79-53-2-~~FPW~~-320-4-408	23	
NM 79 4112	79-53-2-~~FPW~~-343-4-412 ✓	60	
			N. M. P. C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2-P201B J.O. 12177 SHOP FAB. PIPE
			ITT GRINNELL KERNERSVILLE, N.C. 27284

817F01

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*
(As Required by the Provisions of the ASME Code Rules)

Sheet 1 of 3

1. Fabricated by ITT GRINNELL INDUSTRIAL PIPING, INC. Kernersville, N.C. 7100 Order No.
(Name and Address of Fabricator)

2. Fabricated for Stone and Webster Engineering Corp. Cherry Hill, N.J. Order No. NMP2-P301B
(Name and Address)

3. Owner Niagara Mohawk Power Corp. 4. Location of Plant Scriba, New York

5. Piping System Identification Reactor Water Clean-Up
(Brief description of intended use, main coolant, etc.)

(a) Drawing No. NM-9-142X Prepared by ITT GRINNELL INDUSTRIAL PIPING, INC.

(b) National Board No. N/A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class Nuc.-1

Edition 1974, Addenda Date None, Case No. N/A

Remarks: Manufacturers' Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report MF
(Name of Part — Item number, Manufacturer's name, and identifying stamp)

Supplemental sheets--- #2 ---Drawings

#3 ---Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark No. 09-14-2-WC5-89-1-142
(include—mark no.—material spec.—nom. pipe size—schedule or thickness—length—fittings—flanges, etc.)

See Attached Sheets

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 121.7 SHOP FAB. PIPE
PIECE MARK----------
[illegible] N.C. 27284

S. W. E. C. INSPECTED

We certify that the statements made in this report are correct and that the fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE.

Date 8-4-81 Signed ITT GRINNELL INDUSTRIAL PIPING, INC. By C. Clark Barrett

Certificate of Authorization Expires 7-16-82 Certificate of Authorization No. N-1456

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of VA. and employed by ** of Hartford, Ct. have inspected the piping described in this Data Report on 8-6 19 81, and state that to the best of my knowledge and belief, the Manufacturer has constructed this piping in accordance with the applicable Subsections of ASME Code, Section III.** The Hartford Steam Boiler Inspection & Insurance Company

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the piping in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

8176010

Date 8-6, 1981 Commissions VA-321
(Inspector) National Board, State, Province and No.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 7, "Remarks".

2 of 3

ITT GRINNELL INDUSTRIAL PIPING, INC.

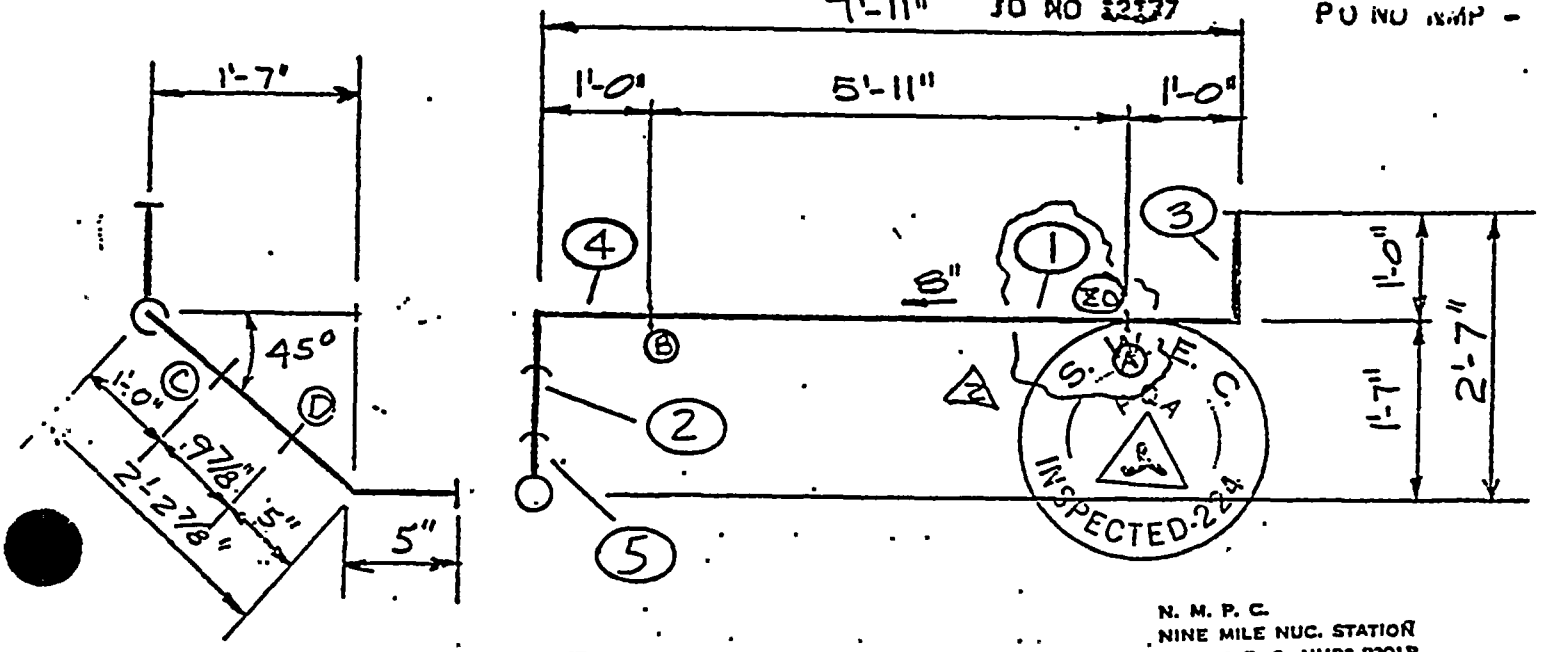
KERNERSVILLE, N. C.

FORM-EN-101 REV. 2/79
Q. A. FORM N2.1C
SHT. 1 OF 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

DRW'N VRAY 12-4-79 CHK'D RDJ 1-24-81
1 REV. JDA 4-7-81 CHK'D VFEG 4-7-81
2 REV. BM 4-16-81 CHK'D DB 4-17-81
REV. _____ CHK'D _____

NINE MILE POINT NUCLEAR STATION UNIT 2
NIAGARA MOHAWK POWER CORPORATION
JO NO 12177 PO NO NMP -



PIPE - SCH 160 SA106B

FITT - SCH 160 SA234WPB

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

IN SERVICE INSPECTION REQ'D. GRIND WELDS PER NM-025

ENDS MACH PER SK# NM-D2

CLEANLINESS CLASS C

ASME CODE APPROVED

QUALITY CONTROL

REVISION

Fabricated for: Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System See Below

CLASS Nuc. 1 LINE SPEC. 1511 APP. CODE ASME III NO. REQ'D 1

Radiography (RT)	✓	Special Marking		Preheat		Cert. of Compliance	
Mag. Particle (MT)	✓	Special Cleaning	✓	Heat Treat		Mill Test Reports	✓
Liq. Penetrant (PT)		Painting		Code Stamp	✓	Data Reports	✓

SYSTEM WCS FAB. SPECS. JS-137

REF. DRW'G NO. EP-74A 3 09-14 4 PRESS. 2250 PSI. TEMP. 575 °F. WT. 810 LBS.

PIECE MARK 09-14-2-WCS-89-1-142 REGISTER NM 19 1 1 1412X

817601 REVISION

QUALITY CONTROL 3

ITT GRINNELL INDUSTRIAL PIPING, INC.

Sheet 2 of 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SYRACUSE NY

MATERIALS RECORD
PRODUCTION PLANNER

REGISTER NM 19 142X

REV. NO. BY DATE

PIECE MARK 09-14-2-WCS-89-1-142

ITEM	DESCRIPTION: PART NUMBER/STOCK NUMBER	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL: DOCUMENT	IN PROCESS	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE NM-1--	F	5	1/1	SA106B 58400-SN-1	4-30-81 Q110 357 lbs	V.T.	4-7-81 Q159	
2	8" SCH 160 SMLS C.S. PIPE NM-1--	F	9	7/8	SA106B 58400 SN-1	357 lbs	Q112 4-28-81	4-7-81 Q159	
3	8" SCH 160 SMLS 90° LRWE NM-1003-5-	E			SA234WPB				
4	8" SCH 160 SMLS 90° LRWE NM-1003-5-	E			SA234WPB				
5	8" SCH 160 SMLS 45° LRWE NM-1003-6-	E			SA234WPB See attached sheet				
	8" C.S.E.P.	E	2						

Fabricated for Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System W.C.S.

SHOP COPY LAYOUT

REVISION

ITT GRINNELL IND. PIPING
KERNERSVILLE, N. C.

INSPECTED 224 S.W.E. P.O.

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
Piping System W.C.S.
PIECE MARK: 09-14-2-WCS-89-1-142
ITT GRINNELL
KERNERSVILLE, N.C. 27284

CODE: ASME III, NUC. 1 CUST. LINE SPEC. 151

SPEC: 15-137-12 HEAT

MFG CODE L X

S/N. 23

UNIT PRICE P.O. | DISC'N VENDOR | NET

TOTAL

ACCOUNTING

ITT GRINNELL INDUSTRIAL PIPING INC.

FORM EN-107 REV. [illegible]
O. A. FORM N2.1F

Sheet 2 of 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

REGISTER NM 09 142x
REV. NO. BY DATE

PIECE MARK 09-14-2-WCS-89-1-142

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER		FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL DOCUMENT	IN PROCESS	INSPECTION	WISE LOCATION
1	8" SCH 160 SMLS C.S. PIPE					SA 106				
	NM-[illegible]-	F		5	11	58400 SN-1	P.		RUG AS 4-[illegible]-81	
2	8" SCH 160 SMLS C.S. PIPE					SA 106				
	NM-[illegible]-	F		9	7/8	58400 SN-1			RUG AS 4-[illegible]-81	
3	8" SCH 160 SMLS 90° LRVE					SA 234 WPB		(4-30-81)		
	NM-1003-5-	E				AD8NH SER # 897 V	Bwf-643 8aff	Q103		C1-10-1
4	8" SCH 160 SMLS 90° LRVE					SA 234 WPB				" "
	NM-1003-5-	E				AD8NT SER # 898	Bwf-643 8aff	Q122 4-22-81		
5	8" SCH 160 SMLS 45° LRVE					SA 234 WPB				" "
	NM-1003-6-	E				AD8NN SER # 896 V	Bwf-686 8aff	Q12 4-22-81		
	8" C.S.E.P.									
	- - -	E		2		SUPPLEMENTAL MAT'L RECORD				

N. M. P. C.
NINE MILE NUC. STATION
UNIT - 2 P. O. NMP2-P30158
Item 2.9 12" Stub-End Pipe
PIECE MARK: [illegible]
ITT GRINNELL
KERNERSVILLE, N.C. 27284

SUPPLEMENTAL MATERIALS RECORD

INSPECTED C.A. SWEPO

DELIVERED APR 16 1981

GA [illegible]
MAI 19 198
07:

CODE ASME III, NUC. I. CUST LINE SPEC 151
JOB SPEC US-137-12 BATCH
MFG CODE L X
SIZE 8

UNIT PRICE P.O.	DIS VENDOR	NET
TOTAL		
ACCOUNTING		

wp

ITT GRINNELL INDUSTRIAL PIPING, INC.
P. O. Box 566, Kernersville, N. C. 27284

Form N9.1B

EXAMINATION AND DOCUMENTATION CHECK LIST

Nine Mile Point — NMP2-P301B
Plant: Nuclear Sta. Unit 2 Job: Niagara Mohawk Corp. Cont. No.: Shop Fabricated Piping
System: WCS Ref. Dwg.: 9-14 Class: Nuc. 1
Piece Mark: 9-14-2-WCS-89-1-143 Register No.: NM-9-143X

P.O. & Spec. No. NMP2-P301B

Req'd	In File	
✓(X)	JO	Data Reports
(X)	N/A	Materials Manufacturer Code Data Reports
✓(X)	JO	Shop Traveler (N4.1B)
(N/A)	N/A	Operations Record - Production Planner (N4.1A)
✓(X)	JO	MT Reports
✓(X)	JO 5-14-79 N/A SO	PT Reports
(X)	NA	UT Reports
✓(X)	JO	RT Reports - Including final acceptance
(X)	N/A	Furnace Load Sheet (N8.1A)
(N/A)	N/A	Isometric Sketch
✓(X)	JO	Engineering Shop Sketches (N2.1C)
✓(X)	JO	Materials Records (N2.1F)
(N/A)	N/A	Index of Certificates
(X)	Previously Submitted	Certified Material Test Report
(X)	Previously Submitted	Weld Procedure Qualification
(N/A)	N/A	Welder Qualification
(N/A)	N/A	NDE Personnel Qualification
(X)	N/A	Nonconformance Reports
(N/A)	N/A	Materials Receipt Reports (N3.3A)
(N/A)	N/A	Weld Chemical Analysis

Other Documents Required by Owner or his Agent

(X)	Previously Submitted	Approved Procedures
(X)	Previously Submitted	Certified Product Report

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

S. W. E. C. PQA INSPECTED 224

Sargent & Lundy Engineering Corporation
[X] APPROVED AS DEFINED IN DOC. SPECIFICATIONS
[ ] UNACCEPTABLE
[ ] APPROVED AS REVISED AS DEFINED IN THE SPEC.
[ ] REVISED
J.O. No. 12177.50
SPEC. No. NMP2-P301B
DATE 5-7-79
BY R. HUGGINS

Signed: James M. Shinn
Quality Control Manager (NWD)

Where item not required, mark NA

Special Contract System Applicable Documents:

(X)	N/A	PWHT Total Time at Temperature
(X)	N/A	Painting Documentation
(X)	N/A	Supplemental Tests - Special Requirements Class 4

TRANS. #05 00310

10 of 17

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*

(As Required by the Provisions of the ASME Code Rules)

ITT Grinnell Industrial Piping, Inc. Sheet 1 of 3

1. Fabricated by Old Highway 421, Kernersville, NC 27284 (Name and Address of Fabricator) Order No. 7100

2. Fabricated for Stone and Webster Engineering Corp. Cherry Hill, NJ (Name and Address) Order No. NMP2-P301B

3. Owner Niagara Mohawk Power Corp. 4. Location of Plant Scriba, New York

5. Piping System Identification Reactor Water Clean Up (Brief description of intended use, main coolant etc.)

(a) Drawing No. NM-9-143X Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class NUC - 1

Edition 1974, Addenda Date None, Case No. N/A

Remarks: Manufacturers' Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report N/A (Name of Part — Item number, Manufacturer's name, and Identifying stamp)

Supplemental Sheets 2 ---Drawings
3 ---Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number 9-14-2-WCS-89-1-143 (include—mark no.—material spec.—nom. pipe size—schedule or thickness—length —fittings—flanges, etc.)

See Attached Sheets

W. E. C. Sig. Q1 INSPECTED 224

We certify that the statements made in this report are correct and that the fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE.

Date 1-10-83 Signed * By

* ITT Grinnell Industrial Piping, Inc. (Repairing)

Certificate of Authorization Expires 7-16-85 Certificate of Authorization No. N-2444-5

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of U.A. and employed by ** of Hartford, Ct. have inspected the piping described in this Data Report on 1-18 1983, and state that to the best of my knowledge and belief, the Manufacturer has constructed this piping in accordance with the applicable Subsections of ASME Code, Section III. ** The Hartford Steam Boiler Inspection and Insurance Company

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the piping in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 1-18, 1983 Commissions U.A. 321 (Inspector) National Board, State, Province and No.

TRANS. #05 00310

*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 7, "Remarks".

9. Description of Field Fabrication

10. Field Hydrostatic Test _____ psi.

We certify that the field fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE, Class _____, Edition _____, Addenda Date _____ Case No. _____

Date _____, 19____ Signed _____ By _____
(Fabricator) (Representative)

Our Certification of Authorization to use the _____ Symbol Expires _____ 19____
Certificate of Authorization No. _____

CERTIFICATE OF FIELD FABRICATION INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of _____
and employed by _____ of _____
have compared the statements in this Manufacturer's Data Report with the described piping and state that the parts referred to as data items _____, not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed this piping in accordance with the applicable section of the ASME CODE SECTION III.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ 19____

_____ Commissions _____
Inspector National Board, State, Province and No.

293

FORM-EN-101 REV. 2/78
Q.A. FORM N2.1C

ITT GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE, N. C.

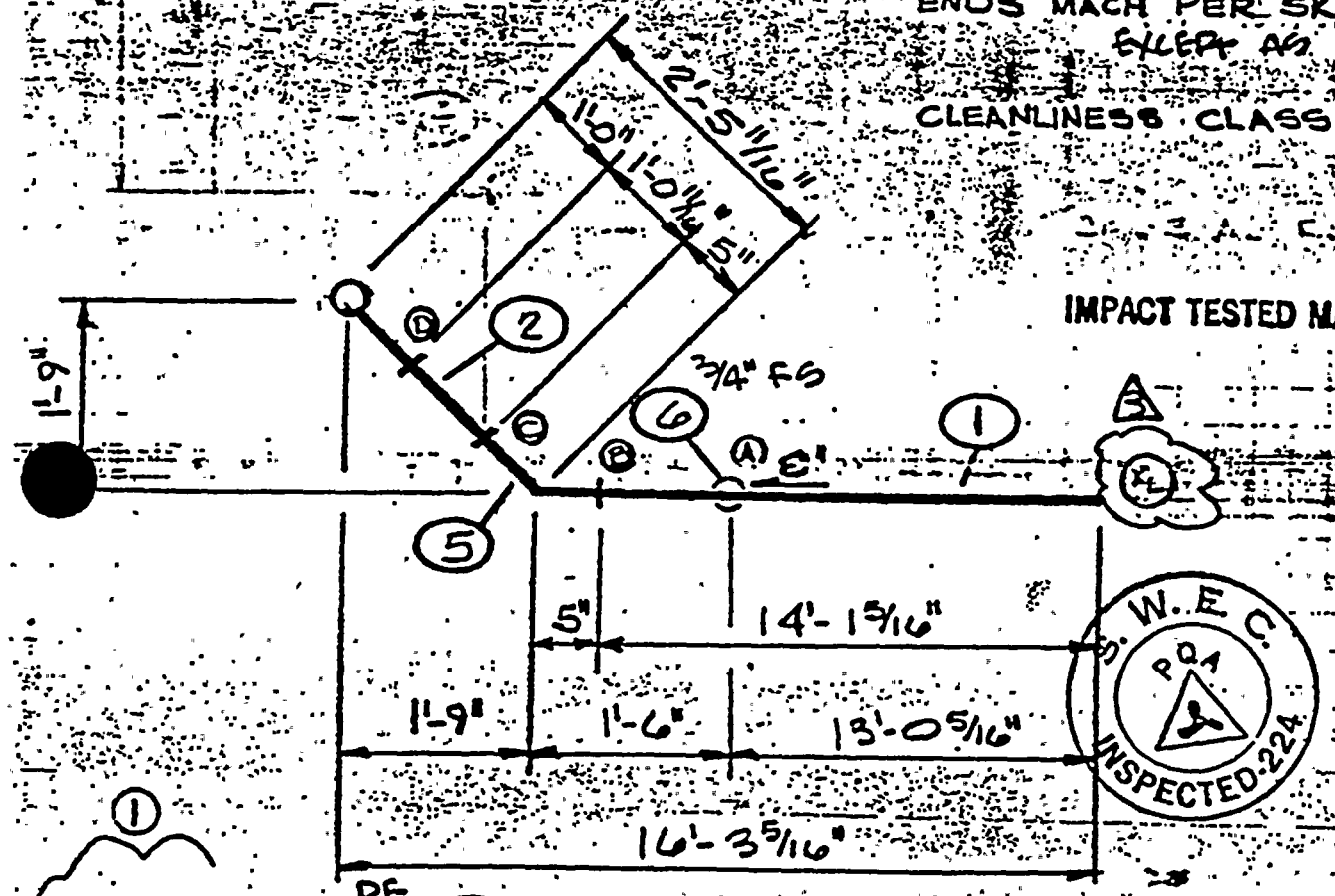
Sht 1 of 2
SO 12-9-81

NO. 7100
LOCATION NIAGARA MOHAWK SCRIBA NY

DRW'N WRAY 12-5-79 CHK'D MIL 11-17-81
1 REV. DB 5-20-82 CHK'D FEG 5-27-82
2 REV. DWS 6-17-82 CHK'D FEG 6-17-82
3 REV. DB 11-12-82 CHK'D FEG 11-12-82

NINE MILE POINT NUCLEAR STATION UNIT 2
NIAGARA MOHAWK POWER CORPORATION
JO NO 12177 PO NO NMP2-

ENDS MACH PER SK NM-D2
EXCEPT AS NOTED
CLEANLINESS CLASS C



IMPACT TESTED MATERIAL

REVISION

INSERVICE INSPECTION-2
GRIND WELDS PER NM-D25

QUALITY CONTROL

Fabricated for Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System

N. M. P. 2
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

CLASS NUC. 1 LINE SPEC. 151 APP. CODE ASME III NO. REQ'D 1

Radiography (RT)	✓	Special Marking		Preheat		Cert. of Compliance	
Mag. Particle (MT)	✓	Special Cleaning	✓	Heat Treat		Mill Test Reports	✓
Pen. Penetrant (PT)		Painting		Code Stamp	✓	Data Reports	✓

SYSTEM WCS FAB. SPECS. JS-137

REF. DRW'G NO. EP-74A△, 09-14△ PRESS. 2200 PSI TEMP. 575 °F. WT. 1510 LBS.

