DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

July 9, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

In regards to my July 6, 1984 letter concerning compliance with GDC 51 "Fracture Prevention of Containment Pressure Boundary," please find attached the information which we committed to provide.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

RWO/ssb

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

NRC Resident Inspector
Catawba Nuclear Station

Mr. Jesse L. Riley
Carolina Environmental
Study Group
854 Henley Place
Charlotte, North Carolina
28207

Mr. Robert Guild, Esq.
Attorney-at-law
P. O. Box 12097
Charleston, South Carolina 29412

Palmetto Alliance
2135½ Devine Street
Columbia, South Carolina 29205

B001
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Catawba Nuclear Station
Power Piping and Mechanical Penetrations
Compliance with GDC 51

I. POWER PIPING AND MECHANICAL PENETRATION MATERIALS

Section 3.1, page 32 of the Catawba Final Safety Analysis Report addresses General Design Criterion 51 of Appendix A of 10CFR Part 50. This section states that the reactor containment boundary shall be designed with sufficient margin to assure that under operating, maintenance, testing, and postulated accident conditions (1) its ferritic materials behave in a nonbrittle manner and (2) the probability of rapidly propagating fracture is minimized. This section also states that the design shall reflect consideration of service temperatures and other conditions of the containment boundary material during operation, maintenance, testing and postulated accident conditions, and the uncertainties in determining (1) material properties, (2) residual, steady-state, and transient stress, and (3) size of flaws.

Duke Power Company has complied with these commitments for mechanical penetrations through selection of materials used in design of the mechanical penetrations. These materials have proven reliable and not subject to brittle fracture in Duke Power's operating plants and in general industry service.

Mechanical penetrations for Catawba meet all code requirements. The effective code for mechanical penetrations is the 1974 edition of the ASME Boiler and Pressure Vessel Code, Section III, Subsection NC including summer 1974 addenda.

In addition to complying with the FSAR commitments and code requirements, the mechanical penetrations comply with guidelines for GDC 51 compliance of Standard Review Plan NUREG 0800 for power operation including power transient conditions. In accordance with NUREG 0800, an assessment of material fracture toughness is made using fracture toughness data presented by NUREG-0577 and ASME Section III, Summer 1977 Addenda, Subsection NC. Using this method a Permissible Lowest Service Metal Temperature (PLSMT) is established for pressure boundary materials. An analysis of the power piping and mechanical penetration materials is discussed below:

A. Penetration Assemblies

1) Main Steam and Feedwater Penetration Flued Heads - SA 105; annealed, 2" design axial thickness (see Attachment 1 - June 23, 1983 letter by D. L. Caldwell). NUREG-0577, Table 4.4 assigns a ($\overline{NDT}$ + 1.3σ) NDT of 67°F/77°F to this material. Given the 5 1/2" design axial thickness, the Summer 1977 Addenda Class 2 rules would assign a PLSMT of 125°F/135°F to the material. However, Duke's analysis states the flued heads are part of a floating penetration assembly, which would require a $\leq$ 2" axial thickness under the limiting condition. Given a 2" axial thickness, the Summer 1977 addenda Class 2 rules would assign a PLSMT of 107°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

2) Main Steam Penetration Process Pipe - SA 106 Gr. C; 1.5" min. wall. NUREG-0577, Table 4.4 assigns a ($\overline{NDT}$ + 1.3σ) NDT of 77°F. Summer Addenda Class 2 rules assign a PLSMT of 107°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

3) Main Feedwater Penetration Process Pipe - SA 106 Gr. B; 0.937 min. wall. NUREG-0577, Table 4.4 assigns a ($\overline{NDT}$ + 1.3σ) NDT of 77°F. Summer 1977 Addenda Class 2 rules assign a PLSMT of 107°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

B. Piping Subassemblies

1) Main Steam Process Pipe - SA 106 Grade C; 31.438" ID x 1.75" min. wall and 31.438" ID x 1.375" min. wall. NUREG-0577, Table 4.4 would assign a ($\overline{NDT}$ + 1.3σ) NDT of 67°F/77°F to this material. Summer 1977 Addenda Class 2 rules would assign a PLSMT of 97°F/107°F to the material. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

2) Main Steam Process Pipe Fittings - SA 234 WPC (SA 106 Gr. C) 31.5" ID x 2.37" nom. wall manifold. NUREG-0577, Table 4.4 would assign a ($\overline{NDT}$ + 1.3σ) NDT of 67°F/77°F to this material. Summer 1977 Addenda Class 2 rules would assign a PLSMT of 97°F/107°F to this material. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

SA 234 WPC (SA 106 Gr. C); 31.625" x 1.375" min. wall ell; 31.625" x 1.750" min. wall (see above analysis).

SA 105, normalized, 1" x 3000#, 2" x 3000" weld boss; est. thickness $\leq$ 2 1/2". NUREG -0577, Table 4.4 would assign a ($\overline{NDT}$ + 1.3σ)NDT of -5°F to this material. Summer 1977 Addenda Class 2 rules would assign a PLSMT of 25°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51).

SA 105, normalized, 34" (1.375" min. wall) x 6" (0.432" min. wall) sweepolet (see above 2" x 3000# weld boss analysis).

SA 105; 10" x 6" OD transition piece, 10" x 8.75" OD transition piece. CMTR identified the materials as having been normalized. Grinnell Traveler CT-SM-7D calls out 10" x 1 1/2" nom. wall manifold outlets. NUREG-0577, Table 4.4 assigns a ($\overline{NDT}$ + 1.3σ) NDT of -5°F to this material. Summer 1977 Addenda Class 2 rules assign a PLSMT of 25°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

3) Main Feedwater Process Pipe - SA 106 Gr. B, 18" x S80 (0.937"), assumed to be normalized. NUREG-0577 Fig. B7 and Table 4.4 would assign the material a ($\overline{NDT}$ + 1.3σ) NDT in that population below 40°F. Based on an assigned NDT of 40°F, Summer 1977 Addenda Class 2 rules would assign a PLSMT of 70°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore

meets the requirements of GDC 51.