PIECE MARK 9-14-2-WCS-89-1-143 REGISTER NM 19 143X

00210

ITT GRINNELL INDUSTRIAL PIPING, IN

FORM [illegible] REV. 8-20-82
Q.A. [illegible] 2.1F

Sheet 2 of 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

PIECE MARK 9-14-2-WCS-89-11-143

REGISTER NM 9 143X
REV. NO. BY DATE

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER	QTY	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL DOCUMENT	IN PROCESS	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE SA-333 GR 6									
	NM-9[illegible]	F	14	1	5/16	60775 SN 12 WT 2-1	P527	Q172 10-22-82	Q129 7-8-82	
2	8" SCH 160 SMLS C.S. PIPE SA-333 GR 6									
	NM-9[illegible]	F	10	11	11/16	60775 SN 12 WT 2-1	P527	Q172	Q129 7-8-82	
3	8" SCH 160 SMLS C.S. PIPE SA-333 GR 6									
	NM-9[illegible]	F	17	3	3/8	(1) 60775 SN 12 WT 2-1	P527	Q172	Q129 7-8-82	
4	8" SCH 160 SMLS C.S. 90° LRWE SA234WPB									
	NM-1003-5-	E	1			PKR	BWF8911	Q172		D14
5	8" SCH 160 SMLS C.S. 45° LRWE SA234WPB									
	NM-1003-6-	E	1			RBE	BWF9082	Q172	DELIVERED 30 JUN 82	
6	8" x 3/4" 6000# C.S. SOL SA105						SWE-181	Q172		
	NM-3166-	E	1			P595		102-82		8246-01
	8" C.S.E.P.									
		E	2							
	3/4" C.S.E.P.									
		E	1							

INSPECTED

SHOP COPY LAYOUT

REVISION

Fabricated for: Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System LCS

NINE MILE NUC. STATION
UNIT-2 P.O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITT GRINNELL IND PIPING
KERNERSVILLE, N. C.

GATHERED

CODE ASME III, CL. 1
CUST LINE SPEC 151
PATCH
MFG CODE L X
SIZE 8

UNIT PRICE P.O. | DIS VENDOR | NET
TOTAL
ACCOUNTING 07

JUN 23 1982

8210070

ITT Grinnell Industrial Piping, Inc. **TRAVELER** SHEET 1 OF 2

PROJECT NIAGARA CONTRACT 7100 PC. MK. A-14-2-WCS-89-1-143 REG. # NM 9 143V

SPECIFICATION JS-137-14

WELD	FIT-UP/PREHEAT			BAT-41	ROOT		INTERMEDIATE		FINAL			RT DATE			MAG	IP
	WELDER I.D.	WELD MAT'L	Q.C. INSP.		WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	Q.C. INSP.	Q.C.	A-I	CUST.	ROOT	FINAL
A	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 1-3							
	S114	NAGAC	Q172		C185	NAGAC	C185	NAEAW	C185	NAEAW	Q171	—	—	—	—	N116
DATE	10/22/82		10/22/82		10/24/82		10/24/82		10/24/82		11/1/82				11-4-82	
B	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	S114	NAGAC	Q172		C185	NAGAC	C185	NAEAW	C139	NGDAB NAYAB	Q170	11/24/82	11/30/82	12/7/82	—	N116
DATE	10/22/82		10/22/82		10/24/82		10/24/82		10/26/82		11/3/82				11-4-82	
C	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	S80	NAGAC	M10		C306	NAGAC	C306	NAEAW	C370	NAYAE NGDAB	Q172	11/24/82	11/30/82	12/7/82	—	N116
DATE	8/2/82		8/2/82		8-4-82		8-4-82		8-23-82		10/20/82				11-4-82	
D	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	S80	NAGAC	M10		C306	NAGAC	C306	NAEAW	C370	NAYAE NGDAB	Q172	11/24/82	11/30/82	12/7/82	12-7-82	N116
DATE	8/2/82		8/2/82		8-4-82		8-4-82		8-23-82		10/20/82				11-4-82	
Code Plate	PROC. 5-4				PROC.		PROC.		PROC.						—	N116
	S114	NAGAC	Q172									—	—	—		
DATE	10/22/82		10/22/82												11-4-82	

STRESS DATE N/A

FINAL INSP Q177 Q150 1-17-82

SPECIAL OPERATIONS: C DIM N/A

Q.C. DOC. APPROVAL SB 1-18-83

SQUARE UP S120 S105 1-4-83 1-17-82 Q150 Q177 1-4-83 11-10-82 R3

N/A

WALL THK. M. P. C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2-P301B J. O. 12177 SHOP FAB. PIPE PIECE MARK: ITT GRINNELL

A/I STAMP/DATA REPORT 1-18-83

CLEAN UP A 11/7/82 D.C. 12-2-82

CUST. INSP MM 12-7-82

OTHER

CUST DOC. APPROVAL

TAG # 89

0 0 3 1 0

3

ITT Grinnell Industrial Piping, Inc. TRAVE[illegible] SHEET 2 OF [illegible]

PROJECT NIAGARA CONTRACT 7100 PC. MK. # 914-2-WCS-FW-1-143 REG. # [illegible]

WELD	FIT-UP/PREHEAT			BACKING	ROOT		INTERMEDIATE		FINAL			RT DATE			MAG	LP
	WELDER I.D.	WELD MAT'L	Q.C. INSP.		WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	Q.C. INSP.	Q.C.	AI	CUST.	ROOT	FINAL
E	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4			12/27/82	12/29/82	1/10/83		N116
	S218	NAGAC	Q162		C212	NAGAC	C212	NAEAW	C610	NAYAE / NGDAB	Q172					
	DATE 9/14/82		9/14/82		10/12/82		10/13/82		10/20/82		10/20/82				11-4-82	
XL	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 1-3			11/24/82	11/30/82	12/7/82		
	BKEINE C520	NAGAC	Q171						C520	NAEAX / NAEAW	Q172					N116
	DATE 11-12-82		11-12-82						11-12-82		11-12-82				11-16-82	
Panel E	PROC.				PROC. 5-4		PROC. 1-3		PROC. 1-3			12/27/82	12/29/82	1/10/83		N116
					C33	NAGAD	C33	NAEAW	C33	NAEAX	Q167					
	DATE				12/16/82		12/16/82		12/16/82		12/16/82				1-4-83	
	PROC.				PROC.		PROC.		PROC.							
	DATE															
	PROC.				PROC.		PROC.		PROC.							
	DATE															
	PROC.				PROC.		PROC.		PROC.							
	DATE															
	PROC.				PROC.		PROC.		PROC.							

INSPECTED S.W.E. P.O. 24

NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3011
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

DWG. #03 00310

Req. No. Nuc-1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Form N8.3A Date 11-22-82

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-___-143X	9-14-2-WCS-89-1-143	__B	8" S160	C185-R1 C139-B

		INTERPRETATION												Comments	Interpretation	
		Film Interval	Defect Type												ACC.	R
			LP	LF	S	P	BT	UC	C	CR	T	HL				
	Views 4															
	Source Ir192															
	Source Curies or KVP & MA 50	A-E												process clr	K	
	Source Size or Focal Spot .104x.110	E-I				A								M. eH	1	
RADIOGRAPH	Source Film Distance 8.625	I-M												Thank process clr	K	
	Time 1:25	M-T												process clr	K	
	Actual Weld Thickness .968															
	Penetrameter 17															
	Sensitivity 2T															
	Shim Thickness .062															
	Film Size 4½x10													N. M. P. C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2-P301B J. O. 12177 SHOP FAB. PIPE		
	Film Type 65													PIECE MARK:--------- ITT GRINNELL KERNERSVILLE, N.C. 27284		
	Viewing Technique Single ☒ Double ☐															

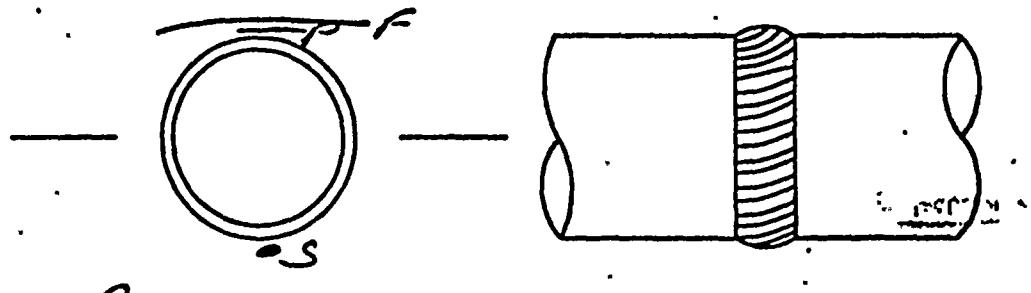
INSPECTED 2-24

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

Screen	Front	.010
	Back	.010
Development	68° Kodak 8 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4



Radiographer — Date 11-23-82 By [signature] II
Interpretation — Date 11-24-82 By [signature]
Approval — Date 11-24-82 By [signature]

Customer Niagara Mohawk
Contract 7100
Inspection Standard RTP-3-1 11-5-82 By [signature] RTA-1-1
Authorized Insp.
Customers Approval — Date 12-7-82 By [signature]

Location Nine Mile Point Unit 2
Job No.
Acceptance Standard

Req. No. Nuc.1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-22-82

Form N8.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-143X	9-142WCS-89-143	C	8" S160	C306-R1 C576-B

Views	4
Source	Ir192
Source Curies or KVP & MA	50
Source Size or Focal Spot	.104x.10
TECHNIQUE — Source Film Distance	8.625
TECHNIQUE — Time	1:20
TECHNIQUE — Actual Weld Thickness	.968
TECHNIQUE — Penetrameter	17
TECHNIQUE — Sensitivity	4T
Shim Thickness	.062
Film Size	4½x80
Film Type	65
Viewing Technique	Single [X] Double ☐
Screen — Front	.010
Screen — Back	.010
Development — 68° Kodak 6 min.	
Development — Automatic	X
Welding Procedure — Root	5-4
Welding Procedure — Intermediate	1-3
Welding Procedure — Balance	3-4

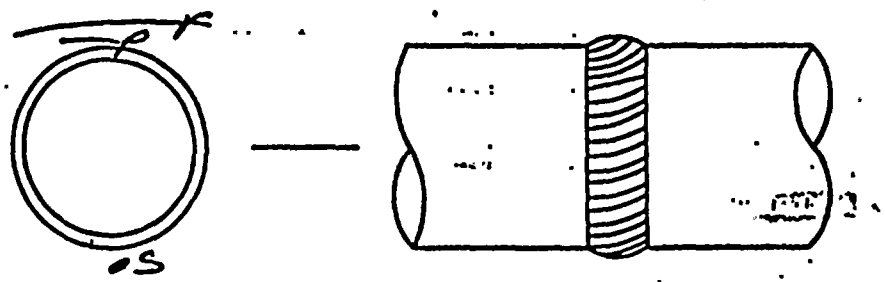
INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
A-E											-	A	
E-I											-	A	
I-M											-	A	
M-A											-	A	
											-		
											-		
											-		
											-		
											-		

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P30115
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
TURNERSVILLE, N.C. 27526



Radiographer — Date 11-23-82 By [signature]

Interpretation — Date 11-24-82 By [signature]

Approval — Date 11-24-82 By [signature]

Customer Niagara Mohawk

Contract 7100

Inspection Standard RTP-3.1 11-30-82

Authorized Insp. — Date 12-1-82 By [signature]

Customers Approval — Date 12-1-82 By [signature]

Location Nine Mile Point Unit 2

Job No.

Acceptance Standard RTA-1-1

TRACE #09 00310

2

Req. No. Nuc.1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours ____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-22-82

Form N8.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-143X	9-14-2KCS-89-1-143	D	8" S160	C306-RI C570-B

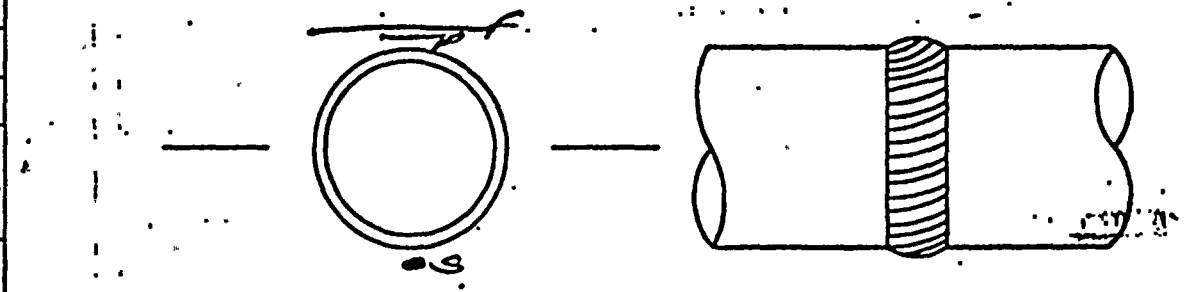
		INTERPRETATION												Comments	Interpretation	
		Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL			ACC.	R
	Views 4	A-E												process clr	A	
	Source Ir192	E-I													A	
	Source Curies or KVP & MA 50	I-M													A	
	Source Size or Focal Spot .10x10	M-A													A	
TECHNIQUE	Source Film Distance 8.625															
TECHNIQUE	Time 1:25															
TECHNIQUE	Actual Weld Thickness .968															
TECHNIQUE	Penetrameter 17															
TECHNIQUE	Sensitivity 4T															
	Shim Thickness .062															
	Film Size 4½x10													N. M. P. C. NINE MILE HUB STATION		
	Film Type 65													UNIT-2 P. O. NMP2-P3018 J. O. 18177 SHOP PAD. PIPE		
	Viewing Technique Single ☒ Double ☐													PIECE MARK: ITT GRINNELL KERNERSVILLE, N.C. 27284		

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

Screen	Front	.010
	Back	.010
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4



Radiographer — Date 11-23-82 By [signature]

Interpretation — Date 11-24-82 By [signature]

Approval — Date 11-24-82 By [signature]

Customer Niagara Mohawk Location Nine Mile Point Unit 2

Contract 7100 Job No. ____

Inspection Standard ____ Acceptance Standard RTA-1-1

Authorized Insp. — Date RTP-3-1 11-30-82 By [signature]

Customers Approval — Date 12-7-82 By [signature]

TRACE #05 00310

6

Req. No. Null In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☑ Date 12-21-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-143X	9-14-2WCS-89-1-143	ERL	8" S160	CUZ-R1 C570-B C33-R1B

Views	4
Source	Ir 192
Source Curies or KVP & MA	50
Source Size or Focal Spot	.4.1
Source Film Distance	8.625
Time	2:20
Actual Weld Thickness	.968
Penetrameter	17
Sensitivity	4T
Shim Thickness	.062
Film Size	4½x10
Film Type	55
Viewing Technique	Single ☒ Double ☐
Screen Front	.01
Screen Back	.01
Development 68° Kodak 6 min.	
Development Automatic	X
Welding Procedure Root	5-4
Welding Procedure Intermediate	1-3
Welding Procedure Balance	1-3 / 3-4

INTERPRETATION

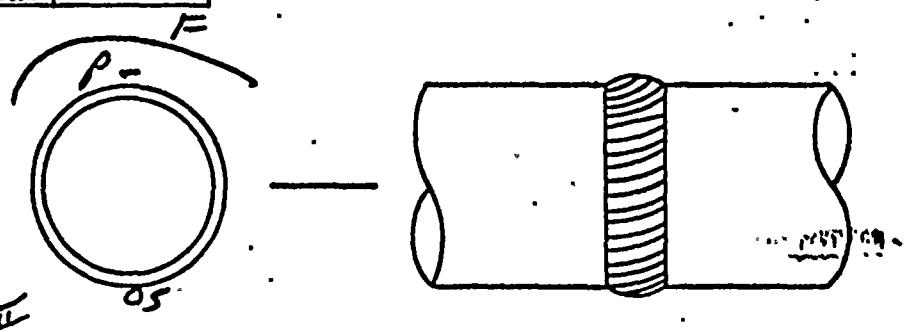
Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
A-E												✓	
E-I												✓	
I-M												✓	
M-A												✓	

N. M. P. E.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12179 SHOP FAB. PIPE
PIECE MARK: 9-14-2WCS-89-1-143
ITT GRINNELL
KERNERSVILLE, N.C. 27284

INSPECTED 12-22-82

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline



Radiographer — Date 12-22-82 By [signature] Level II

Interpretation — Date 12-22-82 By [signature] Level II

Approval — Date 12-22-82 By [signature]

Customer Niagara Mohawk Location Nine Mile Point Unit 2

Contract 7100 Job No.

Inspection Standard RTP-3-1 Acceptance Standard RTA-1-1

Authorized Insp. — Date 12-22-82 By [signature]

Customers Approval — Date 1-10-83 By Mark Mills Lev II

TAPE #03 0031 0

01

C-5

Req. No. Nuc1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-22-82

Form N8.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-___-143X	9-14-2NCS-89-1-143	___E	8" S160	C212-RI C570-B

Views	4
Source	Ir192
Source Curies or KVP & MA	50
Source Size or Focal Spot	.10x.10
TECHNIQUE — Source Film Distance	8.625
TECHNIQUE — Time	1:25
TECHNIQUE — Actual Weld Thickness	.968
TECHNIQUE — Penetrameter	12
TECHNIQUE — Sensitivity	2T
Shim Thickness	.062
Film Size	4½x10
Film Type	65
Viewing Technique	Single [X] Double [ ]
Screen — Front	.010
Screen — Back	.010
Development — 68° Kodak 6 min.	
Development — Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
A-E												K	
E-I												K	K
I-M			R								SLAG @ J	K	K
M-A												R	

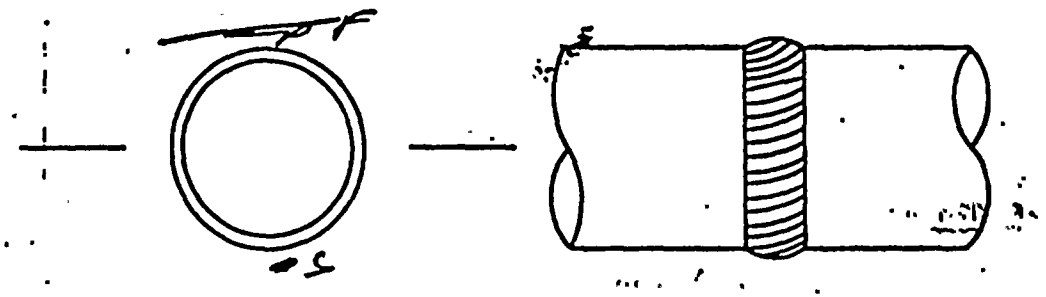
INSPECTED 22 S. W. E. P. Q. A.

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

N. M. P. 2 C.
NINE MILE POINT UNIT 2
P.O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK: ----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Post PEJ



Radiographer — Date 11-23-82 By
Interpretation — Date 11-24-82 By
Approval — Date 11-24-82

Customer Niagara Mohawk
Contract 7100
Inspection Standard RTP-3-1 11-30-82 By
Authorized Insp. — Date By
Customers Approval — Date By

Location Nine Mile Point Unit 2
Job No.
Acceptance Standard RTA-1-1

ITEM #09 00310

Req. No. Nuc.1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-22-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-143X	9-14-2WCS-89-	XL	8" S160	C520-B

Views	4
Source	Ir192
Source Curies or KVP & MA	50
Source Size or Focal Spot	.10X.10
Source Film Distance	7.719
Time	:27
Actual Weld Thickness	~~.968~~ .906
Penetrameter	17
Sensitivity	2T
Shim Thickness	—
Film Size	4½X10
Film Type	55
Viewing Technique	Single [X] Double [ ]
Screen Front	.010
Screen Back	.010
Development 68° Kodak 8 min.	
Development Automatic	X

EXPOSURE

Welding Procedure
Root
Intermediate
Balance 1-3

Film Interval	LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	Interpretation R
A-E												K	
E-1												K	
1-M												K	
M-A												K	

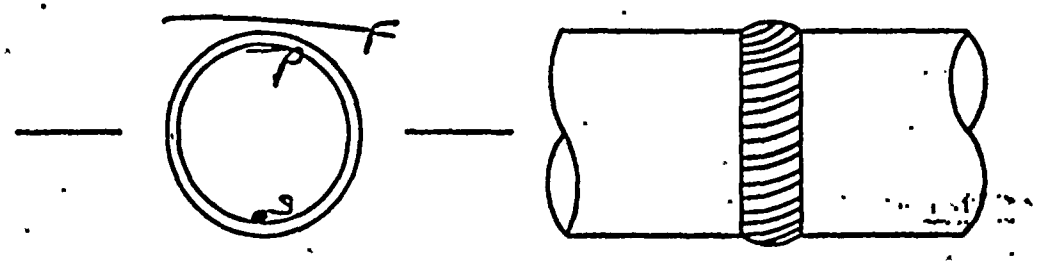
INTERPRETATION

LP — Lack of Penetration
LF — Lack of Fusion
S — Slag
P — Porosity
BT — Burn Thru
UC — Under Cut
C — Crater
CR — Crack
T — Tungsten
HL — High Low

Results: A — Acceptable R — Rejectable B — Borderline

S.W.E.C. INSPECTED 11-22-82

N.M.P.-2
NINE MILE NUC. STATION
UNIT-2-P.O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK: [illegible]
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Nine Mile Point Unit 2

Radiographer — Date 11-23-82 By [signature]
Interpretation — Date 11-24-82 By [signature]
Approval — Date 11-24-82 By [signature]

Customer Niagara Mohawk
Contract 100
Inspection Standard RTP-3-1
Authorized Insp. — Date 11-24-82 By [signature]
Customers Approval — Date 12-7-82 By [signature]

Location
Job No.
Acceptance Standard RTA-1-1

TRANS. #88 003100

21

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number WM-9-143x

Contract/PO No. D100 Piece Mark 9-14-2-WCS-89-1-142

System WCS

Equipment Type: DC Prods _____ AC Yoke — Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
11-4-82 ~~A, B, C, D, E~~	8" S-160	Final	—	
A	3/4" base	Final	—	
code plate		Fillets	—	

S. W. E. C. QA INSPECTED 224

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith NDT Level II Date 11-4-82

Interpretation Performed by T. Smith NDT Level II Date 11-4-82

MAGNETIC PARTICLE EXAMINATION REPORT

PAGE # 00310

13

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer NM Register Number NM-9-143X

Contract/PO No. 7100 Piece Mark 9-14-2-WCS-89-1-14

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. 6-4

Examination Method Dry Powder Continuous

Procedure MTA-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
XL	8"S/160	Build up Final	✓	

S. W. E. C. PQA INSPECTED 224

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by [signature] NDT Level II Date 11-16-82

Interpretation Performed by [signature] NDT Level II Date 11-16-82

TRAC. #05 00310

MAGNETIC PARTICLE EXAMINATION REPORT

H

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M.P. Register Number WR-9-142K

Contract/PO No. 7100 Piece Mark 9-14-2-WCS-89-1-1-

System W.C.S.

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
D	8"ø-1/4"	re-mag	—	
		I.B.# A14300		

S.W.E.C. QA INSPECTED 2.24

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE N.C. 27284

Examination Performed by T. Smith NDT Level II Date 12-7-82

Interpretation Performed by T. Smith NDT Level II Date 12-7-82

MAGNETIC PARTICLE EXAMINATION REPORT

TRANS. #05 00310

15

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 2 of 2

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number WM-9-142X

Contract/PO No. 7100 Piece Mark 9-14-2-WC 5-89-1-143

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. C-4

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
ERI	8"S-160	ME - Lag	✓	

S.W.E.C. PQA INSPECTED 224

Comments

N. M. P. 2
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. ERS
PIECE MARK: ----------
GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith Date 1-4-83
NDT Level II

Interpretation Performed by T. Smith Date 1-4-83
NDT Level II

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

LIQUID PENETRANT EXAMINATION REPORT

Customer R.H. Register Number WH-9-143X

Contract/PO No. 7100 Piece Mark 9-14-2-WCS-89-1-14

System WCS

Examination Method Solvent Removable Visible Dye

Penetrant Batch No. H-304 Penetrant Manufacturer Tracer-Tech

Developer Batch No. H-366A Procedure PTP-1-2

Cleaner Batch No. H-307 Acceptance PTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
E	8" S-160	gauge area	—	

S. W. E. C. QA INSPECTED 224

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12157-CHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
KERNERSVILLE, N.C.

Comments

Examination Performed by J. Smith Date 12-16-82
NDT Level II

Interpretation Performed by J. Smith Date 12-16-82
NDT Level II

LIQUID PENETRANT EXAMINATION REPORT

TRACE # 00310

17

ITT GRINNELL INDUSTRIAL PIPING, INC.
P. O. Box 566, Kernersville, N. C. 27284

Form N9.1B

EXAMINATION AND DOCUMENTATION CHECK LIST

Plant: Nine Mile Point Nuclear Sta. Unit 2 Job: Niagara Mohawk Corp. Cont. No.: NMP2-P301B Shop Fabricated Piping

System: WCS Ref. Dwg.: 09-1L Class: Nuc 1

Piece Mark: 09-1L-2-WCS-250-1-144 Register No.: NM-9-144X

P.O. & Spec. No. NMP2-P301B

Req'd	In File	
(X)	QA	Data Reports
(X)	N/A	Materials Manufacturer Code Data Reports
(X)	QA	Shop Traveler (N4.1B)
(N/A)	N/A	Operations Record - Production Planner (N4.1A)
(X)	QA	MT Reports
(X)	N/A	PT Reports
(X)	QA	UT Reports.
(X)	QA	RT Reports - Including final acceptance
(X)	N/A	Furnace Load Sheet (N8.1A)
(N/A)	N/A	Isometric Sketch
(X)	QA	Engineering Shop Sketches (N2.1C)
(X)	QA	Materials Records (N2.1F)
(N/A)	N/A	Index of Certificates
(X)	Previously Submitted	Certified Material Test Report
(X)	Previously Submitted	Weld Procedure Qualification
(N/A)	N/A	Welder Qualification
(N/A)	N/A	NDE Personnel Qualification
(X)	N/A	Nonconformance Reports
(N/A)	N/A	Materials Receipt Reports (N3.3A)
(N/A)	N/A	Weld Chemical Analysis

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK
ITT GRINNELL
KERNERSVILLE N.C. 27284

S. W. E. C. PQA INSPECTED 224

Steel & Welded Engineering Corporation
- [X] APPROVED AS DETAILED ON DCL SPECIFICATIONS
- [ ] REJECTED
- [ ] APPROVED AS REVISED AS DETAILED ON THIS SPEC.
- [ ] REVISED

J.O. No. 12177.50
SPEC. No. NMP2-P301B
DATE 5-7-79
BY E. HUDSON

Other Documents Required by Owner or his Agent

(X)	Previously Submitted	Approved Procedures
(X)	Previously Submitted	Certified Product Report

Signed William Henson
Quality Control Manager (NWD)

Where item not required, mark NA

Special Contract System Applicable Documents:

(X)	N/A	PWHT Total Time at Temperature
(X)	N/A	Painting Documentation
(X)	N/A	Supplemental Tests - Special Requirements Class 4

TRANS. #09 00273

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*

(As Required by the Provisions of the ASME Code Rules)

ITT Grinnell Industrial Piping, Inc. Sheet 1 of 3

1. Fabricated by Old Highway 421, Kernersville, NC 27284 (Name and Address of Fabricator) Order No. 7100

2. Fabricated for Stone and Webster Engineering Corp. Cherry Hill, NJ (Name and Address) Order No. NMP2-P301B

3. Owner Niagara Mohawk Power Corp. 4. Location of Plant Scriba, New York

5. Piping System Identification REACTOR WATER CLEANUP (Brief description of intended use, main coolant etc.)

(a) Drawing No. NM-9-144 K Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class NUC - 1

Edition 1974, Addenda Date None, Case No. N/A

Remarks: Manufacturers' Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report N/A (Name of Part — Item number, Manufacturer's name, and Identifying stamp)

Supplemental Sheets 2 ---Drawings
3 ---Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number 09-14-2-WCS-250-1-144 (include — mark no. — material spec. — nom. pipe size — schedule or thickness — length — fittings — flanges, etc.)

See Attached Sheets

S. W. E. C. P.O.A. INSPECTED 224

We certify that the statements made in this report are correct and that the fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE.

Date 7-12-82 Signed * (Partnership) By James R. Thomas

* ITT Grinnell Industrial Piping, Inc.

Certificate of Authorization Expires 7-16-85 Certificate of Authorization No. N-1456

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of U.A. and employed by ** of Hartford, Ct. have inspected the piping described in this Data Report on 7-14 1982, and state that to the best of my knowledge and belief, the Manufacturer has constructed this piping in accordance with the applicable Subsections of ASME Code, Section III. ** The Hartford Steam Boiler Inspection and Insurance Company

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the piping in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

TRANS. #03- 0 0 2 7 3

Date 7-14, 1982

(Inspector) Commissions U.A. 321 National Board, State, Province and No.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 7, "Remarks".

FORM NPP-1 (back)

9. Description of Field Fabrication

10. Field Hydrostatic Test _____ psi.

We certify that the field fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE, Class _____, Edition _____, Addenda Date _____ Case No. _____

Date _____, 19____ Signed _____ By _____
(Fabricator) (Representative)

Our Certification of Authorization to use the _____ Symbol Expires _____ 19____
Certificate of Authorization No. _____

CERTIFICATE OF FIELD FABRICATION INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of _____

and employed by _____ of _____

have compared the statements in this Manufacturer's Data Report with the described piping and state that the parts referred to as data items _____, not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed this piping in accordance with the applicable section of the ASME CODE SECTION III.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ 19____

_____ Commissions _____
Inspector National Board, State, Province and No.

ITT GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE, N. C.

FORM-EN-101 REV. 2/79
Q. A. FORM N2.1C
SHT. 1 of 2

JT. NO. 71.0
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

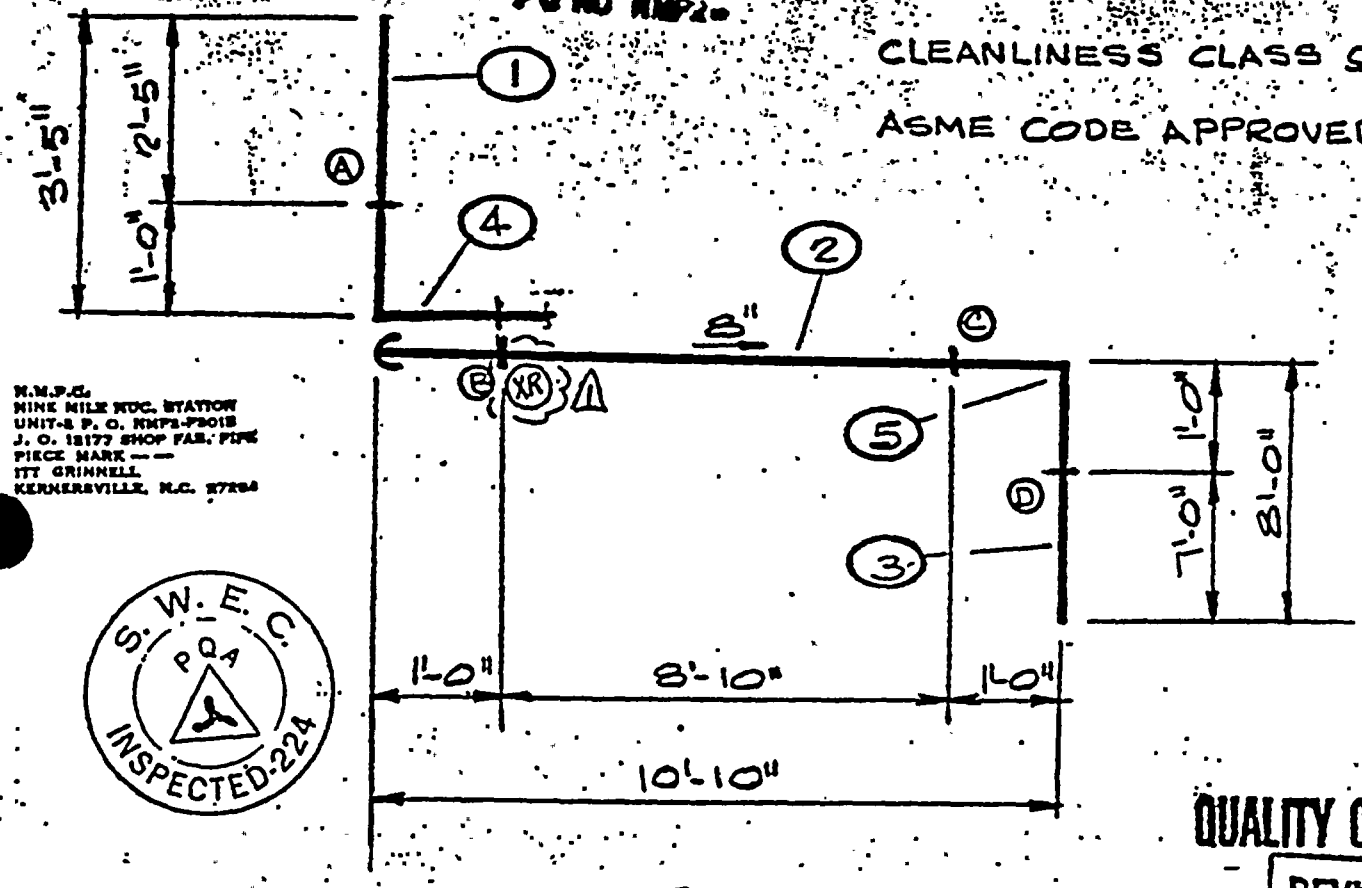
DRW'N VRAY 12-5-79 CHK'D [illegible] 1-24-81
1 REV. CAR-3-2-82 CHK'D [illegible] 3-2-82
REV. _____ CHK'D _____
REV. _____ CHK'D _____

NINE MILE POINT NUCLEAR STAT UNIT 2
NIAGARA MOHAWK POWER CORPORATION
JO NO 12177 PO NO NMP2-

INSERVICE INSPECT. REQ'D
GRIND ENDS PER NM-D25

CLEANLINESS CLASS C

ASME CODE APPROVED



N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK — —
ITT GRINNELL
KERNERSVILLE, N.C. 27284

S. W. E. C. PQA INSPECTED 224

QUALITY CONTROL
REVISION

PIPE - SCH 160 SA106B
FITT - SCH 160 SA234WPB

IMPACT TESTED MATERIAL

Fabricated for: Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System WCS

ENDS MACH PEX NM-D2

TRANS. #09-.00278

CLASS NUC.1 LINE SPEC. 1511 APP. CODE ASME III NO. REQ'D 1

Radiography (RT)	✓	Special Marking		Preheat		Cert. of Compliance	
Mag. Particle (MT)	✓	Special Cleaning	✓	Heat Treat		Mill Test Reports	✓
Liq. Penetrant (PT)		Painting		Code Stamp	✓	Data Reports	✓

SYSTEM WCS FAB. SPECS. JS-137

REF. DRW'G NO. EP-74A (5); 09-14 (2) PRESS. 2200 PSI. TEMP. 575 °F. WT. 1609 LBS.

PIECE MARK 09-14-2-WCS-250-1-144 REGISTER NM 19 1 1 4 4 X

ITT GRINNELL INDUSTRIAL PIPING, INC.

ITT GRINNELL IND. PIPING

FORM Q.A. 2.1F REV. C-79

SHOP COPY LAYOUT

Sheet 23 of 23

CONT. NO. 7100 KERNERSVILLE, N. C.

NAME NIAGARA MOHAWK

LOCATION S. P. P., N.Y.

MATERIALS RECORD
PRODUCTION PLANNER

REGISTER NM-9-144x

REV. NO. BY DATE

PIECE MARK P9-1A-2-WCS-250-1-144

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER	QTY	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL: DOCUMENT	IN PROCESS	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE SA-106B									
	NM-71- -	F	2	5		58400 pc#1	P-359 8am	(910)	Q129 2-18-82	
2	8" SCH 160 SMLS C.S. PIPE SA106B									
	NM-71- -	F	8	10		58400 pc#1	P-359 8am	(910)	Q129 2-18-82	
3	8" SCH 160 SMLS C.S. PIPE SA106B									
	NM-71- -	F	7	0		58400 pc#2	P-359 8am	(910)	Q129 2-18-82	
4	8" SCH 160 SMLS C.S. 90 LRWE SA234WPB									DIS-16
	NM-1003- 5-	E	1			HT. PKR →	BwF 889 8am	(910)		
5	8" SCH 160 SMLS C.S. 90 LRWE SA234WPB									
	NM-1003- 5-	E	1			HT. PKR →	BwF 889 8am	(910)		
	- - -									
	8" C.S. E.P.					Fabricated for: Stone and Webster Engineering Corp. Cherry Hill, N. J. P. O. NMP2-P301B Piping System WCS				DELIVERED MAR 24 1982
	- - -	E	2							
	- - -									
	IN SERVICE INSPECTION REQ'D (ENDS PER NM-025)									
	- - -									
	- - -									
	- - -								GATHERED	
	- - -								DEC 23 1981	
	- - -								05	

IRMS-2WS 0022C

INSPECTED 2-24 S.W.P.C.

N.M.P.S.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
P.O. TEXTY SHOP TAG-P5-6
PIECE MARK ——
ITT GRINNELL
KERNERSVILLE, N.C. 27284

CODE ASME III, CL.1 CUST. LINE SPEC 1511 MFG CODE L X

BATCH SIZE 8

UNIT PRICE P.O. | DIS VENDOR | NET

TOTAL

ACCOUNTING

ITT Grinnell Industrial Piping, Inc. TRAVELER SHEET 1 OF 4 SC... 7/27/82

PROJECT NIAGARA CONTRACT 7100 PC. NK. # 09-14-2-WCS-250-1-144 REG. # N/M 19 1 1 1 4 4 X

SPECIFICATION JS-137-14

WELD	FIT-UP/PREHEAT				ROOT			INTERMEDIATE			FINAL			RT DATE			MAG	IP
	WELDER I.D.	WELD MAT'L	Q.C. INSP.	PREHEAT	WELDER I.D.	WELD MAT'L		WELDER I.D.	WELD MAT'L		WELDER I.D.	WELD MAT'L	Q.C. INSP.	Q.C.	AI	CUST.	ROOT	FINAL
	PROC.	5-4			PROC.	5-4		PROC.	1-3		PROC.	3-4						
A	C335	NAGAC	(Q110)		C486	NAGAC		C486	NAEAJ		C141	NAYAB-NGNAB	(Q110)	6/27/82	-	6/29/82		(X-ray)
DATE	3/25/82		3/25/82		3-30-82			3-30-82			4/2 82	-	6/11/82					6/19/82
	PROC.	5-4			PROC.	5-4		PROC.	1-3		PROC.	3-4						
B	5315	NAGAC NAGAC	(Q164)		C520	NAEAC		C520	NAEAW		C141	NAYAB-NGNAB	(Q110)	7/1/82	-	7/8/82		(X-ray)
DATE	4-7-82	RC 7-7-82	4/7/82		6-7-82			6-7-82			6/11/82		6/11/82					6/19/82
	PROC.	5-4			PROC.	5-4		PROC.	1-3		PROC.	1-3						
C	5315	NAGAC	(Q110)		C581	NAGAC		C581	NAEAX		C581	NAEAS	(Q164)	6/27/82	6/29/82	6/29/82	-	(X-ray)
DATE	6-15-82		6/15/82		6-17-82			6-17-82			6-17-82		6/11/82					6/19/82
	PROC.	5-4			PROC.	5-4		PROC.	1-3		PROC.	3-4						
D	C335	NAGAC	(Q110)		C486	NAGAC		C486	NAEAJ		C439 C141	NAYAB-NGNAB	(Q164)	6/27/82	-	6/29/82		(X-ray)
DATE	3/25/82		3/25/82		3-30-82			3-30-82			4/11/82		6/11/82					6/19/82
Cod Plate	PROC.	5-4			PROC.			PROC.			PROC.							
	C335	NAGAC	(Q110)															(X-ray)
DATE	3/25/82		3/25/82															7/19/82

U.S.N.R.C. NINE MILE NUC. STATION UNIT-2 P. O. NMPE-P0018 P. O. 18177 SHOP PAT. PIPE PIECE MARK — — ITT GRINNELL CORNERSVILLE, N.C. 27846

INSPECTED 7-22-82 U.S.N.R.C.