4) Main Feedwater Process Pipe Fittings - SA 234 WPB (SA 106 Gr. B) 18" x S80 (0.937") ell. Based on the analysis for the feedwater piping, a PLSMT of 70°F is assigned to this material. The design LSMT is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

SA105 weld boss; normalized; 3/4" and 2". Based on the analysis for the main steam bosses above, a PLSMT of 25°F is assigned to this material. The design LSMT is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

C. Isolation Valves

1) Main Steam Isolation Valve Body - SA 216 Grade WCB; normalized; 2 3/16" min. design thickness. NUREG-0577, Table 4.4 assigns a $(\overline{NDT} + 1.3\sigma)$ NDT of 57°F to 2 1/2" to 5" thick materials. Summer 1977 Addenda Class 2 rules would assign a PLSMT of 87°F. The design LSMT of this material is 115°F (which will be experienced during hydrotest) and therefore meets the requirements of GDC 51.

2) Main Steam Isolation Valve Cover - SA 105; quenched and tempered; 5.56" min. design thickness. NUREG-0577, Table 4.4 would assign a $(\overline{NDT} + 1.3\sigma)$ NDT at or below -28°F given that the material was quenched and tempered. Summer 1977 Addenda Class 2 rules would assign a PLSMT of 30°F to the material. The design LSMT is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

3) Main Steam Isolation Valve Poppet - SA 105; quenched and tempered; 6 7/8" min. design thickness. Given the analysis for the valve cover above, Summer 1977 Addenda Class 2 rules would assign a PLSMT of 39°F to the material. The design LSMT is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

4) Main Steam Isolation Valve Pilot Poppet - SA 182 F6 (410 SS); 2" min. design thickness, oil quenched and tempered. From forging prolongation, the estimated $(\overline{NDT} + 1.3\sigma)$ NDT is assumed as 60°F. Summer 1977 Class 2 rules would assign a PLSMT of 90°F. The design LSMT of this material is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

5) Main Feedwater Isolation Valve Body - SA 105; normalized; 1.8" min. design thickness. NUREG-0577, Table 4.4 assigns a $(\overline{NDT} + 1.3\sigma)$ NDT of -5°F. Summer 1977 Addenda Class 2 rules assign a PLSMT of 25°F. The design LSMT of this material is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

6) Main Feedwater Isolation Valve Bonnet - SA 105; normalized; 3 1/4" min. design thickness. NUREG-0577, Table 4.4 assigns a $(\overline{NDT} + 1.3\sigma)$ NDT of 5°F. Summer 1977 Addenda Class 2 rules assign a PLSMT of 38°F. The design LSMT of this material is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

7) Main Feedwater Isolation Valve Neck - SA 105; normalized; 1.8" min. design thickness. Assuming a $(\overline{NDT} + 1.3\sigma)$ NDT of -5°F, the Summer 1977 Addenda Class rules assign a PLSMT of 25°F. The design LSMT of this material is 115°F (during hydrotest) and therefore

meets the requirements of GDC 51.

8) Main Feedwater Isolation Valve Retainer - SA 105; normalized; quenched and tempered; 2.9" min. design thickness. Assuming a ($\overline{NDT}$ + 1.3σ) NDT of -5°F, the Summer 1977 Addenda Class 2 rules assign a PLSMT of 35°F. The design LSMT of this material is 115°F (during hydrotest) and therefore meets the requirements of GDC 51.

11. MATERIAL FORMS

In order to provide an additional basis for support, attached are the appropriate code data report forms for the penetration assemblies, the main steam system shop fabricated piping, and the main steam and feedwater isolation valves.

Attachment 1

CN-SA-83-438

June 23, 1983

C. C. Rolfe

Attention: T. A. Ford

Re: Catawba Unit 1
Main Steam and Feedwater Penetrations
GDC-51
File: CN-1206.02-58

This letter is in response to questions raised by the NRC concerning the design thickness of the Main Steam and Feedwater Systems Flued Heads.

These flued heads are a part of floating penetration assemblies. The penetrations are not anchored to the Reactor Building shell wall but "float" on bellows assemblies on both sides of the wall. Because of this arrangement, the only significant loads on the flued head will be due to pressure in the event of a pipebreak.

The longitudinal thickness of the Main Steam Flued Head is 5½" The longitudinal thickness of the Feedwater Flued Head is 4". The required thickness of the Main Steam Flued Head and the Feedwater Flued Head is less than 2' thick.

Please call J. D. Duncan at 6246 if you have questions.

D. L. Caldwell
Supervising Design Engineer

JDD/eam

cc: R. W. Bonsall
S. S. Lefler
W. R. Selden

Catawba Nuclear Station
Containment Structures
Compliance with GDC 51

1. LOWEST SERVICE METAL TEMPERATURE (LSMT)

The lowest service metal temperature is identified as the limiting temperature which will be experienced by the limiting materials of the containment pressure boundary during the performance of the containment function under operating, maintenance, testing and postulated accident conditions. Calculations based upon conservative assessment of the ambient atmospheric conditions, the insulation and enclosure provided, and the specified minimum containment atmosphere temperature show the LSMT to be $49^{o}F$ for the steel containment vessel, personnel locks, penetration sleeves and penetration insert plates. The exterior face of the equipment hatch is exposed to ambient outdoor air conditions, and therefore it will experience a lower LSMT than the remainder of the steel containment. The LSMT for the equipment hatch is calculated to be $35^{o}F$.