STRESS DATE N/A

FINAL INSP (Q172) 7-8-82

SPECIAL OPERATIONS: DIM. N/A

Q.C. DOC. APPROVAL 7/12/82

SQUARE UP 6/11/82 S120. 6-18-82 (Q)

WALL THK.

A/I STAMP/DATA REPORT 7-14-82

CLEAN UP ZT-28-82

CUST INSP 7-12-82 7-9-82

OTHER

CUST DOC. APPROVAL

Form IM.1B

TRACE NUMBER 2 6 0 0 0

ITT Grinnell Industrial Piping, Inc. TRAVELE[illegible] SHEET 2 OF [illegible]

PROJECT Niagara CONTRACT 7100 PC. MK. # 09-14-2-WCS-250-1-144 REG. # NM | 9 | | 144X

WELD	FIT-UP/PREHEAT WELDER I.D.	WELD MAT'L	Q.C. INSP.	BACKING MAT'L	ROUT WELDER I.D.	WELD MAT'L	INTERMEDIATE WELDER I.D.	WELD MAT'L	FINAL WELDER I.D.	WELD MAT'L	Q.C. INSP.	RT DATE Q.C.	AE	CUST.	MAG ROOT	LP FINAL
XR	PROC.				PROC.		PROC.		PROC.	1-3						
									6535	NAEAN	(916)	7/1/82	-	7/8/82		9LLN
DATE									3-19-82		3/22/82				4-2-80	
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.	N.M.P.C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2-PO18 J. O. 18177 SHOP FAB. PIPE PIECE MARK — — ITT GRINNELL KERNERSVILLE, N.C. 27284							
DATE																
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.							
DATE																

INSPECTED 22 S.W. P.C.

TRANS. #08-00227

Form NM.10 (2)

Req. No. _____ In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. SO Repair ☐ Date 6-21-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9----L44X	09-14-2-WC5-2D-1-144	-A-	8"S/1160	C-436R1 C-141C3

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
	Views 4	AE												A	
	Source Ir 192	E1												T	
TECHNIQUE	Source Curies or KVP & MA 90	1M											process ck	T	
TECHNIQUE	Source Size or Focal Spot .1x1	1A												T	
TECHNIQUE	Source Film Distance 8.625"														
TECHNIQUE	Time 1:10														
TECHNIQUE	Actual Weld Thickness .96-8														
TECHNIQUE	Penetrameter 17														
TECHNIQUE	Sensitivity 4T														
	Shim Thickness .062														
	Film Size 4½x10														
	Film Type 55														

Viewing Technique: Single ☒ Double ☐

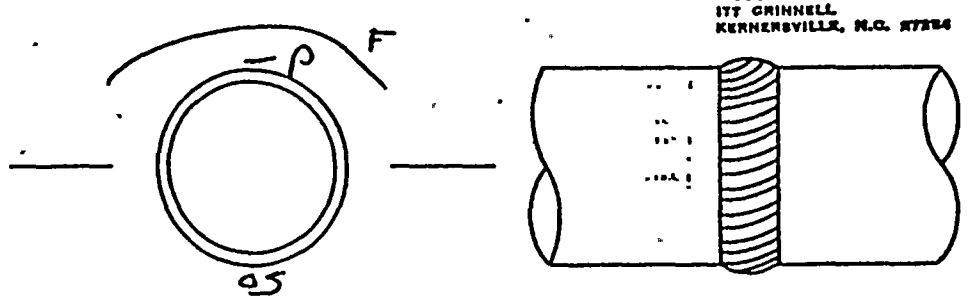
Screen	Front	.01
	Back	.01
Development	68° Kodak 8 min.	
	Automatic	X

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

INSPECTED

N.M.P.S.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK ----
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Welding Procedure

Root ST-4

Intermediate 1-3

Balance 3-4

Radiographer — Date 6-22-82 By _____

Interpretation — Date 6-22-82 By _____

Approval — Date 6-22-82 By _____

Customer ~~Niagara Mohawk~~ TVOO

Contract _____

Inspection Standard RTP-3-I

Authorized Insp. — Date _____ By _____

Customers Approval — Date 6-24-82 By _____

Location Nine Mile Point Unit 2

Job No. _____

Acceptance Standard ~~RTA-1-1~~

TRANS. 2109. 0 0 2 7 3

Req. No. _____ In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 6-21-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-2-144X	09-14-2-WCS-250-1-144	10 X B	8"S/160	C-535B C-580R1 C-16-13

Views	4
Source	Ir.192
Source Curies or KVP & MA	65
Source Size or Focal Spot	.10X.10
TECHNIQUE — Source Film Distance	8.625
TECHNIQUE — Time	1:35
TECHNIQUE — Actual Weld Thickness	.968
TECHNIQUE — Penetrameter	17
TECHNIQUE — Sensitivity	4T
Shim Thickness	.062
Film Size	4¼x17
Film Type	55
Viewing Technique	Single ☒ Double ☐
Screen — Front	.010
Screen — Back	.010
Development — 68° Kodak 6 min.	
Development — Automatic	X

Welding Procedure
Root 54
Intermediate 1-3
Balance 3-4 1:3

INTERPRETATION

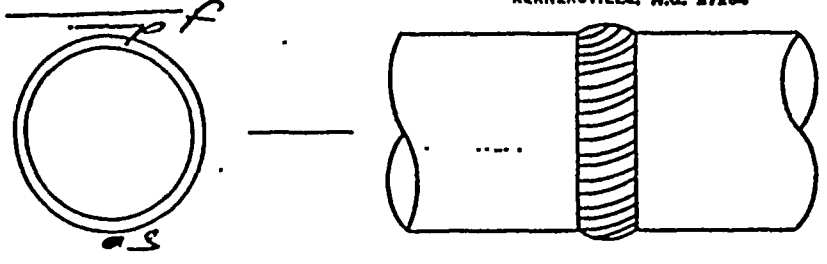
Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
A-F											-	A	
F-J											-	A	
J-M											-	A	
M-A											-	A	
											-		
											-		
											-		
											-		
											-		
											-		

INSPECTED U.S. NUCLEAR REG. COMM.

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMPS-P3018
J. O. 12177 SHOP FAB. PIPE
ITI CE MARK — —
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Radiographer — Date 7-6-82 By [signature]

Interpretation — Date 7-7-82 By John Thompson Level II

Approval — Date 7-7-82 By [signature]

Customer Pittsburgh Mechanical

Contract 7100

Inspection Standard RTP-3-I

Authorized Insp. — Date _____ By _____

Customers Approval — Date 7-8-82 By D. C. Williams Level III

Location Nine Mile Point Unit 2

Job No. _____

Acceptance Standard RT-A-I-I

TRW-QA-0023.3

Req. No. _____ In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. SD Repair ☐ Date 6-21-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-----144X	09-14-2-WCS-2501-144X	C	8"S/160	C-581 RBS

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
Views	1	AE											-	A	
Source	Ir 192	EI											-	A	
Source Curies or KVP & MA	90	IM											-	A	
Source Size or Focal Spot	1x1	MA											-	A	
TECHNIQUE: Source Film Distance	8.625"												SPACER	A	
TECHNIQUE: Time	1:10												-		
TECHNIQUE: Actual Weld Thickness	.718-.906-.968												-		
TECHNIQUE: Penetrameter	17												-		
TECHNIQUE: Sensitivity	4T												-		
Shim Thickness	.062												-		
Film Size	4½x10												-		
Film Type	D5												-		

Viewing Technique: Single ☒ Double ☐

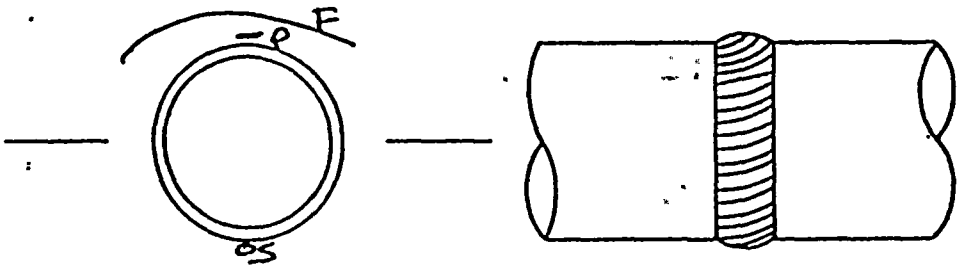
Screen	Front	.01
	Back	.01
Development	68° Kodak 8 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 1

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMPS-P3018
J. O. 18177 SHOP FAB. PIPE
PIECE MARK ---
ITT GRINNELL
KENNERSVILLE, N.C. 27284



Nine Mile Point Unit 2

Radiographer — Date 6-22-82 By [signature]
Interpretation — Date 6/1-82 By John Thompson Level II
Approval — Date 6/1/82 By [signature]

Customer Ebasco Services
Contract 7100
Inspection Standard NTP 3.1
Authorized Insp. — Date 6-24-82 By W. J. W.
Customers Approval — Date 6-29-82 By [signature]

Location _____
Job No. _____
Acceptance Standard NTP 3.1

TRANS. REP. 0022

Req. No. _____ In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 6-21-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-___-1444	0914-2HCS-220-1-1444	-D-	8"S/160	C-1613 C-4861R1 C-4393

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
	Views A														
	Source Ir 192	A-E												A	
	Source Curies or KVP & MA 90	E-I												A	
TECHNIQUE	Source Film Distance 8.625"	I-M												A	
TECHNIQUE	Time 1:10	M-A												A	
	Actual Weld Thickness .968														
	Penetrameter 17														
	Sensitivity 4T														
	Shim Thickness .067														
	Film Size 4½x10														
	Film Type 65														

INSPECTED PASS S.W.E. C.

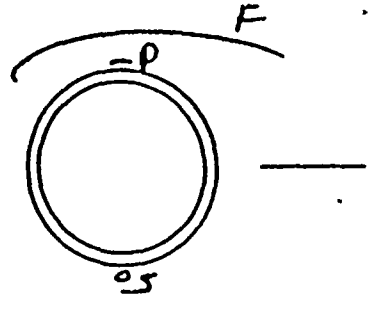
Viewing Technique: Single ☒ Double ☐

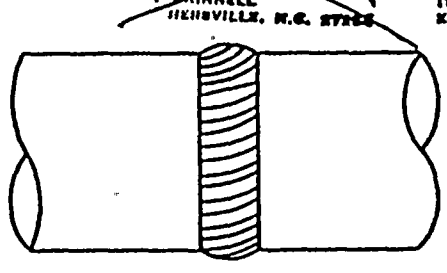
Screen	Front	.01
	Back	.01
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 54
Intermediate 43
Balance 3-4

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline





N.M.P.S.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 18177 SHOP FAB. PIPE
PIECE MARK — —
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Radiographer — Date 6-21-82 By _____

Interpretation — Date 6-21-82 By John Hayes

Approval — Date 6-21-82 By _____

Customer Niagara Mohawk

Contract 7100

Inspection Standard NMP-3-1

Authorized Insp. — Date _____ By _____

Customers Approval — Date 6-24-82 By _____

Location ~~Nine Mile Point Unit 2~~

Job No. _____

Acceptance Standard NMP-1-1

TRANS. #88 C:2300 0021

cl

ITT GRINNELL INDUSTRIAL PIPING, INC.

Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number NM-9-144X

Contract/PO No. 7100 Piece Mark 09-14-2-WCS-250-1-144

System W.C.S.

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No: G-2

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
XR	8"x.322	BW	✓	

S. W. E. C. INSPECTED

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P2018
P. O. 12177 SHOP FAB. PIPE
PIECE MARK ——
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Comments _____

Examination Performed by T. Smith NDT Level II Date 4-7-82

Interpretation Performed by T. Smith NDT Level II Date 4-7-82

MAGNETIC PARTICLE EXAMINATION REPORT

11

TRANS. 3109 00278

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer NM Register Number NM-9-144X

Contract/PO No. 7100 Piece Mark 09-14-2-WCS-250-1-144

System WCS

Equipment Type: DC Prods _____ AC Yoke 1 Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTP 1-1 Acceptance MTA 1-0

Item Identification Weld/Serial/Et. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
ABCD	8" S/160	Fin	✓	
CODE PIT.	—	Fin	✓	

S. W. E. C. INSPECTED 22A

N.M.P.C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P2018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK
ITT GRINNELL
KENDERVILLE, N.C. 27284

Comments _____

Examination Performed by Bruce E. Broadstreet Date 6/19/82
NDT Level II

Interpretation Performed by Bruce Broadstreet Date 6/19/82
NDT Level II

MAGNETIC PARTICLE EXAMINATION REPORT

TRANS. #09- 00278

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

ULTRASONIC THICKNESS EXAMINATION REPORT

Customer: NM Register No. NM-9-144X

Contract/PO No. 7100 Piece Mark 4/W/P BB 09-14-2-WCS-250-1-144

Calibration: Step Block Increments .100" - 1.000" Micrometer Reading 910

Ultrasonic Instrument SONIC

Search Unit Type AEROTECH Frequency 5 MHZ Size 1/4" in.

Couplant Sonotrace 30 Procedure UTP 1.0

Item Identification	Size	Nominal Thickness	Minimum Thickness	Area Examined/ Location	Lowest Reading	Adjacent Area Reading
X^R	8"	906	793	OD	840	900

S. W. F. C. PDA INSPECTED-224

Comments/Sketch/Description (As Applicable) UT M/W acc

N.M.P.S.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3013
J. O. 12177 SHOP FAB. PDE
PIECE MARK
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by Bruce E. Broadstreet Date 6/21/82

NDT Level II

Interpretation Performed by Bruce Broadstreet Date 6/21/82

NDT Level II

ULTRASONIC THICKNESS EXAMINATION REPORT

TRANS. #09- 00278

13

WP

ITT GRINNELL INDUSTRIAL PIPING, INC.
P. O. Box 566, Kernersville, N. C. 27284

Form N9.1B

EXAMINATION AND DOCUMENTATION CHECK LIST

Nine Mile Point — NMP2-P301B
Plant: Nuclear Sta. Unit 2 Job: Niagara Mohawk Corp. Cont. No.: Shop Fabricated Piping

System: WCS Ref. Dwg.: 09-14 Class: Nuc. 1

Piece Mark: 09-14-2-WCS-250-1-145 Register No.: NM-9-145 X

P.O. & Spec. No. NMP2-P301B

Req'd	In File	
(X)	JO	Data Reports
(X)	N/A	Materials Manufacturer Code Data Reports
(X)	JO	Shop Traveler (N4.1B)
(N/A)	N/A	Operations Record – Production Planner (N4.1A)
(X)	JO	MT Reports
(X)	JO	PT Reports
(X)	JO	UT Reports
(X)	JO	RT Reports – Including final acceptance
(X)	N/A	Furnace Load Sheet (N8.1A)
(N/A)	N/A	Isometric Sketch
(X)	JO	Engineering Shop Sketches (N2.1C)
(X)	JO	Materials Records (N2.1F)
(N/A)	N/A	Index of Certificates
(X)	Previously Submitted	Certified Material Test Report
(X)	Previously Submitted	Weld Procedure Qualification
(N/A)	N/A	Welder Qualification
(N/A)	N/A	NDE Personnel Qualification
(X)	JO	Nonconformance Reports
(N/A)	N/A	Materials Receipt Reports (N3.3A)
(N/A)	N/A	Weld Chemical Analysis

N. M. P. C.
NINE MILE NUC. STATION
UNIT - 2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

S. W. E. C. INSPECTED-224 QA

Stone & Webster Engineering Corporation
☒ APPROVED AS NOTED ON THE SPECIFICATIONS
☐ UNACCEPTABLE
☐ APPROVED AS REVISED AS NOTED ON THE SPEC.
☐ REVISED
J.O. No. 12177.50
SPEC No. NMP2-P301B
DATE 5-7-79
BY R. HUGHSMITH

Other Documents Required by Owner or his Agent

(X)	Previously Submitted	Approved Procedures
(X)	Previously Submitted	Certified Product Report

Signed: James H. Shumate
Quality Control Manager (NWD)

Where item not required, mark NA

Special Contract System Applicable Documents:

(X)	N/A	PWHT Total Time at Temperature
(X)	N/A	Painting Documentation
(X)	N/A	Supplemental Tests – Special Requirements Class 4

TRANS. #05 00310

1 of 23

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*
(As Required by the Provisions of the ASME Code Rules)

ITT Grinnell Industrial Piping, Inc. Sheet 1 of 3

1. Fabricated by Old Highway 421, Kernersville, NC 27284 (Name and Address of Fabricator) Order No. 7100

2. Fabricated for Stone and Webster Engineering Corp. Cherry Hill, NJ (Name and Address) Order No. NMP2-P301B

3. Owner Niagara Mohawk Power Corp. 4. Location of Plant Scriba, New York

5. Piping System Identification Reactor Water Clean Up (Brief description of intended use, main coolant etc.)

(a) Drawing No. NM-9-145 X Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class NUC-1

Edition 1974, Addenda Date None, Case No. N/A

Remarks: Manufacturers' Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report N/A (Name of Part — Item number, Manufacturer's name, and Identifying stamp)

Supplemental Sheets 2 ---Drawings
3 ---Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected: Piece Mark Number D9-14-2-NCS-250-1-145 (include — mark no. — material spec. — nom. pipe size — schedule or thickness — length — fittings — flanges, etc.)

See Attached Sheets

S. W. E. C. P.D.A. INSPECTED

We certify that the statements made in this report are correct and that the fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE.

Date 1-7-83 Signed * (Purchaser) By James G. Thunder

* ITT Grinnell Industrial Piping, Inc.

Certificate of Authorization Expires 7-16-85 Certificate of Authorization No. N-2444-5

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of VA. and employed by ** of Hartford, Ct. have inspected the piping described in this Data Report on 1-18 1983, and state that to the best of my knowledge and belief, the Manufacturer has constructed this piping in accordance with the applicable Subsections of ASME Code, Section III. ** The Hartford Steam Boiler Inspection and Insurance Company

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the piping in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 1-18, 1983 Commissions VA. 321 TRAES #05 00310
(Inspector) National Board, State, Province and No.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 7, "Remarks".

9. Description of Field Fabrication

10. Field Hydrostatic Test _____ psi.

We certify that the field fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE, Class _____, Edition _____, Addenda Date _____ Case No. _____

Date _____, 19____ Signed _____ By _____
(Fabricator) (Representative)

Our Certification of Authorization to use the _____ Symbol Expires _____ 19____

Certificate of Authorization No. _____

CERTIFICATE OF FIELD FABRICATION INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of _____

and employed by _____ of _____

have compared the statements in this Manufacturer's Data Report with the described piping and state that the parts referred to as data items _____, not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed this piping in accordance with the applicable section of the ASME CODE SECTION III.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ 19____

_____ Commissions _____
Inspector National Board, State, Province and No.

GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE, N. C.

FORM-GN-101 REV. 2/79
Q. A. FORM N2.1C

SHT. 1 OF 5

NO. 7100

NAME NIAGARA MOHAWK

LOCATION SCRIBA NY

REVISION

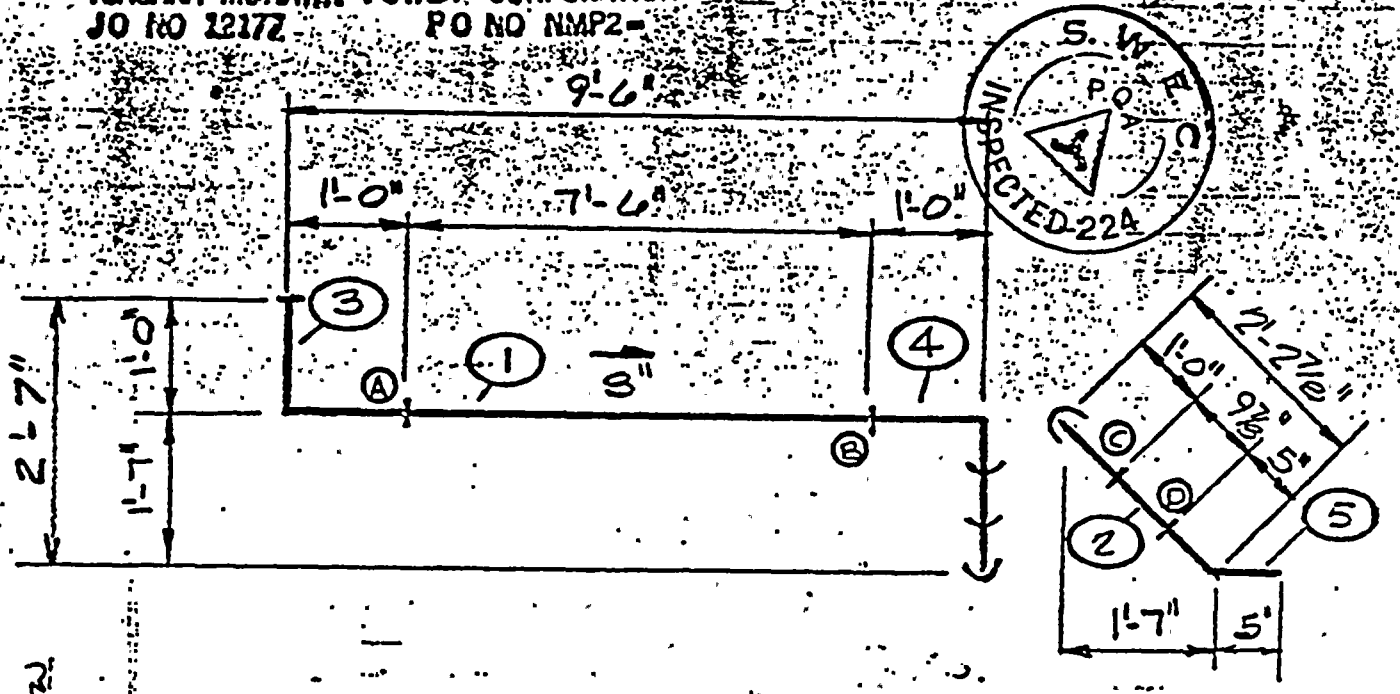
DRW'N VRAY 12-5-79 CHK'D [illegible] 1-24-31

1 REV. YCY 9-29-81 CHK'D [illegible] 10-1-81

REV. _____ CHK'D _____

REV. _____ CHK'D _____

NINE MILE POINT NUCLEAR STATION UNIT 2
NIAGARA MOHAWK POWER CORPORATION
JO NO 12177 PO NO NMP2-



ENDS MACH PER SK # NM-D2

CLEANLINESS CLASS C

ASME CODE APPROVED

IMPACT TESTED MATERIAL

PIPE - SCH 160 SA-333 Gr. 6 1

FITT - SCH 160 SA234 WPB

INSERVICE INSPECTION GRIND WELDS PER NM-D25

N. M. P. 2
NINE MILE NUC. STATION
UNIT - 2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: ----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Fabricated for: Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System Elec Aux

QUALITY CONTROL

CLASS Nuc.1 LINE SPEC. 1511 APP. CODE ASME III NO. REQ'D 1

Radiography (RT)	✓	Special Marking		Preheat		Cert. of Compliance	
Mag. Particle (MT)	✓	Special Cleaning	✓	Heat Treat		Mill Test Reports	✓
Liq. Penetrant (PT)		Painting		Code Stamp	✓	Data Reports	✓

SYSTEM WCS FAB. SPECS. JS-137

REF. DRW'G NO. EP-74A 09-14 PRESS. 2200 PSI. TEMP. 575 °F. WT. 930 LBS.

PIECE MARK 09-14-2-WCS-250-1-145 REGISTER NM 9 1 1 145X

TRANS. # 00310

GRINNELL INDUSTRIAL PIPING, INC.

FORM [illegible] REV. 8-79
[illegible] 3"
1-6-83

Sheet 2 of 2

REVISION

CONT. NO. 730
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

REGISTER N.M. 19 145x

REV. NO. | BY | DATE

PIECE MARK P9-14-2-WCS-250-1-145

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER	UOM	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL DOCUMENT	IN PROCESS	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE SA333 GR.6					51125 V P 527 Gr		Q172	Q171	
	N.M.-(9)-F-A-	F	7	6		S-N-11 HT. UT-2-2		1102-82	7-27-82	
2	8" SCH 160 SMLS C.S. PIPE SA333 GR. 6					~~51125~~ P 527 Gr		Q172	Q171	
	N.M.-(9)-F-A-	F	9	7/8		S.N.-11 HT-51125 V UT-2-2		1102-82	7-27-82	9-13-82
3	8" SCH 160 SMLS C.S. 90 LRWE SA234 WPB					PKR	BwF 889	Q172		D1-12-2
	NM-1003- 5-	E						1020 TC		
4	8" SCH 160 SMLS C.S. 90 LRWE SA234 WPB					PKR	BwF 999 RAM	Q172		10-11
	NM-1003- 5-	E						1020 TC		
5	8" SCH 160 SMLS C.S 45° LRWE SA234 WPB					ADSNN V SER. 895	BwF 686 RAM	Q172		10-11
	NM-1003- 6-	E						1020 TC		

~~SHOP COPY LAYOUT~~

Fabricated for: ~~Stone and Webster Engineering Corp.~~
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System WCS

8" DIA. S.W.P. WELDED 22A

ITT GRINNELL IND. PIPING
KERNERSVILLE, N. C.

TRANS #69 IN SERVICE INSPECTION REQ'D. (GRIND WELDS NM-D25)

N. M. P. C.
NINE MILE NUCL. STATION
UNIT-2 P. O. NMP2-P301B
SHOP FAB. PIPE
PIECE MARK-
ITT GRINNELL
KERNERSVILLE, N.C. 27284

DELIVERED AUG 02 1982

GATHERED

OCT 20 1981

05

CODE ASME III, CL.1 CUST LINE SPEC 151 MFG CODE L X 8

UNIT PRICE P. O. | DIS VENDOR | NET

TOTAL

ITT Grinnell Industrial Piping, Inc. TRAVELER SHEET 1 OF 2 11/14/82

PROJECT NIAGARA CONTRACT 7100 PC. MK. # 09-14-2-WCS-250-1-145 REG. # NM 19 1 1 145 X

SPECIFICATION JS-137-14

WELD	FIT-UP/PREHEAT WELDER I.D.	WELD MAT'L	Q.C. INSP.	BATCH NO.	ROOT WELDER I.D.	WELD MAT'L	INTERMEDIATE WELDER I.D.	WELD MAT'L	FINAL WELDER I.D.	WELD MAT'L	Q.C. INSP.	RT DATE Q.C.	RT DATE A.I.	RT DATE CUST.	MAG ROOT	LP FINAL
	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
A	5315	NAGAC	Q172		C582	NAGAC	C582	NAEAW	C570	NAVAE NGDAB	Q177	11/11/82	11/15/82	11/17/82	—	1116
DATE	10-22-82	10-22-82			10/27/82		10/27/82		11-4-82		11/4/82				11-4-82	
	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
B	5315	NAGAC	1172		C582	NAGAC	C582	NAEAW	C570	NAVAE NGDAB	Q177	12/9/82	12/10/82	12/14/82	—	1116
DATE	10-22-82	10-22-82			10/27/82		10/27/82		11-3-82		11/4/82				11-4-82	
	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
C	5351	NAGAC	F10		C582	NAGAC	C582	NAEAX	C570	NAVAE NGDAB	Q177	12/9/82	12/10/82	12/14/82	—	1116
DATE	9/16/82		9/16/82		10/14/82		10/19/82		10-21-82 10-20-82		11/4/82				11-4-82	
	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
D	5352	NAGAC	F10		C582	NAGAC	C582	NAEAX	C570	NAVAE NGDAB	Q177	12/9/82	12/10/82	12/14/82	—	1116
DATE	9/16/82		9/16/82		10/14/82		10/19/82		10-21-82 10-20-82		11/4/82				11-4-82	
Code Mate	PROC. 5-4				PROC.		PROC.		PROC.							
	5315	NAGAC	1172									—	—	—	—	1116
DATE	10-22-82		10-22-82												11-4-82	

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

TRAVEL #108 00037

STRESS DATE. N/A

FINAL INSP. Q177 11-4-82

SPECIAL OPERATIONS: C DIM. N/A

Q.C. DOC. APPROVAL JB 1-6-83

SQUARE S105 11-4-82

N/A

WALL THK.

A/I STAMP/DATA REPORT 1-18-83

CLEAN UP N/A 12/21/82

CUST INSP MM 1-4-83

OTHER

CUST DOC. APPROVAL

ITT Grinnell Industrial Piping, Inc. TRAVEL SHEET 2 OF

PROJECT Niagara CONTRACT 7100 PC. MK. # 09-14-2-WCS.250-1-145 REG. # NM | 9 | | 145X

WELD	FIT-UP/PREHEAT WELDER I.D.	WELD MAT'L	Q.C. INSP.	BACKING GAS	ROOT WELDER I.D.	WELD MAT'L	INTERMEDIATE WELDER I.D.	WELD MAT'L	FINAL WELDER I.D.	WELD MAT'L	Q.C. INSP.	RT DATE Q.C.	RT DATE AI	RT DATE CUST.	MAG ROOT	LP FINAL
pewld B	PROC.				PROC. 5-4		PROC. 1-3		PROC. 1-3			12/9/82	12/10/82	12/14/82	—	9111
					C-123	NAGAD	C-123	NAEAW	C-123	NAEAX	0150					
DATE					11-29-82		11-29-82		11-29-82		12/1/82				12-20-82	
pewld C	PROC.				PROC. 5-4		PROC. 1-3		PROC. 1-3			12/9/82	12/10/82	12/14/82	—	9111
					C-123	NAGAD	C-123	NAEAW	C-123	NAEAX	0150					
DATE					11-29-82		11-29-82		11-30-82		12/1/82				12-20-82	
pewld D	PROC.				PROC. 5-4		PROC. 1-3		PROC. 1-3			12/9/82	12/10/82	12/14/82	—	9111
					C-123	NAGAD	C-123	NAEAW	C-123	NAEAX	0150					
DATE					11-29-82		11-29-82		11-30-82		12/1/82				12-20-82	
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PRC...				PPOC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.							

INSPECTED C.E.I.

N. A. P. C.
NINE MILE N.C. STATION
UNIT-2 P. O. NMP2-P30118
J.O. 12177 SHOP FAB. PIPE
PIECE MARK: ----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

TRAVEL #08 00310

7

Req. No. NUC 1. In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-8-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
XM-9-145X	09-14-2-WCS-250-1145	A	8" S 160	C570B C582RI

TECHNIQUE		
	Views	4
	Source	IR192
	Source Curies or KVP & MA	80
	Source Size or Focal Spot	1x1
	Source Film Distance	8.625
	Time	1:15
	Actual Weld Thickness	.968
	Penetrameter	17
	Sensitivity	41
	Shim Thickness	062
	Film Size	4"x10"
	Film Type	55
	Viewing Technique	Single [X] Double ☐
Screen	Front	010
	Back	010
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

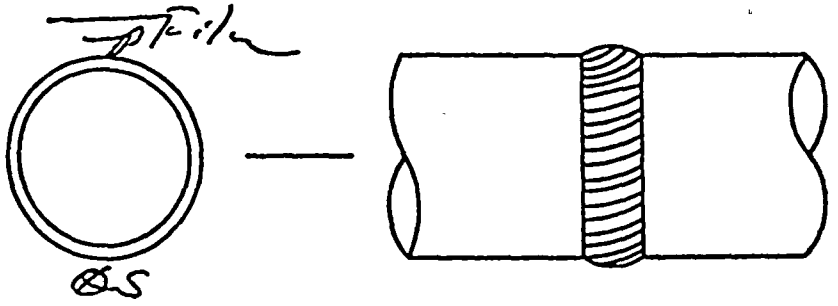
INTERPRETATION

Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
AE												X	
EI												X	
IM												X	
MA													

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

M. W. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Radiographer — Date 11-10-82 By _____

Interpretation — Date 11-11-82 By John Thompson Level II

Approval — Date 11-11-82 By _____

Customer Niagara Mohawk Location Nine Mile Point Unit 2

Contract 7100 Job No. _____

Inspection Standard RTP-3-1 Acceptance Standard RTA-1-1

Authorized Insp. — Date 11/15/82 By RVS

Customers Approval — Date 11/17/82 By Mark Mile Level II

FILM # 003 0010

Req. No. Nuc-1 | In-Process ☐ | **RADIOGRAPHIC INSPECTION REPORT** | Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. 50 | Repair ☑ | Date 12-3-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-____-145X	09-14-2-WCS-250-1-145	-BR1	8"S/160	C-582 R1 C-070 X3 (C-133 R13)

Views		4
Source		IR-192
Source Curies or KVP & MA		60
Source Size or Focal Spot		1X1
TECHNIQUE	Source Film Distance	8.6
	Time	1:15
	Actual Weld Thickness	968
	Penetrameter	17
	Sensitivity	4T
Shim Thickness		062
Film Size		4½X10
Film Type		55
Viewing Technique		Single ☒ Double ☐
Screen	Front	010
	Back	010
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4 / 1-3

INTERPRETATION

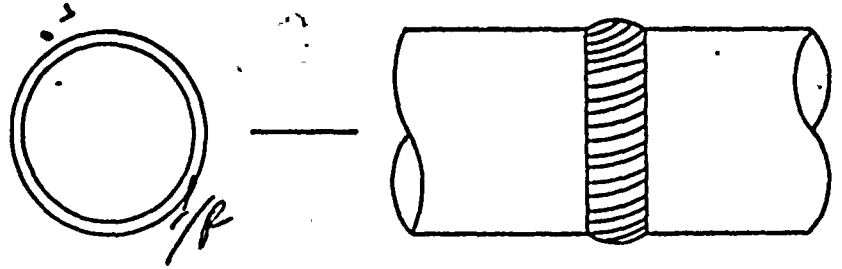
Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
A-E												A	
E-1												T	
1-M												T	
M-A												T	

LP — Lack of Penetration
LF — Lack of Fusion
S — Slag
P — Porosity
BT — Burn Thru
UC — Under Cut
C — Crater
CR — Crack
T — Tungsten
HL — High Low

Severity
A — Acceptable
R — Rejectable
B — Borderline

INSPECTED APR 15 1983

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:--------
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Radiographer — Date 12/8/82 By Brad Strickland

Interpretation — Date 12-9-82 By Dale Thompson Level II

Approval — Date 12-9-82 By R. Rogers II

Customer Niagara Mohawk
Contract 7100
Inspection Standard RTP-3-1
Authorized Insp. — Date 12-10-82 By
Customers Approval — Date 12-14-82 By Mark Milo Level II

Location Nine Mile Point Unit 2
Job No. _____
Acceptance Standard RTA-1-1

RADIOGRAPH #005 003 10

(15)

Req. No. NUC 1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-8-82 BL

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-145X	09-14-2-WCS-250-1-145	B	8" S160	C570B C582RJ

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
	Views 4														
	Source Ir 192														
	Source Curies or KVP & MA 80	A-E												X	
	Source Size or Focal Spot .1x.1	E-I												✓	
TECHNIQUE	Source Film Distance 8.625	I-M											RS		T
TECHNIQUE	Time 1:15	M-A			R								SR A-N		R
TECHNIQUE	Actual Weld Thickness .968														
TECHNIQUE	Penetrameter 17														
TECHNIQUE	Sensitivity 4T														
	Shim Thickness .062														
	Film Size 4½x10														
	Film Type 55														

Viewing Technique: Single [X] Double [ ]

Screen	Front	OK
	Back	OK
Development	68° Kodak 6 min.	
	Automatic	X

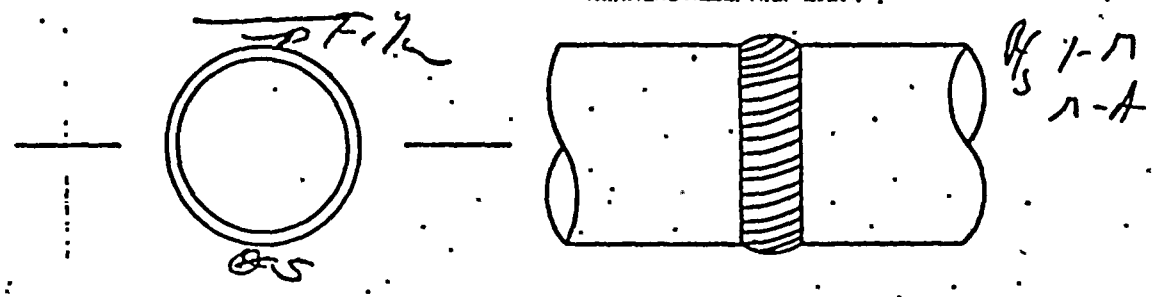
Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

INSPECTED S.W.K. P.O. E.E. 2-24

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KENNERSVILLE, N.C. 27284



Radiographer — Date 11-10-82 By L Walker
Interpretation — Date 11-11-82 By John Morrison Gurl II
Approval — Date _____ By _____

Customer Niagara Mohawk
Contract 7100
Inspection Standard ~~RTP-3.1~~ RT-1.1
Authorized Insp. — Date _____ By _____
Customers Approval — Date _____ By _____

Location ~~Nine Mile Point~~ Unit 2
Job No. _____
Acceptance Standard _____

TRAK #05 00310

Req. No. Nuc 1 | In-Process ☐ | RADIOGRAPHIC INSPECTION REPORT | Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. SD | Repair ☑ | Date 12-3-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-145B	09-14-2-WCS250-1-145	CR1	8"S/160	C-582 R1 C-570B C-123 R1B

Views	4
Source	IR.192
Source Curies or KVP & MA	60
Source Size or Focal Spot	IN
TECHNIQUE: Source Film Distance	8.6
TECHNIQUE: Time	1:15
TECHNIQUE: Actual Weld Thickness	.968
TECHNIQUE: Penetrameter	17
TECHNIQUE: Sensitivity	4T
Shim Thickness	062
Film Size	4½x10
Film Type	55
Viewing Technique	Single ☒ Double ☐
Screen: Front	010
Screen: Back	010
Development: 68° Kodak 6 min.	
Development: Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4 1-3

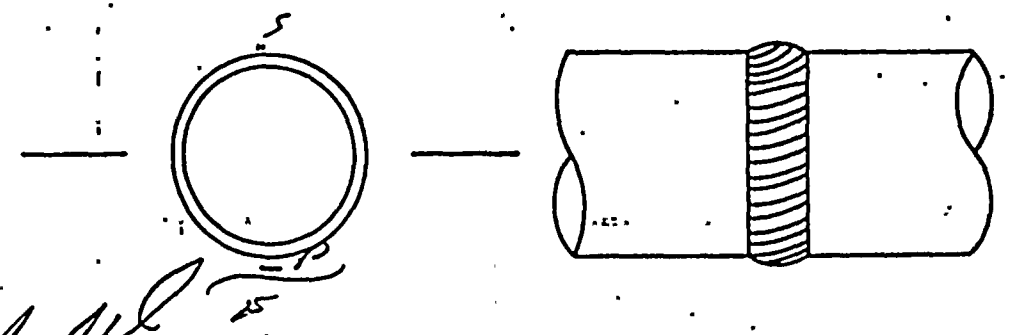
INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
A-E											-	K	
E-I											-	↑	
I-M											-	↑	
M-A		I									-	↑	
											-		
											-		
											-		
											-		
											-		

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Radiographer — Date 12/8/82 By Broadstreet
Interpretation — Date 12-9-82 By John Thompson Cert.
Approval — Date 12-1-82 By John Quinn II

Customer Niagara Mohawk
Contract 7100
Inspection Standard RTP-3-1
Authorized Insp. — Date 12-10-82 By
Customers Approval — Date 12-14-82 By Mark Mike Jewett

Location ~~Nine Mile Point Unit 2~~
Job No. _____
Acceptance Standard RTA-1-1

TRAX #09 00310

GTS

Req. No. Nuc1 | In-Process ☐ | Repair ☐

RADIOGRAPHIC INSPECTION REPORT

Standard Hours ____

Date 11-8-82 BL

ITT GRINNELL INDUSTRIAL PIPING, INC.

Form N8.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-145X	09-14-2-WCS-250-1-145	C	8"S160	C570B C582 RT

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
Views	4	AE											process c/s RS		A
Source	IR192	E-1			R								SR H-1		A
Source Curies or KVP & MA	80	I-M			R								SR I-J & L-M		A
Source Size or Focal Spot	.1X.1	M-A											RS		A
TECHNIQUE: Source Film Distance	8.625														
TECHNIQUE: Time	1:15														
TECHNIQUE: Actual Weld Thickness	.968														
TECHNIQUE: Penetrameter	17														
TECHNIQUE: Sensitivity	4T														
Shim Thickness	.062														
Film Size	4"x10"														
Film Type	55														

INSPECTED 2-24 P.D.A. W.E.S.