2. CONTAINMENT PRESSURE BOUNDARY MATERIALS (FERRITIC)

Containment pressure boundary materials have been reviewed within the context of General Design Criterion 51. The materials of the following components were characterized with respect to fracture toughness:

A. STEEL CONTAINMENT VESSEL, PERSONNEL LOCKS, EQUIPMENT HATCH, AND PENETRATION SLEEVES

1) General

As stated in Section 3.8.2 of the Catawba FSAR, the steel containment is designed, fabricated and erected in accordance with Subsection NE of the ASME Code, 1971 Edition, including addenda through Summer 1972. This Code edition provides for material fracture toughness by requiring drop-weight tests or Charpy V-notch tests at 30°F or more below the lowest service metal temperature. This temperature was identified in the procurement specifications as 10°F for the steel containment vessel, equipment hatch and penetration sleeves, and as 48°F for the personnel lock. These temperatures are below the calculated LSMT for each component. Consistent and acceptable Charpy V-notch test results have been obtained at test temperatures at least 30°F below the specified lowest service metal temperature, insuring that the material is acceptable for its intended service.

To further demonstrate the suitability of these materials, the discussion below establishes that the service conditions for the material are well removed from the nil-ductility region. Generic nil-ductility transition temperatures for each type of material are used when data is available.

2. CONTAINMENT PRESSURE BOUNDARY MATERIALS (FERRITIC) (cont'd)

A. STEEL CONTAINMENT VESSEL, PERSONNEL LOCKS, EQUIPMENT HATCH, AND PENETRATION SLEEVES, (cont'd.)

2) Steel Containment Vessel

SA-516 Gr 60, normalized, 1", 3/4", and 11/16" thick are identified as having been applied. Typical certified mill test reports for 1" plate show Charpy V-notch test data which does not support the use of the Charpy test temperature as the LSMT within the context of the ASME Summer 1977 Addenda Class 2 rules. However, these ASME rules, NUREG/CR-3009, and CBI in-house data will support assigning a nil-ductility transition temperature of $0^{o}F$ and a permissible lowest service metal temperature (PLSMT) of $30^{o}F$ for these materials.

3) Penetration Insert Plates

Thickened insert plates are installed in the containment vessel at some penetrations. SA-516 Gr. 60, normalized, 3/4", 1 1/4", and 1 3/8" thick are identified as having been applied. Certified mill test reports for typical 1 3/8" plate were submitted for review. As was the case for the steel containment vessel itself, ASME Summer 1977 Addenda Class 2 rules, NUREG/CR-3009, and CBI in-house data will support assigning a nil-ductility transition temperature of $0^{o}F$ and a PLSMT of $30^{o}F$ for these materials.

4) Penetration Sleeves

SA-333 Gr 6, 24" Schedule 100, 1.531" thick, normalized, is identified as a limiting material. Certified mill test report indicates that the material was Charpy V-notch tested at $-30^{o}F$ to criteria consistent with the ASME Summer 1977 Addenda Class 2 rules and is acceptable for service at $49^{o}F$.

Formed, welded, and stress relieved sleeves applying normalized SA-516 Gr 60 in 3/4", 1 1/4", and 1 3/8" thicknesses are identified as limiting materials. Subsection NE rules required qualification of the forming process, including tests to determine that required impact properties are met after straining. Procedure qualification was required to be conducted using material of the same specification, grade or class, and heat treatment. Certified mill test report data for 1 3/8" thick normalized material indicate that the material, before and after fabrication, met Subsection NE Charpy V-notch requirements. While the Charpy results at $-30^{o}F$ do not meet ASME Summer 1977 Addenda Class 2 rules to support the test temperature as the LSMT, they do support a PLSMT of $49^{o}F$ or lower. Based on NUREG/CR-3009 and ASME Summer 1977 Addenda Class 2 Rules, a PLSMT of $30^{o}F$ would be developed. A similar analysis is applied to 3/4" and 1 1/4" thick materials.

2. CONTAINMENT PRESSURE BOUNDARY MATERIALS (FERRITIC) (cont'd.)

A. STEEL CONTAINMENT VESSEL, PERSONNEL LOCKS, EQUIPMENT HATCH, AND PENETRATION SLEEVES (cont'd.)

5) Personnel Air Lock

SA-516 Gr 70, normalized, 2 1/2" thick is identified as a limiting material. Charpy V-notch mils lateral expansion data at -30°F do not meet ASME Summer 1977 Addenda Class 2 rules to support the test temperature as the LSMT. However, these rules would assign a nil-ductility transition temperature of 0°F and a PLSMT of 30°F to the material.

SA-333 Gr 6, 6" Schedule 80, 0.432" thick, and 3" Schedule 40, 0.216" thick, identified as containment pressure boundary materials, would be exempted from Charpy V-notch testing by the ASME Summer 1977 Addenda Class 2 rules. Certified mill test reports, however, indicate that the materials were Charpy tested at -50°F, to Charpy V-notch mils lateral expansion supporting a service temperature of 49°F.

SA-350 Gr LF2 fitting, Scrd. coupling 1"-3000#, is identified as a containment pressure boundary material. Based upon dimensioning of commercial forged steel fittings, ASME Summer 1977 Addenda Class 2 rules would exempt the material from testing. However, certified mill test reports indicate that the material was Charpy V-notch tested to energy criteria consistent with the ASME Summer 1977 Addenda Class 2 rules supporting a service temperature of 49°F for the material.

6) Equipment Hatch

SA-516 Gr 70, normalized, 3" thick, used in the hatch barrel, is identified as a limiting material. NUREG/CR-3009 Table 4.4 assigns a 90% confidence nil-ductility transition temperature of -5°F to the material. CBI in-house data shows typical nil-ductility transition temperatures for such material of -10°F and below. ASME Summer 1977 Addenda Class 2 rules can therefore assign a PLSMT of 35°F to the material.

SA-516 Gr 70, normalized, 1 1/8" thick is applied for the dished hatch cover. Consistent with the analysis for the barrel above, ASME Summer 1977 Addenda Class 2 rules would assign a PLSMT of 25°F to the material.

3. QUALITY ASSURANCE DOCUMENTATION FOR LIMITING MATERIALS

A. CMTR NNI File #46 (1" plate SA-516 Gr 60) (Steel Containment Vessel)

B. CMTR NNI File #50 (1 3/8" plate SA-516 Gr 60) (penetration insert plates and fabricated penetration sleeves)

C. CMTR NNI File #187 (24" diameter Sch 100 SA-333 Gr 6) (penetration sleeves)

D. CMTR Lakeside Bridge and Steel, Heat #T68952 (3" plate SA-516 Gr 70) (Equipment hatch barrel)

E. CMTR Lamco Industries Heat #67302 (2 1/2" plate SA-516 Gr 70) (Personnel air lock)

F. CMTR US Steel Heat #A01359 (6" diameter Sch 80 SA-333 Gr 6) (Personnel air lock)

G. CMTR US Steel Heat #N14522 (3" diameter Sch 40 SA-333 Gr 6) (Personnel air lock)

H. CMTR Metalloy Heat #8865304 (1" blind flange, SA-350 Gr LF2)

I. NNI Quality Assurance package for containment plate assembly 1-3-13 (Shows forming process for thickest fabricated sleeves and stress relief of entire assembly following penetration installation.)

J. NNI Quality Assurance package for containment insert plate assembly 113-1 (Shows thickest penetration insert plate, sleeve fabrication and stress relief of assembly after sleeve installation.)

(3A)

WF 2181

PHOENIX STEEL CORPORATION
CLAYMONT, DELAWARE

SPECIFICATION ASME SA 516 GR 60 PVQ NORM. LONG'L V NOTCH IMPACT @-30 DEG F. TO NE-2350 (SEC III 1973 & ADDENDA)
CLAYMONT, DEL. May 19, 1975
CHEMICAL AND PHYSICAL TESTS OF Silicon Quality Steel
CUSTOMER'S ORDER NO. 5024-A-7
CHARGED TO Newport News Industrial Corp. Sub. of Newport News Shipbuilding
MILL ORDER NO. 23624-05
SHIPPED TO Newport News, Va. 23606
CAR NO. PC 523042

Bend Test	Homogeneity Test
OK	

Melt No.	Slab No.	Serial No.	Carb	Mang	Phos	Sulph	Si	Cu	Ni	Cr	Mo	Thickness	Sec. Area	Yield Point Lbs. Per Sq. In.	Tensile Strength Lbs. Per Sq. In.	% Elong. in 8"	Size
								Vee-Notch Charpy Impact Tested @-30 DEG F.									
86303-26	49732	75 NWS 232	.10	.96	.017	.018	.15	L- 63-56-72				.992		46300	65300	33.5	1-4 40.82x111"x336 ITEM #19
	49733	75 NWS 232						L-32-50-63				.974		49200	66900	29.7	1-5 "
	49731	75 NWS 232						L-5[illegible]-96-108				.973		40200	67000	34.0	1-6 "
86594-26	49734	75 NWS 233	.10	1.20	.014	.030	.29	L-43-52-44				.998		51700	71100	30.2	1-7 "
96915-26	49735	75 NWS 234	.09	1.13	.011	.018	.16	L-130-124-128				.985		46600	64700	32.5	1-8 "
86767-67	43345	75 NWS 235	.09	1.14	.003	.024	.23	L-93-100-108				.976		47100	70500	26.5	1-19 "
	43346	75 NWS 235						L-103-112-98				.992		49600	69700	31.7	1-20 " 1.0
	43347	75 NWS 235						L-102-100-96				.982		50400	69300	33.2	1-21 "
	43348	75 NWS 235						L-21-22-22				.985		51300	76300	23.5	1-22 "
	43349	75 NWS 235						L-27-20-28				.987		50400	69300	33.2	1-23 "
96375-67	43350	75 NWS 236	.11	1.13	.013	.030	.23	L-70-74-62				.959		45400	66600	30.0	1-24 "

PLATES AND TEST PCS NORMALIZED AT 1600-1550 DEG F., HELD FOR 1/2 HOUR PER INCH OF THICKNESS AND AIR COOLED.

OK TO SPEC. [signature] 5-22-75
QC ACCEPTED 1 of 2

SUBSCRIBED AND SWORN TO BEFORE ME
this 21st day of May
[signature: Frances A. Maloney]
Notary Public

N. N. I. C. RECORD CENTER FILE COPY 46

I certify the above figures are correct as contained in the records of the Corporation.
[signature]
Mgr. Dept.