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

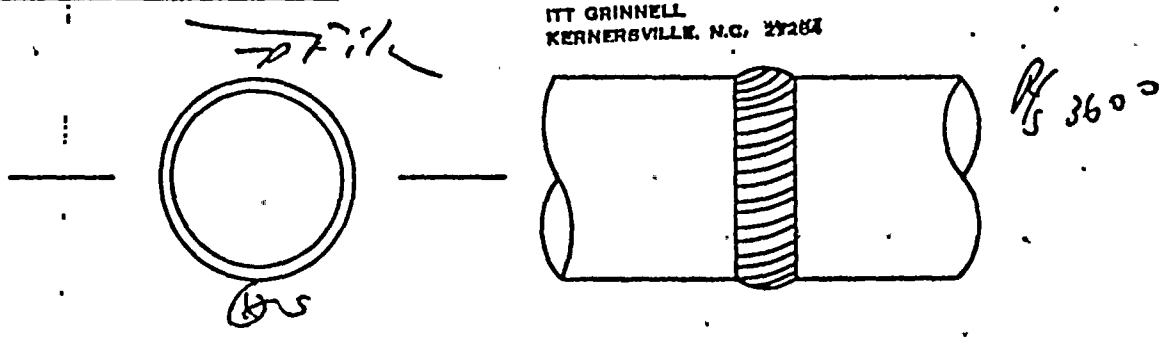
Severity: A — Acceptable; R — Rejectable; B — Borderline

N. M. P. C.
~~NINE MILE NUC. STATION~~
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK ----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Viewing Technique: Single [X] Double [ ]

Screen		
	Front	010
	Back	010
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4



Radiographer — Date 11-10-82 By [signature]

Interpretation — Date 11-11-82 By John Hargrave Cert II

Approval — Date ____ By ____

Customer ~~Niagara Mohawk~~ 7100

Contract ____

Inspection Standard ____

Authorized Insp. — Date RTP-3-1 By ____

Customers Approval — Date ____ By ____

Location Nine Mile Point ~~Unit 2~~

Job No. ____

Acceptance Standard RT-A-1-1

Page 409

0 0 3 1 0

Req. No. N-1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. SO Repair ☑ Date 12-3-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-___-145X	09-14-2-WCS-250-1-145	-DEL	8"S/160	C-582RI C-570B (C-123RKB)

		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
Views	4	M-C											SURFACE process clk	T	
Source	IR.192	C-E												K	
Source Curies or KVP & MA	60	E-I											process clk	T	
Source Size or Focal Spot	IX	I-M											scratch clk	K	
TECHNIQUE Source Film Distance	8.6														
TECHNIQUE Time	1:10														
TECHNIQUE Actual Weld Thickness	968														
TECHNIQUE Penetrameter	17														
TECHNIQUE Sensitivity	4T														
Shim Thickness	062														
Film Size	4½x10														
Film Type	55												N. M. P. C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2-P301B J. O. 12177 SHOP FAB. PIPE PIECE MARK:-------- ITT GRINNELL KERNERSVILLE, N.C. 27284		

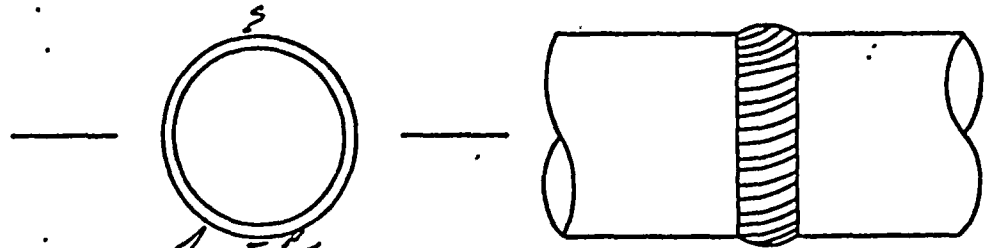
LP — Lack of Penetration
LF — Lack of Fusion
S — Slag
P — Porosity
BT — Burn Thru
UC — Under Cut
C — Crater
CR — Crack
T — Tungsten
HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

Viewing Technique: Single ☒ Double ☐

Screen	Front	010
	Back	010
Development	68° Kodak 8 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4 / 1-3



Radiographer — Date 12/8/82 By [signature]
Interpretation — Date 12-9-82 By [signature]
Approval — Date 12-9-82 By [signature]

Customer Niagara Mohawk
Contract 7100
Inspection Standard RTP-3-1 12-10-82
Authorized Insp. — Date 12-14-82 By [signature]
Customers Approval — Date 12-14-82 By [signature]

Location Nine Mile Point Unit 2
Job No. _____
Acceptance Standard RTA-1-1

FILM ID 0031

TS

Req. No. Nuc1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-8-82 BQ

Form N6.3A

Register No.	Piece No.	Weld No	Pipe Size and Schedule	Welder No.
NM-9-145X	09-142-WCS-250-1-145	D	8" S160	C570B C582RJ

		Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
Views	4														
Source	DR192														
Source Curies or KVP & MA	80	A-E			R								SR A-B & D-E		R
Source Size or Focal Spot	.1x.1	E-1			R								SR E-1		R
TECHNIQUE Source Film Distance	8.625	1-M			R								SR 1-J		R
Time	1.15	MA											H_S		R
Actual Weld Thickness	.968														
Penetrameter	17														
Sensitivity	4T														
Shim Thickness	.062														
Film Size	4½x10														
Film Type	55														

INSPECTED U.S.W.E. 2-2

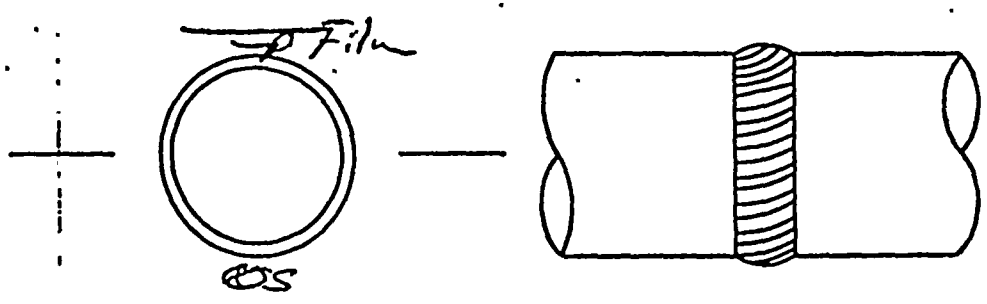
LP — Lack of Penetration LF — Lack of Fusion S — Slag P — Porosity BT — Burn Thru UC — Under Cut C — Crater CR — Crack T — Tungsten HL — High Low

Severity A — Acceptable R — Rejectable B — Borderline

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-130168
J. O. 12177 SHOP FAB. PIPE
PIECE MARK-
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Viewing Technique	Single ☒ Double ☐
Screen Front	010
Screen Back	010
Development 68° Kodak 8 min.	
Development Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4



Radiographer — Date 11-10-82 By [signature]

Interpretation — Date 11-11-82 By John Thompson Cert #

Approval — Date _____ By _____

Customer Niagara Mohawk Location Nine Mile Point Unit 2

Contract 7100 Job No. _____

Inspection Standard RTP-3-1 Acceptance Standard RTA-1-1

Authorized Insp. — Date _____ By _____

Customers Approval — Date _____ By _____

TRACE #05 00310

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number NM-9-145X

Contract/PO No. 7100 Piece Mark 09-14-2-4.5S-250-1-145

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-2-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
FT-#2	8"-S-160	Cap Removal Area I.R.FT A11402	✓	

W.E.C. SIGMA INSPECTED 224

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith Date 6-5-82
NDT Level II

Interpretation Performed by T. Smith Date 6-5-82
NDT Level II

MAGNETIC PARTICLE EXAMINATION REPORT

TRANS. #09 00310

10

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number Hbn-9-145X

Contract/PO No. 7100 Piece Mark 09-14-2-W.C.S-250-1-146

System W.C.S.

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. G-4

Examination Method Dry Powder Continuous

Procedure NTP-1-1 Acceptance NTP-2-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
09-14-2	grind	D-area per I.R.# 12211	✓	

S.W.E.C. QA INSPECTED-224

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P2018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith NDT Level II Date 9-16-82

Interpretation Performed by T. Smith NDT Level II Date 9-16-82

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer NM Register Number NM-9-145X

Contract/PO No. 7100 Piece Mark 09-14-2-WCS-250-1-145

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. G-2

Examination Method Dry Powder Continuous

Procedure MTA-1-1 Acceptance MTA-2-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined. Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Reject
IT#1		GROUND AREA	✓	

S.W.E.C. PQA INSPECTED-22

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P301
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by [signature] NDT Level II Date 11-4-82

Interpretation Performed by [signature] NDT Level II Date 11-4-82

TRAX #05 00310

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number NMP-9-145X

Contract/PO No. 3100 Piece Mark 09-14-2-WCS-250-1-145

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
A, B, C, D	8" S-160	Final	✓	
code	plate	Fillets	✓	

S.W.E.C. P.S.A. INSPECTED-24

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C 27284

Examination Performed by T. Smith NDT Level II Date 11-4-82

Interpretation Performed by T. Smith NDT Level II Date 11-4-82

MAGNETIC PARTICLE EXAMINATION REPORT TRAER #09 00310

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 2 of 2

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number MM-9-145-X

Contract/PO No. 7100 Piece Mark B9-14-2-14.5-250-1-145

System W-C-S.

Equipment Type: DC Prods ____ AC Yoke ✓ Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTA-1-1 Acceptance MTP-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
BA1, CR1, DR1	8"-2-1/2"	Base Mtl	✓	

S. W. E. C. INSPECTED-224

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith Date 12-20-82
NDT Level II

Interpretation Performed by T. Smith Date 12-20-8
NDT Level II

MAGNETIC PARTICLE EXAMINATION REPORT

TRAC. #07 00310

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

LIQUID PENETRANT EXAMINATION REPORT

Customer N.M. Register Number NM-9-145X

Contract/PO No. 7100 Piece Mark 09-14-HC.S-250-1-145

System LPCS

Examination Method Solvent Removable Visible Dye

Penetrant Batch No. H-322 Penetrant Manufacturer Tracer-Tech

Developer Batch No. H-314 Procedure PTP-1-2

Cleaner Batch No. H-302 Acceptance PTA-1-2

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
B, C, A	8" Sch 140	gauge area		

S. W. E. C. PQ SPECIFIED

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
I.O. 12177 SHOP FAB. PIPE
PIECE MARK:----------
ITT GRINNELL
KERNERSVILLE N.C. 27284

Comments

Examination Performed by T. Smith NDT Level II Date 11-29-82

Interpretation Performed by T. Smith NDT Level II Date 11-29-82

LIQUID PENETRANT EXAMINATION REPORT TRAC. NO. 00310

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

ULTRASONIC THICKNESS EXAMINATION REPORT

Customer: N. M. Register No. NM-9-145X

Contract/PO No. 9100 Piece Mark 09-14-2-WC-S-260-1-145

Calibration: Step Block Increments .1-1" Micrometer Reading 903"

Ultrasonic Instrument Sonic Bransan 301

Search Unit Type Aerotech Frequency 5 MHZ Size 1/4 in.

Couplant Sonotrace 30 Procedure UTP-1-0

Item Identification	Size	Nominal Thickness	Minimum Thickness	Area Examined/ Location	Lowest Reading	Adjacent Area Reading
J	8"SCH 60	.906	.793	C.S.	.800"	.815"

Comments/Sketch/Description (As Applicable) cpt ok 1.9# A 1321

S. W. E. C. SPEC LU-24

Examination Performed by T. Smith Date 9-16-82

NDT Level II

Interpretation Performed by T. Smith Date M. P. 9-16-82

NDT Level II

ULTRASONIC THICKNESS EXAMINATION REPORT

NINE MILE NUC STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

TRAC. #09 00310

2

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 2 of 2

ULTRASONIC THICKNESS EXAMINATION REPORT

Customer: N.M. Register No. WB-9-145X

Contract/PO No. 7100 Piece Mark 09-142-WCS-250-1-145

Calibration: Step Block Increments .1" - 1." Micrometer Reading 9 4/1"

Ultrasonic Instrument Sonic

Search Unit Type AeroTech Frequency 5 MHZ Size 1/4 in.

Couplant Sonotrace 30 Procedure UTP-1-0

Item Identification	Size	Nominal Thickness	Minimum Thickness	Area Examined/ Location	Lowest Reading	Adjacent Area Reading
WT#1	8-16	.906	.793	O.D.	.840	.930

Comments/Sketch/Description (As Applicable) UT OK S.N.R.E.C. # A13943

S. N. R. E. C. P Q T INSPECTED-224

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith Date 11-4-80
NDT Level II

Interpretation Performed by T. Smith Date 11-4-80
NDT Level II

FORM NIC
REV. 2

ITT Grinnell Industrial Piping, Inc.

QUALITY CONTROL

FABRICATION NONCONFORMANCE REPORT

REPORT NO. IP-3956

PROJECT	CONTRACT NO.	CODE SPEC.	REGISTER NO.
NIAGARA MOHAWK	7100	ANSI SECT III CL. 1	NM 19 1 1 1/4

I. DESCRIPTION OF NONCONFORMANCE THE LAP REMOVAL AREA ON THE O.D. OF ITEM (2) IS BELOW MIN. WALL (SEE ATTACHED U.T. REPORT). THE LOW AREA IS APPROXIMATELY 2½" x 1½" IN SIZE AND LOCATED AT THE END OF ITEM (2) MARKED "C" THE LOW AREA IS PERMANENTLY MARKED WITH POTTED ZERO'S.

LOWEST READING = .740

MINIMUM WALL = .793-

S. W. E. P. Q. T. Q. RECEIVED: DATE: 8-27-82

Q. C. REPRESENTATIVE: Chris Davis

J. CORRECTIVE ACTION: HAVE FAB ENGINEERED: ROUTE ALL OPERATIONS NECESSARY TO REPLACE ITEM (2) WITH ACCEPTABLE MATERIAL

OR

ROUTE ALL OPERATIONS NECESSARY TO BUILD UP THE LOW AREA ON ITEM (2). ROUTE AND PERFORM ALL REQUIRED NDE. DOCUMENT ALL REWORK

ENGINEER: DATE: | Q. C.: M. A. Bozen DATE: 8/31/82

COMMENTS:

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P3011
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: 09-B-2-WE 2-2J0-1-145
ITT GRINNELL
KERNERSVILLE, N.C. 27284

RETURN TO Q.C. AFTER COMPLETION OF ABOVE ACTION TO CLOSE FABRICATION NONCONFORMANCE REPORT

REWORK COMPLETED. ~~Operations Records For Signoff~~

REWORK COMPLETED. See Operations records For Signoff

ANI REVIEWED SIGN: RG DATE: 8/31/82

Replaced item #(2). TRACE #02 00310

K. VERIFICATION OF CORRECTIVE ACTION AND CLOSURE OF FNCR: Q164 Q. C.: M. A. Bozen DATE: 11/10/82

GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

ULTRASONIC THICKNESS EXAMINATION REPORT

Customer: N.M. Register No. Wm-9-145-X

Contract/PO No. 7100 Piece Mark 09-14-2-145-250-1-145

Calibration: Step Block Increments .5 - 1. Micrometer Reading 881

Ultrasonic Instrument Sonic

Search Unit Type Krautkramer Frequency 5 MHZ Size 1/4 in

Couplant Sonotrace 30 Procedure UTP-1-0

Item Identification	Size	Nominal Thickness	Minimum Thickness	Area Examined/ Location	Lowest Reading	Adjacent Area Readin
pt #2	8"-145	906	793	o.p.	740	860

S. W. E. C. P.O. INSPECTED-224

Comments/Sketch/Description (As Applicable) Low area @ pipe and liz 2"x1" area.

FABRICATION NONCONFORMANCE REPORT #IP 3956

W. B. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P3018
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
FT. CINCINNATI
KERNERSVILLE N.C. 27284

Examination Performed by T. Smith Date 8-2-82
NDT Level II

Interpretation Performed by T. Smith Date 8-5-82
NDT Level II

TRAC #18 00310

ULTRASONIC THICKNESS EXAMINATION REPORT

2

NO

WP

ITT GRINNELL INDUSTRIAL PIPING, INC.
P. O. Box 566, Kernersville, N. C. 27284

Form N9.1B

EXAMINATION AND DOCUMENTATION CHECK LIST

Nine Mile Point NMP2-P301B
Plant: Nuclear Sta. Unit 2 Job: Niagara Mohawk Corp. Cont. No.: Shop Fabricated Piping

System: WCS Ref. Dwg.: 9-14 Class: Nuc. 1

Piece Mark: 9-14-2-WCS-250-1-146 Register No.: NM-9-1416X

P.O. & Spec. No. NMP2-P301B

N. M. P. C.
NINE MILE NUC. STATION
UNIT - 2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK/-----
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Req'd	In File	
✓ (X)	JO	Data Reports
(X)	M	Materials Manufacturer Code Data Reports
✓ (X)	JO	Shop Traveler (N4.1B)
(N/A)	N/A	Operations Record - Production Planner (N4.1A)
✓ (X)	JO	MT Reports
✓ (X)	JO	PT Reports
✓ (X)	JO	UT Reports
✓ (X)	JO	RT Reports - Including final acceptance
(X)	N/A	Furnace Load Sheet (N8.1A)
(N/A)	N/A	Isometric Sketch
✓ (X)	JO	Engineering Shop Sketches (N2.1C)
✓ (X)	JO	Materials Records (N2.1F)
(N/A)	N/A	Index of Certificates
(X)	Previously Submitted	Certified Material Test Report
(X)	Previously Submitted	Weld Procedure Qualification
(N/A)	N/A	Welder Qualification
(N/A)	N/A	NDE Personnel Qualification
(X)	N/A	Nonconformance Reports
(N/A)	N/A	Materials Receipt Reports (N3.3A)
(N/A)	N/A	Weld Chemical Analysis

S. W. E. C. PQA INSPECTED 224

Stone & Webster Engineering Corporation
☒ APPROVED AS DETAILED ON DOC. SPECIFICATIONS
☐ UNACCEPTABLE
☐ APPROVED AS REVISED AS DETAILED ON THIS SPEC.
☐ REJECTED
I.O. No. 12177.50
SPEC. No. NMP2-P301B
DATE 5-7-79
BY R. HUGGINS

Other Documents Required by Owner or his Agent

(X)	Previously Submitted	Approved Procedures
(X)	Previously Submitted	Certified Product Report

Signed: James H. Rhodes
Quality Control Manager
(NWD)

Where item not required, mark NA

Special Contract System Applicable Documents:

(X)	NA	PWHT Total Time at Temperature
(X)	NA	Painting Documentation
(X)	NA	Supplemental Tests - Special Requirements Class 4

TRANS. #05 00331

1219

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*

(As Required by the Provisions of the ASME Code Rules)

ITT Grinnell Industrial Piping, Inc. Sheet 1 of 3

1. Fabricated by Old Highway 421, Kernersville, NC 27284 (Name and Address of Fabricator) Order No. 7100
Hill, NJ

2. Fabricated for Stone and Webster Engineering Corp Cherry (Name and Address) Order No. NMP2-P301B

3. Owner Niagara Mohawk Power Corp. 4. Location of Plant Scriba, New York

5. Piping System Identification Reactor Water Clean Up (Brief description of intended use, main coolant etc.)

(a) Drawing No. NM-9-1461 Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class NUC-1

Edition 1974, Addenda Date None, Case No. N/A

Remarks: Manufacturers' Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of this report N/A (Name of Part — Item number, Manufacturer's name, and Identifying stamp)

Supplemental Sheets 3 ---Drawings
3 ---Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected: Piece Mark Number 9-14-2-WC5-250-1-146 (include — mark no. — material spec. — nom. pipe size — schedule or thickness — length — fittings — flanges, etc.)

See Attached Sheets

W. E. C. PQA INSPECTED 224

We certify that the statements made in this report are correct and that the fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE.

Date 1-26-83 Signed * By

* ITT Grinnell Industrial Piping, Inc.

Certificate of Authorization Expires 7-16-85 Certificate of Authorization No. N-2444-5

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Conn and employed by ** of Hartford, Ct. have inspected the piping described in this Data Report on 2-2 1983, and state that to the best of my knowledge and belief, the Manufacturer has constructed this piping in accordance with the applicable Subsections of ASME Code, Section III. ** The Hartford Steam Boiler Inspection and Insurance Company

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the piping in this Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

TRANS. #05 00331

Date 2-2, 1983

(Inspector) Commissions VA 321 National Board, State, Province and No.

* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 7, "Remarks".

9. Description of Field Fabrication

10. Field Hydrostatic Test _____ psi.

We certify that the field fabrication of the described piping conforms with the requirements of SECTION III of the ASME BOILER AND PRESSURE VESSEL CODE, Class _____, Edition _____, Addenda Date _____ Case No. _____

Date _____, 19____ Signed _____ (Fabricator) By _____ (Representative)

Our Certification of Authorization to use the _____ Symbol Expires _____ 19____

Certificate of Authorization No. _____

CERTIFICATE OF FIELD FABRICATION INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described piping and state that the parts referred to as data items _____, not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed this piping in accordance with the applicable section of the ASME CODE SECTION III.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the piping described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date _____ 19____

_____ Inspector Commissions _____ National Board, State, Province and No.

2 of 3

ITT GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE, N. C.