W442 1-R1

PHOENIX STEEL CORPORATION
CLAYMONT, DELAWARE

SPECIFICATION ASME SA 516 GR 60 PVQ NORM. LONG'L V NOTCH IMPACT @-30 DEG F TO NE-2350 (SEC III 1973 & ADDENDA)
CLAYMONT, DEL. May 19, 1975
CHEMICAL AND PHYSICAL TESTS OF Silicon Quality Steel
CUSTOMER'S ORDER NO. 5024-A-7
CHARGED TO Newport News Industrial Corp. Sub. of Newport News Shipbuilding
MILL ORDER NO. 23624-05
SHIPPED TO Newport News, Va. 23606
CAR NO. PC 523042

Bend Test	Homogeneity Test
OK	

Melt No.	Slab No.	Serial No.	Carb	Mang	Phos	Sulph	Si	Cu	Ni	Cr	Mo	Thickness	Sec. Area	Yield Point Lbs. Per Sq. In.	Tensile Strength Lbs. Per Sq. In.	% Elong. in 8"	Size
86303-26	49732	L. Exp.	.0[illegible]-.073-.069														
		% Shear	20%-40%-30%														
	49733	L. Exp.	.067-.045-.090														
		% Shear	[illegible]-30%-50%														
	49731	L. Exp.	.[illegible]-.07[illegible]-.077														
		% Shear	50%-[illegible]-5[illegible]%														
86594-26	49734	L. Exp.	.03[illegible]-.040-.037														
		% Shear	2[illegible]-[illegible]-20%														
96915-26	49735	L. Exp.	.[illegible]-.[illegible]-.070														
		% Shear	100%-70%-60%														
96375-67	43350	L. Exp.	.056-.059-.068														
		% Shear	50%-[illegible]-40%														
86767-67	43345	L. Exp.	.074-.[illegible]7-.082														
		% Shear	50%-[illegible]-60%														
	43346	L. Exp.	.0[illegible]-.0[illegible]-.076														
		% Shear	60%-[illegible]-50%														
	43347	L. Exp.	.0[illegible]-.[illegible]-.079														
		% Shear	50%-50%-50%														
	43348	L. Exp.	.01[illegible]-.02[illegible]-.024														
		% Shear	10%-10%-10%														
	43349	L. Exp.	.023-.019-.021														
		% Shear	10%-10%-10%														

N. N. I. C. RECORD CENTER FILE COPY 46

OK TO SPEC. [signature] 5-22-75
QC ACCEPTED 2 of 2

SUBSCRIBED AND SWORN TO BEFORE ME
this 21st day of May
[signature: Frances A. Maloney]
Notary Public

I certify the above figures are correct as contained in the records of the Corporation.
[signature]
Mgr. Dept.

(3B)

W-667 1-R1

PHOENIX STEEL CORPORATION

CLAYMONT, DELAWARE

SPECIFICATION: ASME SA 516 GR 60 Normalized, Long V-Notch Impacts at Minus 30 Deg F to NE-2350 (Sec III 1973 & Addenda) to Meet 15 Ft. Lb.

CLAYMONT, DEL.: May 20, 1975

CHEMICAL AND PHYSICAL TESTS OF: Average Silicon Quality Steel

CUSTOMER'S ORDER NO.: 5024-A-7

CHARGED TO: Newport News Industrial Corp. Subsidiary of Newport News Shipbuilding

MILL ORDER NO.: 20624-05

SHIPPED TO: Newport News, Va. 23606

CAR NO.: MILW 60163

Bend Test: OK

Homogeneity Test:

MELT No.	SLAB No.	SERIAL No.	Carb	Mang	Phos	Sulph	Si	Vee-Notch Charpy Impact Tested @-30 DEG F.	Mo	Thickness	Sec. Area	Yield Point Lbs Per Sq. In.	Tensile Strength Lbs Per Sq. In.	% Elong. in 8"	SIZE
86806-26	65789	75 NNIC 253	.10	1.20	.016	.018	.22	L-20-23-22		.736		45700	70200	29.5	1 -530.6#x114"x336" Item #14
	65790	75 NNIC 253						L-34-56-76		.722		52000	71100	23.5	1 -16 "
	65791	75 NNIC 253						L-131-130-130		.733		52000	71900	29.2	1 -17 "
	65793	75 NNIC 253						L-130-124-130		.737		51600	70300	30.5	1 -8 "
	65794	75 NNIC 253						L-106-90-110		.726		49800	71600	30.7	1 -19 "
	65795	75 NNIC 253						L-112-112-98		.700		49900	71000	31.2	1 -20 "
86799-26	49085	75 NNIC 254	.10	1.01	.020	.030	.19	L-110-90-114		.724		46200	69500	31.5	2 -22 "
86813-26	49483	75 NNIC 254	.11	.95	.009	.021	.23	L-76-72-76		.735		51300	71000	31.0	1 -23 "
86813-26	49486	75 NNIC 255	.11	.95	.009	.028	.23	L-30-40-36		.718		49600	70500	27.5	1 -24 "
86796-26	65677	75 NNIC 255	.10	1.10	.016	.023	.20	L-60-66-56		.729		43500	69500	26.0	1 -2 30.6#x114"x338" Item #15
96875-26	65422	75 NNIC 256	.13	1.13	.013	.030	.23	L-106-100-100		1.367		47700	68000	33.2	1 -156.1#x112"x222" Item #30
	65423	75 NNIC 256						L-33-63-56		1.375		49500	69900	29.7	1 -2 "

PLATES AND TEST PCS NORMALIZED AT 1600-1650 DEG F., HELD FOR ONE HOUR PER INCH OF THICKNESS AND AIR COOLED.

OK TO SPEC. [signature] 5-30-75
QC ACCEPTED 1 of 4 (1 of 4 - 75 NNIC 256 only)

242 C

SUBSCRIBED AND SWORN TO BEFORE ME

This 27th day of May

Frances A. Maloney
Notary Public

N. N. I. C. RECORD CENTER FILE COPY 50

I certify the above figures are correct as contained in the records of the Corporation.

[signature]
Mgr. of Testing & Inspection Dept.

W-662 1-R1

PHOENIX STEEL CORPORATION

CLAYMONT, DELAWARE

SPECIFICATION: ASME SA 516 GR 60 NORMALIZED LONG'L V NOTCH IMPACT @-30 DEG F. TO NE-2350 (SEC III 1973 & ADDENDA)

CLAYMONT, DEL.: May 20, 1975

CHEMICAL AND PHYSICAL TESTS OF: Silicon Quality Steel

CUSTOMER'S ORDER NO.: 5024-A-7

CHARGED TO: Newport News Industrial Corp. Subsidiary of Newport News Shipbuilding

MILL ORDER NO.: 23624-05

SHIPPED TO: Newport News, Va. 23606

CAR NO.: MILW 60168

Bend Test: OK

Homogeneity Test:

MELT No.	SLAB No.	Test	Values
86806-26	65789	L. Exp.	.016-.013-.020
		% Shear	10%-10%-10%
	65790	L. Exp.	.051-.074-.068
		% Shear	30%-40%-40%
	65791	L. Exp.	.090-.097-.085
		% Shear	70%-70%-60%
	65793	L. Exp.	.105-.095-.095
		% Shear	100%-60%-100%
	65794	L. Exp.	.099-.071-.070
		% Shear	30%-40%-40%
	65796	L. Exp.	.077-.013-.076
		% Shear	70%-60%-60%
86799-26	49085	L. Exp.	.034-.072-.085
		% Shear	50%-40%-50%
86813-26	49483	L. Exp.	.037-.057-.059
		% Shear	50%-50%-50%
	49486	L. Exp.	.021-.03-.023
		% Shear	10%-20%-10%
86796-26	65677	L. Exp.	.057-.096-.051
		% Shear	30%-30%-30%
96875-26	65422	L. Exp.	.077-.080-.079
		% Shear	50%-50%-50%
	65423	L. Exp.	.071-.076-.079
		% Shear	40%-40%-50%

OK TO SPEC. [signature] 5-30-75
QC ACCEPTED 2 of 4 (2 of 4 - 75 NNIC 256 only)

N. N. I. C. RECORD CENTER FILE COPY 50

SUBSCRIBED AND SWORN TO BEFORE ME

This 27th day of May

Frances A. Maloney
Notary Public

I certify the above figures are correct as contained in the records of the Corporation.

[signature]
Mgr. of Testing & Inspection Dept.

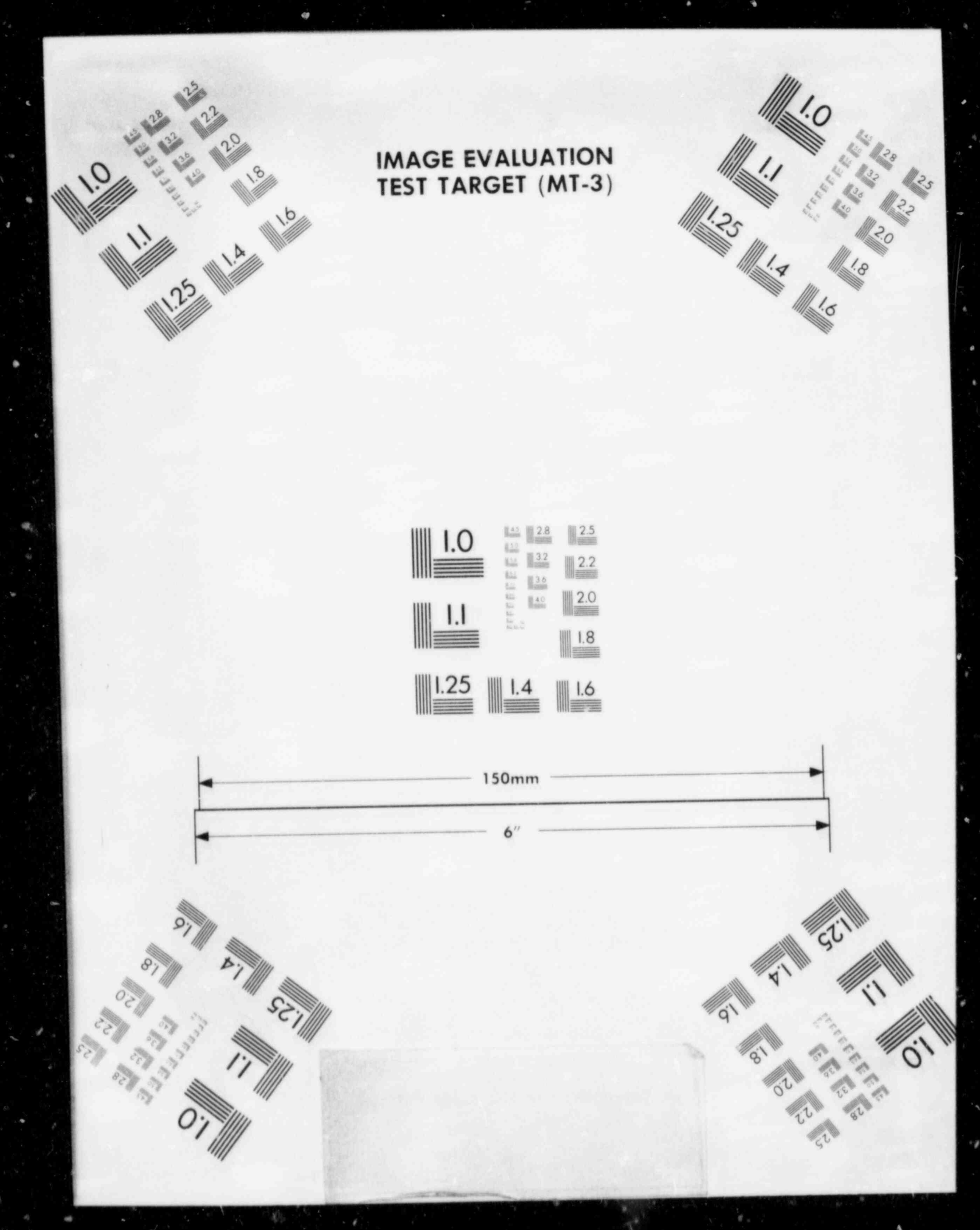
IMAGE EVALUATION
TEST TARGET (MT-3)
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
150mm
6"