FORM-EN-101 REV. 2/79
Q.A. FORM N2.1C
SHT 1 OF 2
SB 1-10-83

[redacted] NO. 7100
AREA
LOCATION NIAGARA MOHAWK
SCRIBA NY

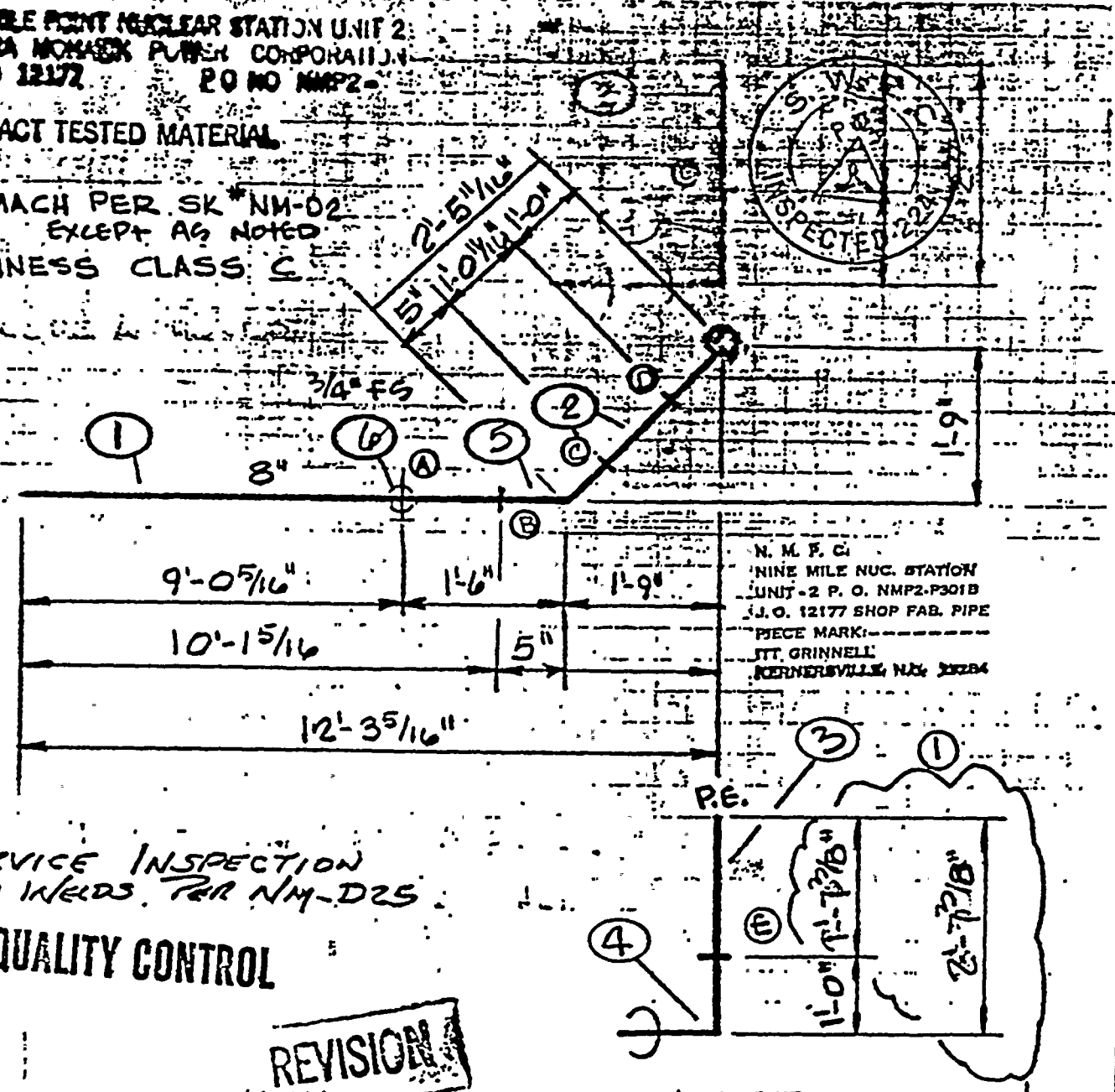
DRW'N JRAY 12-5-79 CHK'D [illegible] 11-17-81
① REV DB 5-20-82 CHK'D FEB 5-27-82
② REV DB 7-9-82 CHK'D FEB 7-9-82
REV. _____ CHK'D _____

NINE MILE POINT NUCLEAR STATION UNIT 2
NIAGARA MOHAWK POWER CORPORATION
JO NO 12177 PO NO NMP2-

IMPACT TESTED MATERIAL

ENDS: MACH PER SK *NM-02
EXCEPT AS NOTED
CLEANLINESS CLASS C

Fabricated for: Stone and Webster Engineering Corp.
Cherry Hill, N. J.
P. O. NMP2-P301B
Piping System Lee Cubby



INSERVICE INSPECTION
GRIND WELDS PER NM-D25

QUALITY CONTROL

REVISION

CLASS NUC. 1 LINE SPEC. 1511 APP. CODE ASME III NO. REQ'D

Radiography (RT)	①	Special Marking		Preheat		Cert. of Compliance	
[redacted]. Particle (MT)	✓	Special Cleaning	✓	Heat Treat		Mill Test Reports	✓
[redacted] Penetrant (PT)		Painting		Code Stamp	✓	Data Reports	✓

SYSTEM WCS FAB. SPECS. JS-137
REF. DRW'G NO. EP-74A Δ; 09-14 Δ PRESS. 2200 PSI. TEMP. 575 °F. WT. 1215 LBS.
PIECE MARK 9-14-2-WCS-250-1-146 REGISTER NM 9 1 1 46X
TRANS. # 00331

ITT GRINNELL INDUSTRIAL PIPING, IN

FORM [illegible] REV. 8-79
Q. A. [illegible] 12.15
383 1-10-83
Sheet 2 of 2

CONT. NO. 7100
NAME NIAGARA MOHAWK
LOCATION SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

PIECE MARK 29-14-2-WCS-250-1-146

REGISTER NM 9 146X
REV. NO. BY DATE

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER	QR	FT/EA/PO	IN.	FRACTIONS	HEAT NUMBER	QUALITY CONTROL DOCUMENT	IN PROCESS	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE SA333 GR.6									
	NM-91-	F	10	9	5/16	72		see attached sheet		
2	8" SCH 160 SMLS C.S. PIPE SA333 GR.6									
	NM-91-	F	1	0	11/16					
3	8" SCH 160 SMLS C.S. PIPE SA333 GR.6									
	NM-91-	F	1	7	3/8	(1)				
4	8" SCH 160 SMLS C.S. 90° LRWE SA234WPB									
	NM-1003- 5-	E	1							
5	8" SCH 160 SMLS C.S. 45° LRWE SA234WPB									
	NM-1003- 6-	E	1							
6	8"x 3/4" 6000# SOL SA105									
	NM-3166-	E	1							
	Fabricated for Stone and Webster Engineering Corp.									
	Cherry Hill, N. J.									
	P. O. NMP2-P301B									
	8" C.S.E.P. *Piping System WCS*									
		E	2	2						
	3/4" C.S.E.P. ITT GRINNELL IND. PIPING									
		E	1			KERNERSVILLE, N. C.				

SHOP COPY LAYOUT

REVISION

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
P.O. 12 77 SHOP FAB. PIPE
PIECE MARK-----
ITT GRINNELL
KERNERSVILLE, N.C. 27284

UNIT PRICE P. O.	DIS VENDOR	NET
TOTAL		

CODE ASME III, CL.1 CUST LINE SPEC. 15 MFG CODE L X SIZE 8

PAGE 208 0031

0031

GRINNELL INDUSTRIAL PIPING, INC.

STEVE LONG SOCKET
FAB. ENGINEER 7/8/82 SHOP COPY REVISED

Sheet 2 of 2

CONT. NO. 7100
NAME
LOCATION NIAGARA MOHAWK
SCRIBA NY

MATERIALS RECORD
PRODUCTION PLANNER

PIECE MARK 09-14-2-WCS-250-1-146

REGISTER NM 9 146X
REV. NO. BY DATE

ITEM	DESCRIPTION / PART NUMBER/STOCK NUMBER	QTY	FT/EA/PD	IN	FRACTIONS	HEAT NUMBER	QUALITY CONTROL DOCUMENT	IN PROCESS	INSPECTION	WHSE LOCATION
1	8" SCH 160 SMLS C.S. PIPE 5/16" SA-333 GR.6							Q172	Q129	
	NM-9-	F	9	0	5/16	60775 SN12 UT-2-1	P527 Hyd	8/3/82	7-13-82	
2	8" SCH 160 SMLS C.S. PIPE SA-333 GR.6							Q15	Q129	
	NM-9-	F	1	0	11/16	60775 SN12 UT-2-1	P527 Hyd		7-13-82	
3	8" SCH 160 SMLS C.S. PIPE SA333 GR.6						P527	Q10	Q129	
	NM-9-	F	1	7	3/8	60775 SN12 UT-2-1	P527 Hyd		7-13-82	
4	8" SCH 160 SMLS C.S. 90° LRWE SA234WPB							8/4/82		
	NM-1003- 5-	E	1			QSL	Bwf902 Hyd	Q14		D1-4-9
5	8" SCH 160 SMLS C.S. 45° LRWE SA234WPB							8/4/82		
	NM-1003- 6-	E	1			RBE	Bwf908 Hyd	Q14		1
6	8"x 3/4" 6000# SOL SA105							Q172		
	NM-3166-	E	1			P595	Bwf184 Hyd	10-21-82		G2-46-9
	8" C.S.E.P.	E	2							
	3/4" C.S.E.P.	E	1							

INSPECTED 224

SUPPLEMENTAL MATERIALS RECORD

JUL 30 1982 DELIVERED

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-[illegible]
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

GATHERED

CODE ASME III, CL.1 GUST LINE SPEC 15

MFG CODE L X

UNIT PRICE P.O. DIS VENDOR NET

TOTAL

JUN 23 1982

TRANS. NO. 0.0.8341

ITT Grinnell Industrial Piping, Inc. TRAVELER SHEET 1 OF 2

PROJECT NIAGARA CONTRACT 7100 PC. MK. A-14-2-4 SPEC. SG-1A-1 REV. 10 # N.M. 9 1 14 W K

SPECIFICATION JS-137-14

WELD	FIT-UP/PREHEAT			HEAT NO.	ROOT		INTERMEDIATE		FINAL			RT DATE			MAG	LP
	WELDER I.D.	WELD MAT'L	Q.C. INSP.		WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	WELDER I.D.	WELD MAT'L	Q.C. INSP.	Q.C.	AI	CUST.	ROOT	FINAL
A	PROC. 5-4				PROC. 5-4		PROC. 1-3 1-3		PROC. 1-3							
	1201	NAGAC	Q172		C185	NAGAC	C185	NAEAW	Q170	NAEAW	Q170	—	—	—	—	
DATE	9-24-82		10-20-82		10/24/82		10/24/82		10/26/82		11-4-82				11-4-82	
B	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	1201	NAGAC	Q172		C165	NAGAC	C185	NAEAW	C570	NAVAE NGDAB	Q177	11/16/82	11/17/82	11/19/82	—	
DATE	10-21-82		10-26-82		10/24/82		10/24/82		11-3-82		11/3/82				11-4-82	
C	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	S243	NAGAC	Q164		C-306	NAGAC	C-306	NAEAW	C570	NAVAE NGOAB	Q172	12/10/82	—	11/26/83	—	
DATE	8-2-82		8-28-82		8-4-82		8-4-82		8-24-82		10-20-82				11-4-82	
D	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	S243	NAGAC	Q164		C306	NAGAC	C-306	NAEAW	C570	NAVAE NGOAB	Q172	12/1/82	12/2/82	12/7/82	—	
DATE	8-28-82		8-28-82		8-4-82	8-5-82 S.P.	8-4-82	8-5-82 S.P.	8-24-82		10-20-82				11-4-82	
E	PROC. 5-4				PROC. 5-4		PROC. 1-3		PROC. 3-4							
	S119	NAGAC	Q170		C582	NAGAC	C582	NAEAX	C570	NAVAE NGNAB	Q172	11/16/82	11/17/82	11/18/82	—	
DATE	8/26/82		9/26/82		10/13/82		10/13/82		10-20-82		10-20-82				11-4-82	

STRESS DATE N/A Q170 11-4-82

SQUARE UI 8105 12-13-82 Q177 Q172 12/13/82

JS-137-14

FINAL INSP. Q177 12-13-82 Q177 11-4-82

N/A

CUST INSP 1-5-83

SPECIAL OPERATIONS: C DIM. N/A

WALL THK N. M. P. C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2.P301B

OTHER J.O. 12177 SHOP FAB. PIPE PIECE MARK ---------- ITT GRINNELL

Q.C. DOC. APPROVAL 5B 1-26-83

A/I STAMP/DATA REPORT E-2-83

CUST DOC. APPROVAL

TRANS. FOR 003831

ITT Grinnell Industrial Piping, Inc. TRAVEL SHEET C OF [redacted]

PROJECT NIAGARA CONTRACT 7100 PC. MK. # Q-14-2-WCS-250-1-146 REG. # NM 9 1-1.6K

WELD	FIT-UP/PREHEAT WELDER I.D.	WELD MAT'L	Q.C. INSP.	BACKING MAT'L	ROOT WELDER I.D.	WELD MAT'L	INTERMEDIATE WELDER I.D.	WELD MAT'L	FINAL WELDER I.D.	WELD MAT'L	Q.C. INSP.	RT DATE Q.C.	RT DATE AI	RT DATE CUST.	MAG ROOT	LP FINAL
Code	PROC.	5-1			PROC.		PROC.		PROC.							
Plate 201		NAEAC	Q172													
DATE	12-24-82		10-21-82												M-9-82	
Rewld C	PROC.				PROC.	5-4	PROC.	1-3	PROC.	1-3		12/10/82	—	1/26/83	—	311½
					C-123	NAGAD	C-123	NAEAW NAEAX	C-123	NAEAS	Q172					
DATE					11-23-82		11-23-82		11-23-82		11-23-82				12-13-82	
Rewld D	PROC.				PROC.	5-4	PROC.	1-3	PROC.	1-3		12/1/82	12/2/82	12/7/82	—	311½
					C-123	NAGAD	C-123	NAEAW NAEAX	C-123	NAEAS	Q172					
DATE					11-23-82		11-23-82		11-23-82		11-23-82				12-13-82	
Rewld CR1	PROC.				PROC.	5-4	PROC.	1-3	PROC.	1-3		12/10/82	—	1/26/83	—	311½
					C136	NAGAD	C136	NAEAW	C136	NAEAX	Q170					
DATE					12/6/82		12/6/82		12/6/82		12-12-82				12-13-82	
	PROC.				PROC.		PROC.		PROC.							
DATE																
	PROC.				PROC.		PROC.		PROC.	N. M. P. C. NINE MILE NUC. STATION UNIT-2 P. O. NMP2-P301B J.O. 12177 SHOP FAB. PIPE PIECE MARK:- - - - - - - ITT GRINNELL KERNERSVILLE, N.C. 27284							
DATE																
	PROC.				PROC.		PROC.		PROC.							
DATE																

INSPECTED 1-24 SWEC

TRACK FOR 0 0 8 3 1

7

Req. No. Nuc1 | In-Process ☐ | **RADIOGRAPHIC INSPECTION REPORT** | Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. | Repair ☐ | Form N6.3A | Date 11-10-82

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-146X	9142IICS-250-1-146	B	8" S160	C185 R1 C570-B

Views		4
Source		Ir192
Source Curies or KVP & MA		103
Source Size or Focal Spot		.1 x .1
TECHNIQUE	Source Film Distance	8-6"
TECHNIQUE	Time	:55
TECHNIQUE	Actual Weld Thickness	.968
TECHNIQUE	Penetrameter	17
TECHNIQUE	Sensitivity	4T
Shim Thickness		.062
Film Size		4½ x 10
Film Type		55
Viewing Technique		Single [X] Double [ ]
Screen	Front	.010
Screen	Back	.010
Development	68° Kodak 6 min.	
Development	Automatic	X

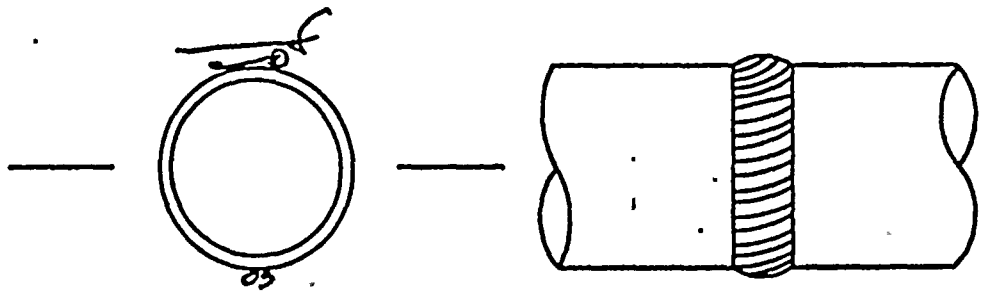
Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
A-E											-	A	
E-I											-	"	
I-K											-	"	
K-A				A							PA C-M -	"	
											-		
											-		
											-		
											N. M. P. C. NINE MILE NUC. STATION UNIT #2 P. O. NMP2-P301B J. O. 12177 SHOP FAB. PIPE PIECE MARK: ---------- ITT GRINNELL KENNERSVILLE, N.C. 28405 -		

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline



Radiographer — Date 11-16-82 By [signature]

Interpretation — Date 11-16-82 By [signature]

Approval — Date 11-16-82 By [signature]

Customer ~~Niagara Mohawk~~ | Location Nine Mile Point Unit 2

Contract 7100 | Job No. _____

Inspection Standard _____ | Acceptance Standard RTA-1-1

Authorized Insp. RTP-3-1 11/16/82 By [signature]

Customers Approval — Date 11/19/82 By [signature]

TRANS. FOR 00331

Req. No. N4c 1 | In-Process ☐ | **RADIOGRAPHIC INSPECTION REPORT** | Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. | Repair ☐ | Form N6.3A | Date 12-6-92

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
N1-__9-___-1X6K	9-14-2WCS-250-1-146	CA2	8" S160	C306RJ C030B C126RCB C126RCD

		INTERPRETATION														
		Film Interval	Defect Type										Comments	Interpretation	
			LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
	Views: Y	AE											SYARLEE	A	
	Source: IR192	EH'												T	
	Source Curies or KVP & MA: 60	HL												T	
TECHNIQUE	Source Film Distance: 8.6	CA												A	
TECHNIQUE	Time: 1:15														
TECHNIQUE	Actual Weld Thickness: .968														
TECHNIQUE	Penetrameter: 17														
TECHNIQUE	Sensitivity: 4T														
	Shim Thickness: .062														
	Film Size: 4½ X 10														
	Film Type: D7														

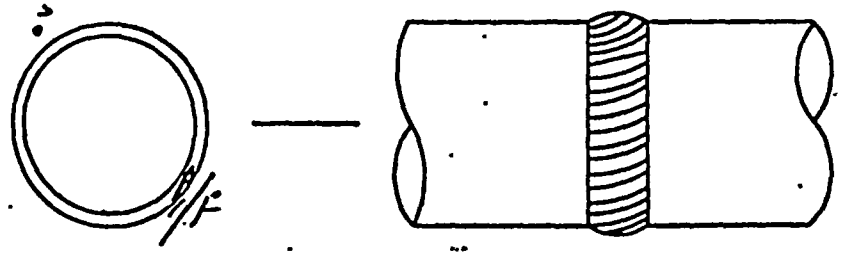
INSPECTED S.W.P.A. 224

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Viewing Technique	Single ☒	Double ☐
Screen	Front	.010
	Back	.010
Development	68° Kodak 6 min.	
	Automatic	X

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline



Welding Procedure
Root: 5-4
Intermediate: 1-3
Balance: 1-3 / 3-4
11-30-92 P. Smythe Cert II
11-14-92 N Rawn Cert I

Radiographer — Date 12-9-92 By Raymond Cert II
Interpretation — Date 12-10-92 By Robert Thompson Cert II
Approval — Date 12-10-92 By R Thompson II

Customer Niagara Mohawk
Contract 7100
Inspection Standard ATP 3-1
Authorized Insp. — Date _____ By _____
Customers Approval — Date 1-26-93 By Mark Mills Cert II