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

MATERIAL INVESTIGATION REQUEST

Date Rec'd by LAB: SEP 22 1975 | Date Reported: SEP 23 1975 | File Code: M3220/58020/— | Lab No.: 5849-C

Material/Condition: CARBON STEEL/AS-FORMED | Heat No.: N/A | Batch | QA Control No.: 75 NNI 256 | Witness: N/A

Name of Article	No. Pcs	Group/Sheet/Line	Item	Drawing/Pattern No.	J.O.	Control Level	Specification
PENETRATION TEST PLATE	1	SG-451-7/1/13	17	288108	5024-A	ASME N.C.	SA-516 Gr.70
PLEASE IMPACT TEST PER SH-370 AS SPECIFIED IN INSTRUCTION 451-NC-TC01.							

TEST RESULTS

Distribution: T.C. BOND, NNI ENGINEERING/DESIGN
Form 1-465: JIM STAFFIERA, NNI QA

MISCELLANEOUS TEST — CHARPY — NN 2251-R IMPACT TEST — NNS & DD CO. | DATE REC'D. | DATE REPORTED: SEP 23 1975 | LAB NO.: 5849-2

Sample No.	Temp °F	Ft/Lbs	Sample No.	°F	Ft/Lbs	Sample No.	°F	Ft/Lbs	Sample No.	°F	Ft/Lbs
17.1	-30°	46									
17.2		42			QC NO 75 NNI-256						
17.3		26									

PERFORMED BY: Byrum 9.23.75 | CHECKED BY: W. W. Acree

N. N. I. C.
RECORD CENTER
FILE COPY 50

OK TO SPEC
Jim Staffiera
75 NNI 256 (ONLY)
4 OF 4
* QUALIFICATION OF PLATE FORMING PER NE-4210 (HEAT NO. 96875-26)

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

MATERIAL INVESTIGATION REQUEST

Date Rec'd by LAB: SEP 22 1975 | Date Reported: SEP 23 1975 | File Code: M3220/58020/— | Lab No.: 5849-C

Material/Condition: CARBON STEEL/AS-FORMED | Heat No.: N/A | Batch | QA Control No.: 75 NNI 256 | Witness: N/A

Name of Article	No. Pcs	Group/Sheet/Line	Item	Drawing/Pattern No.	J.O.	Control Level	Specification
PENETRATION TEST PLATE	1	SG-451-7/1/12	16	288108	5024-A	ASME N.C.	SA-516 Gr.70
PLEASE IMPACT TEST PER SA-370 AS SPECIFIED IN INSTRUCTION 451-NC-TC01.							

TEST RESULTS

Distribution: T.C. BOND, NNI ENGINEERING/DESIGN
Form 1-465: JIM STAFFIERA, NNI QA

MISCELLANEOUS TEST — CHARPY — NN 2251-R IMPACT TEST — NNS & DD CO. | DATE REC'D. | DATE REPORTED: SEP 23 1975 | LAB NO.: 5849-2

Sample No.	Temp °F	Ft/Lbs	Sample No.	°F	Ft/Lbs	Sample No.	°F	Ft/Lbs	Sample No.	°F	Ft/Lbs
16.1	-30°	17									
16.2		36			QC NO 75 NNI-256						
16.3		31									

PERFORMED BY: Byrum 9.23.75 | CHECKED BY: W. W. Acree

N. N. I. C.
RECORD CENTER
FILE COPY 50

OK TO SPEC
Jim Staffiera
75 NNI 256 (ONLY)
3 OF 4

DATE: DEC.02,1975 CERTIFICATE No. YYD1542

SUPPLIER: 009 235 3751 C. ITOH AND CO., LTD.

CUSTOMER: NEWPORT NEWS INDUSTRIAL CORP.

ARTICLE: SEAMLESS CARBON STEEL PIPE (HOT FINISHED)

MILL CERTIFICATE

MAKER CODE 10 SUMITOMO METAL INDUSTRIES, LTD.
STEEL TUBE WORKS

STANDARD: ASME SA333 GR.6 and ASME Sect. III, NB-2000

SPECIFICATION: Our Proposal A-No.637

NOTES

Mill Work No.	Lot or T.P. No.	O.D.	I.D.	W.T.	Length	No. of pcs.	Total Length	Weight kg	Order or Job No.
YYD1542		24"		SCH100 (1.531")	14' - 18'	2	32'10"	5474	5024-A-14 ITEM No.2

Heat No.	Lot or T.P. No.		C	Si	Mn	P	S	Cu	Ni	Cr	Mo		Yield Point	Tensile Strength	Elong.	Impact Test at -30°F
	min / max		– / 30	10 / –	29 / 106 (135)	– / 048	– / 058						24.5 / –	42 / –	12 / –	15.0 / 20.0
A28575		L	12	32	112	011	008									
	1-T	C	12	35	114	012	008					T R	30.4	47.9	40	53 152.6, 136.6, 175.0
	1-B	C	13	34	113	012	010						27.8	46.2	40	143.3, 159.8, 120.7
	2-T	C	12	33	113	011	008						32.1	48.2	38	152.6, 195.2, 158.3
	2-B	C	12	34	114	012	010						28.4	46.7	39	156.2, 191.0, 147.5

(T:Top, B:Bottom)