Location Nine Mile Point Unit #2
Job No. _____
Acceptance Standard ATP-1-1

MARK FOR 0033.1

12

G16

Req. No. Nuc1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☑ Date 11-24-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-146X	9-14-2WCS-250-1-146	CRL	8" S160	C306-R1 CS70-B C123-R1B

TECHNIQUE		
	Views	Y
	Source	IR192
	Source Curies or KVP & MA	60
	Source Size or Focal Spot	.4x.1
	Source Film Distance	8625
	Time	1:40
	Actual Weld Thickness	.968
	Penetrameter	17
	Sensitivity	2T
	Shim Thickness	.062
	Film Size	4½x10
	Film Type	55
	Viewing Technique	Single ☒ Double ☐

Screen	Front	.01
	Back	.01
Development	68° Kodak 8 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 1-3

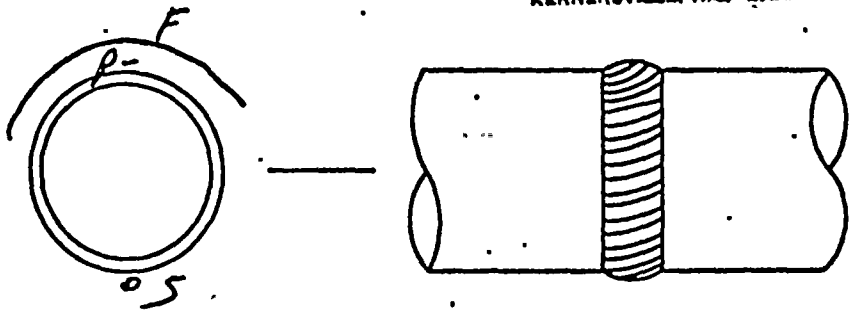
INTERPRETATION

Film Interval	Defect Type										Comments	Interpretation	
	LP	LF	S	P	BT	UC	C	CR	T	HL		ACC.	R
A-E											SURFACE	A	
E-H												A	
H-L											RS		R
L-A			R								SA L-M		T

LP — Lack of Penetration
LF — Lack of Fusion
S — Slag
P — Porosity
BT — Burn Thru
UC — Under Cut
C — Crater
CR — Crack
T — Tungsten
HL — High Low

Severity
A — Acceptable
R — Rejectable
B — Borderline

N.M.P.C.
NINE MILE NUC. STATION
UNIT 2 R.O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK-
ITT GRINNELL
KERNERSVILLE, N.C. 27284



Radiographer — Date 11-82 By [signature]

Interpretation — Date 11-24-82 By John Mayrow Gr II

Approval — Date _____ By _____

Customer Niagara Mohawk
Contract 7100
Inspection Standard ~~RTP-1-1~~
Authorized Insp. — Date _____ By _____
Customers Approval — Date _____ By _____

~~Nine Mile Point Unit 2~~
Location _____
Job No. _____
Acceptance Standard RTA-1-1

TRANS #08 00831

G

Req. No. Nuc1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours _____

ITT GRINNELL INDUSTRIAL PIPING, INC. Kcp Repair ☐ Date 11-10-82

Form N6.3A

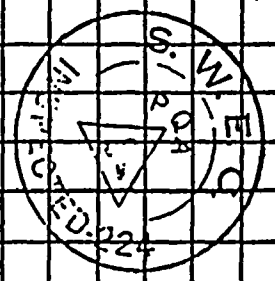
Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-__9-___-146X	9-14-2WCS-250-1-146	___C	8" S160	C306 R1 C570-B

Views	4	
Source	Ir192	
Source Curies or KVP & MA	103	
Source Size or Focal Spot	.1x.1	
TECHNIQUE — Source Film Distance	8.6"	
TECHNIQUE — Time	.55	
TECHNIQUE — Actual Weld Thickness	.968	
TECHNIQUE — Penetrameter	17	
TECHNIQUE — Sensitivity	4T	
Shim Thickness	.062	
Film Size	4½x10	
Film Type	55	
Viewing Technique	Single ☒ Double ☐	
Screen — Front	.010	
Screen — Back	.010	
Development — 68° Kodak 8 min.		
Development — Automatic	X	

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

INTERPRETATION

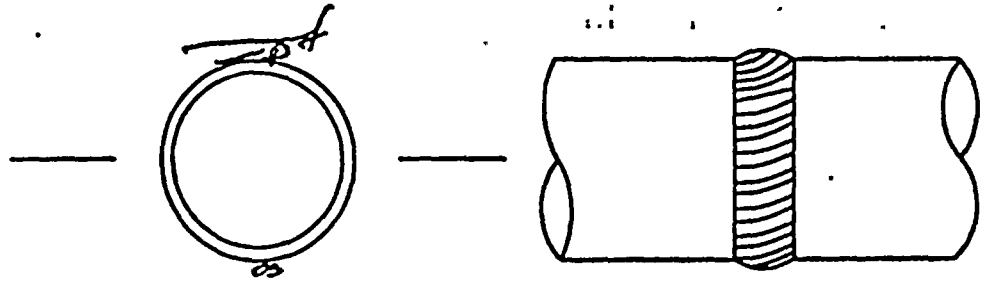
Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
A-E													
E-I											process cl		
I-L													
L-M			R								SR L-M		↑



N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK-
ITT GRINNELL
KENNERSVILLE, N.C. 29284

LP — Lack of Penetration
LF — Lack of Fusion
S — Slag
P — Porosity
BT — Burn Thru
UC — Under Cut
C — Crater
CR — Crack
T — Tungsten
HL — High Low

Severity
A — Acceptable
R — Rejectable
B — Borderline



Radiographer — Date 11-4-82 By [signature]

Interpretation — Date 11-16-82 By [signature] Level II

Approval — Date _____ By _____

Niagara Mohawk — Nine Mile Point Unit 2

Customer _____ Location _____

Contract 7100 Job No. _____

Inspection Standard RTP-3-1 Acceptance Standard RTA-1-1

Authorized Insp. — Date _____ By _____

Customers Approval — Date _____ By _____

TRANS. #08 0 0 3 3 1

11

Req. No. Nuc1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☑ Date 11-24-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
DM--9---=-146X	9-14-2HCS-250-1-146	DR-1	8" S160	C306-R1 C570-B C123-R1B

Views	4
Source	Ir192
Source Curies or KVP & MA	55
Source Size or Focal Spot	.1x.1
TECHNIQUE — Source Film Distance	8.625"
TECHNIQUE — Time	1:40
TECHNIQUE — Actual Weld Thickness	.968
TECHNIQUE — Penetrameter	17
TECHNIQUE — Sensitivity	4T
Shim Thickness	.062
Film Size	4½x10
Film Type	55
Viewing Technique	Single ☒ Double ☐

Screen	Front	.01
	Back	.01
Development	68° Kodak 6 min.	
	Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 1-3 3-4

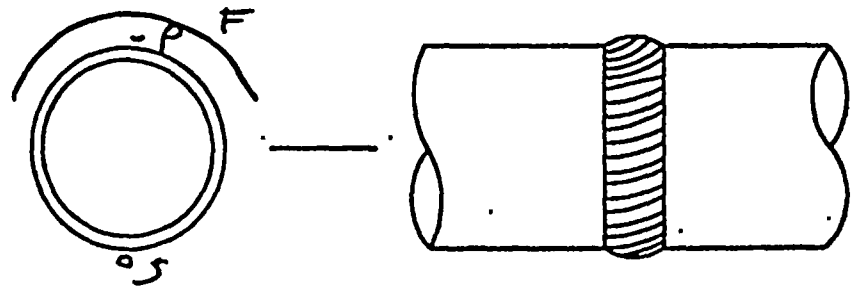
INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
A-E											JA B-C & E D	A	
E-1												A	
1K												A	
KA											SURFACE	A	

INSPECTED 221

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru
UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low
Severity: A — Acceptable; R — Rejectable; B — Borderline

M M P C
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2-P0018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK
ITT GRINNELL
KERNERSVILLE, N.C. 27284



11-14-82 N. BRAY Level II

Radiographer — Date 11-30-82 By [signature]

Interpretation — Date 12-1-82 By Don Thompson Level II

Approval — Date 12-1-82 By [signature]

Customer Niagara Mohawk Location Nine Mile Point Unit 2

Contract 7100 Job No.

Inspection Standard Acceptance Standard RTA-1-1

Authorized Insp. — Date RTP-3-1 12-2-82 By [signature]

Customers Approval — Date 12-7-82 By D. C. Williams Level III

TRANS. #08 00321

C 05

Req. No. Nuc.1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Kcp Repair ☐ Date 11-10-82

Form N6.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
nm--9----146K	9-14-2WCS-250-1-146	---D	8"S160	C306-R1 C570-B

Views	4
Source	Ir 192
Source Curies or KVP & MA	103
Source Size or Focal Spot	.1x.1
TECHNIQUE — Source Film Distance	8.6"
TECHNIQUE — Time	.55
TECHNIQUE — Actual Weld Thickness	.968
TECHNIQUE — Penetrameter	17
TECHNIQUE — Sensitivity	4T
Shim Thickness	.062
Film Size	4½x10
Film Type	55
Viewing Technique	Single ☒ Double ☐
Screen — Front	.010
Screen — Back	.010
Development — 68° Kodak 6 min.	
Development — Automatic	X

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

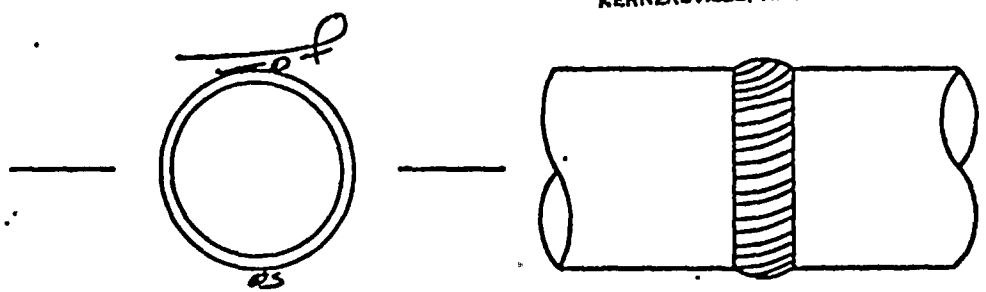
INTERPRETATION

Film Interval	Defect Type LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation ACC.	R
A-E			A	A							PLSA N6		K
E-I												K	
I-K												T	
KA			R								SR L-M LN-A		C

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMP2.P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK----------
ITT GRINNELL
KERNERSVILLE, N.C. 27284



N6 A-E
K-A

Radiographer — Date 11-14-82 By R. Richardson

Interpretation — Date 11-16-82 By John Thompson Cert #

Approval — Date ____ By ____

Customer Niagara Mohawk Location Nine Mile Point Unit 2

Contract 7100 Job No. ____

Inspection Standard RTP-3-1 Acceptance Standard RTA-1-1

Authorized Insp. — Date ____ By ____

Customers Approval — Date ____ By ____

FILM # 0033

Req. No. Nuc.1 In-Process ☐ **RADIOGRAPHIC INSPECTION REPORT** Standard Hours

ITT GRINNELL INDUSTRIAL PIPING, INC. Repair ☐ Date 11-10-82

Form N8.3A

Register No.	Piece No.	Weld No.	Pipe Size and Schedule	Welder No.
NM-9-146X	9-14-2WCS.250-1-146	E	8" S160	C582-R1 C570-13

Views	4	
Source	Ir 192	
Source Curies or KVP & MA	.107	
Source Size or Focal Spot	1x1	
TECHNIQUE — Source Film Distance	8.6"	
TECHNIQUE — Time	:55	
TECHNIQUE — Actual Weld Thickness	.968	
TECHNIQUE — Penetrameter	17	
TECHNIQUE — Sensitivity	4T	
Shim Thickness	.062	
Film Size	4½x10	
Film Type	55	
Viewing Technique	Single ☒ Double ☐	
Screen — Front	.010	
Screen — Back	.010	
Development — 68° Kodak 6 min.		
Development — Automatic	X	

Welding Procedure
Root 5-4
Intermediate 1-3
Balance 3-4

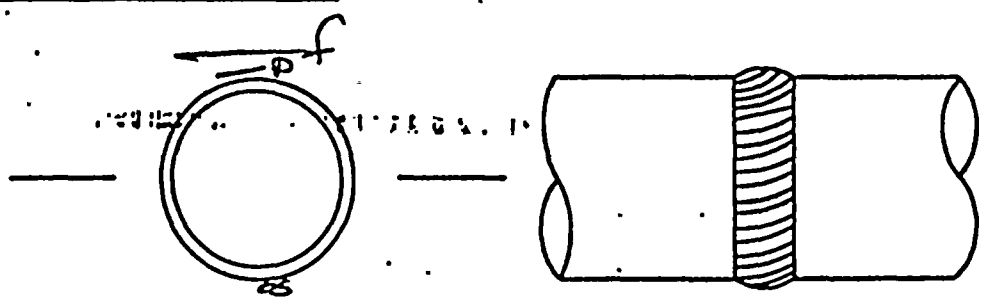
INTERPRETATION

Film Interval	Defect Type: LP	LF	S	P	BT	UC	C	CR	T	HL	Comments	Interpretation: ACC.	R
AE											-	A	
EH											scattered clr -	A	
HK											-	A	
KA											-	A	
											-		
											-		
											-		
											-		
											-		

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P3018
J. O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

LP — Lack of Penetration; LF — Lack of Fusion; S — Slag; P — Porosity; BT — Burn Thru; UC — Under Cut; C — Crater; CR — Crack; T — Tungsten; HL — High Low

Severity: A — Acceptable; R — Rejectable; B — Borderline



Radiographer — Date 11-11-82 By R. Bernard
Interpretation — Date 11-16-82 By John Thompson Level II
Approval — Date 11-16-82 By John Anderson II

Customer Niagara Mohawk
Contract 7100
Inspection Standard
Authorized Insp. — Date 11-16-82 By (R.J.) Mark Mike Lentz
Customers Approval — Date 11/18/82 By

Location Nine Mile Point Unit 2
Job No.
Acceptance Standard RTA-1-1

TRANS. FOR 00331

1/

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer NM Register Number NM-9-146X

Contract/PO No. 7100 Piece Mark 9-14-2-WCS-250-1-1

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. G-4

Examination Method Dry Powder Continuous

Procedure MTA-1-1 Acceptance MTA 1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
A	3/4" 6000#	FINAL	✓	
B,C,D,E	8" S/160	FINAL	✓	
CODE	PLATE	FINAL	✓	

S.W.E.C. S.I. QA INSPECTED 224

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK: ---------
ITT GRINNELL
KERNERSVILLE N.C. 27284

Examination Performed by [signature] NDT Level II Date 11-4-82

Interpretation Performed by [signature] NDT Level II Date 11-4-82

ITT GRINNELL INDUSTRIAL PIPING, INC. — Page 1 of 1

MAGNETIC PARTICLE EXAMINATION REPORT

Customer N.M. Register Number 12h-9-146X

Contract/PO No. 5100 Piece Mark 9-14-2-WCS-250-1-14

System WCS

Equipment Type: DC Prods _____ AC Yoke ✓ Serial No. C-2

Examination Method Dry Powder Continuous

Procedure MTP-1-1 Acceptance MTP-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
1 CRD DR1	8" Sch 160	RT-Mag	✓	

S.W.E.C. PQA INSPECTED 124

Comments

N. M. P. C.
NINE MILE NUC. STATION
UNIT 2 P. O. NMPC-P301D
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE N.C. 27284

Examination Performed by T. Smith Date 12-13-82
NDT Level II

Interpretation Performed by T. Smith Date 12-13-82
NDT Level II

MAGNETIC PARTICLE EXAMINATION REPORT

TRANS #05 00331

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ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

LIQUID PENETRANT EXAMINATION REPORT

Customer N.M. Register Number WS-9-146X

Contract/PO No. 7100 Piece Mark 9-14-2-WC 5-250-1-146

System WC.S

Examination Method Solvent Removable Visible Dye

Penetrant Batch No. H-322 Penetrant Manufacturer Tracer-Tech

Developer Batch No. H-314 Procedure PTP-1-2

Cleaner Batch No. H-307 Acceptance PTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
D+C	8"x8"-160	garage area	✓	

S.W.E.C. PQA INSPECTED 22

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Comments

Examination Performed by T. Smith Date 11-22-82
NDT Level II

Interpretation Performed by T. Smith Date 11-22-82
NDT Level II

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

LIQUID PENETRANT EXAMINATION REPORT

Customer A.N.P. Register Number NM-9-146X

Contract/PO No. 7100 Piece Mark 9-14-2-WCS-250-1-146

System W.C.S.

Examination Method Solvent Removable Visible Dye

Penetrant Batch No. H-322 Penetrant Manufacturer Tracer-Tech

Developer Batch No. H-314 Procedure PTP-1-2

Cleaner Batch No. H-327 Acceptance PTA-1-0

Item Identification Weld/Serial/Ht. No.	Size and Thickness	Area Examined Indicate, Root, Intermediate, Final Weld, or Material as Applicable	Interpretation Accept	Interpretation Reject
1 CR1	8" Sch. No	gauge area	—	

S.N.E.C. P QA INSPECTED 224

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KENNERSVILLE, N.C. 29284

Comments

Examination Performed by T. Smith Date 12-3-82
NDT Level II

Interpretation Performed by T. Smith Date 12-3-82
NDT Level II

LIQUID PENETRANT EXAMINATION REPORT TRANS. #05 00331

1

ITT GRINNELL INDUSTRIAL PIPING, INC. Page 1 of 1

ULTRASONIC THICKNESS EXAMINATION REPORT

Customer: N.M. Register No. NM-9-146X

Contract/PO No. 7100 Piece Mark 9-14-2-WCS-250-1-146

Calibration: Step Block Increments .1" - 1." Micrometer Reading 891

Ultrasonic Instrument Sonic

Search Unit Type Aerotech Frequency 5 MHZ Size 1/4 in.

Couplant Sonotrace 30 Procedure UTP-1-0

Item Identification	Size	Nominal Thickness	Minimum Thickness	Area Examined/ Location	Lowest Reading	Adjacent Area Reading
B	8"-Sch 160	.906	.793	O.D.	.820	.885

Comments/Sketch/Description (As Applicable) U/T O.K. I.R. # 14544

S.W.E.C. QA INSPECTED 224

N. M. P.C.
NINE MILE NUC. STATION
UNIT-2-P.O. NMP2-P30TB
J.O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

Examination Performed by T. Smith Date 12-29-82

NDT Level II

Interpretation Performed by T. Smith Date 12-29-82

NDT Level II

Taylor-Bonney Division
Energy Products Group
GULF + WESTERN MANUFACTURING COMPANY

Log No. 199-11 / 416-3 Page 1 of 1

CORRECTED CERTIFICATION - 10/9/80

CUSTOMER: ITT GRINNELL CORP

CUSTOMER'S Order No.: KER 12893-F

SHIPPED TO: ITT GRINNELL CORP
PO BOX 566
HIGHWAY 421
KERNERSVILLE NC 27284

Date FEBRUARY 12, 1980

Bonney Order No. 80234

Mark 00173

Item No.	Quantity No.	Bonney Lot No.	Grade or Specification No. Chemical Analysis, Physical Properties, Remarks:
			SA105
7 23636	2 NM-3166	P595	.8 (.906) X 3/4 (.218) 6000# Sockolet C.30 Mn.90 P.007 S.025 Si.21 T/S 85,025 Y/S 53,299 El 30 Ra 62.5

INSPECTED S.W.E.C. 103

N. M. P. C.
NINE MILE NUC. STATION
UNIT-2 P. O. NMP2-P301B
J. O. 12177 SHOP FAB. PIPE
PIECE MARK:---------
ITT GRINNELL
KERNERSVILLE, N.C. 27284

ITTG - IPI
QUALITY CONTROL
APPROVED
T. C. WILSON
DATE OCT. 16 1980
SHEET 1 OF 1

This is to certify that:

1. The fittings supplied are in complete accordance with the ASME Boiler and Pressure Vessel Code, Section III, Class 1, 1974 Edition with no Addenda, SA105, Grinnell Purch Specs NM-001, Rev. 3, NM-005, Rev. 3, and the purchase order.

2. The fittings supplied were Magnetic Particle Tested and satisfactory results obtained in accordance with ASME Section III, NB2545, BF-MP-4, Rev. 0, Add. 1, by John L. Shuster, SNT-TC-1A, Level II.

3. The material included on this test report was manufactured under ASME Quality Systems Certificate (Materials) No. N-2286-1, expires March 30, 1982.

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory check

Bonney Forge
Cedar and Meadow Streets, P O. Box 359
Allentown, Pennsylvania 18105
(215) 435-9611, Telex: 847453

by L. M. Landenberger
QUALITY ASSURANCE MANAGER

FORM 2132A