N.N.I.C. RECORD CENTER FILE COPY

OK TO SPEC
1-21-76

QC ACCEPTED 76NN1021

Description of Tests

Hydrostatic Test	Surface & Dimension	Flattening	Bending	Flange	Ring Expansion	Ring Tensile
(5 sec. min.) 2800 kg/cm² GOOD	GOOD	GOOD				

HEATTREATMENT : 900°C ± 20°C NORMALIZING

Surveyor To

3C

01.000.0772 (REV. 7-78)

Test Report

CONTRACT NO.	P. O. DATE	PURCHASE ORDER NO.
		2C9210--11 11/27/78

SHIPPERS NO.	MILL ORDER NO.	INVOICE NO.
H00547 3 27 79	NB60360	154-15846

VEHICLE IDENTITY EJE 35142

GARY WORKS
GARY, INDIANA 46402

LAKESIDE BRIDGE & STEEL CO
5300 NO 33RD ST
MILWAUKEE WISC 53209

SHIP TO
LAKESIDE BRIDGE & STEEL CO
5300 NO 33RD ST
MILWAUKEE WISCONSIN

(C9210)
LAKESIDE BRIDGE & STEEL CO.
Q.A. Approved
By
Date 4/16/79
Per MS/Rev 809.10

BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT THE CHEMICAL ANALYSES AND/OR TEST RESULTS SHOWN IN THIS REPORT ARE CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY.

BY: A. BELKIN
MGR QUALITY ASSURANCE

DATE

PLATES CARBON ASME SA516-76/1977/SUMMER 1977
ADDENDA GRADE 70 PRESSURE VESSEL QUALITY NORMALIZE
PLATE AND SUB-SECTION NE OF SECTION III OF ASME
1977 EDITION WITH SUMMER 1977 ADDENDA SUB- **SEE BELOW
:MILL THE APPLICABLE PROVISIONS OF 10CFR PART 21 APPLY

STATE OF INDIANA
COUNTY OF LAKE
SUBSCRIBED AND SWORN TO BEFORE ME
THIS 4 DAY OF APRIL 1979

NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 14,1982

MATERIAL DESCRIPTION: THICKNESS OR SECTION	WIDTH, DIA. OR FT. WT.	LENGTH	QUANTITY	WEIGHT	HEAT NO.	TEST OR PIECE IDENTITY	YIELD PT. PSI	TENSILE STR PSI	ELONGATION % IN 8"	ELONGATION % IN 2"	% RED. OF AREA	BEN
3.0000"	60.000 "	180 10-28	1	9189	T68952	01 W2 +	54000	82500		29.0		
						+ *	46400	83000		29.0		

FULL SIZE CHARPY IMPACTS FT LBS - 57-54-53
FULL SIZE CHARPY IMPACTS FT LBS - 31-31-39

PLATES AND TEST SPECIMENS NORMALIZED 1660 F FCE TEMP AND HELD 96 MIN FCE TIME
LONGITUDINAL V-NOTCH CHARPY IMPACTS AT MINUS 30 F TO 20 FT LBS MIN

							**48900	780000		29.0		
							**48000	77000		28.0		

+NORMALIZED
*NORMALIZED AND STRESS RELIEVED

**PARAGRAPHS NE-2100 NE-2200 NE-2300 NE-2400 NE-2500 NE-2600 NE-2700 THOSE PARAGRAPHS APPLICABLE TO PLATE PRODUCT FURNISH NORMALIZED TEST SPECIMENS PLUS NORMALIZED AND STRESS RELIEVED TEST SPECIMENS FOR 8 HOURS FURNISH ONE TENSILE TEST IN NORMALIZED CONDITION ONLY IMPACTS IN BOTH CONDITIONS QUALITY ASSURANCE CERT REQ TO MEET CHARPY V-NOTCH LONGITUDINAL IMPACT TESTS EA PLATE AS HEAT TREATED AT 20 FT/LBS AT MINUS 30 DEG F HEATING AND COOLING RATES PER NE-4623 SPECIAL SPEC REQ B THE APPLICABLE PROVISIONS OF 10 CFR PART 21 APPLY
SYSEUL 3 .0050 EXT.

T NO.	TYPE	C	MN	P	S	SI	CU	NI	CR	MO	SN	AL	N	V	B	TI	CB	CO
8952	HEAT	23	1D8	019	015	23												

AVG GR. SIZ__ .07

TEST SPECIMENS STRESS RELIEVED AT 1150 PLUS OR MINUS 25F WITH CONTROLLED HEATING AND COOLING. FCE DID NOT EXCEED 800F AT CHARGE RATE OF HEATING ABOVE 800 DID NOT EXCEED 133F PER HOUR. HELD AT TEMP 8 HR. COOLED TO 800F. RATE OF COOLING TO 800 DID NOT EXCEED 133F PER HOUR

QUALITY ASSURANCE CERT NO. N1618 EXPIRES JANUARY 21, 1980

APR 11 1979

1-002 0887 74-002672 KLY SAA 5400 PAGE 1 OF

CERTIFICATE OF TESTS

Armco Steel Corporation
P.O. Box 96120, Houston, Texas 77015

OUR ORDER NO.	CUST. ORDER NO.	SHIPPED VIA	CA'S INITIAL AND NO.	DATE SHIPPED	SHIPPING LIST (RECAP) NO.	DATE MTR.	BY
TNS 6222	015383-6817	RAIL	TP 821989	8-31-76	7001293	9-29-76	sg

DESCRIPTION	BAR OR PLATE No.	No. PCS.	YIELD PSI	TENSILE PSI	% ELONG.	% REDUCT.	BEND TEST	HOMO TEST	BHN	IMPACT: TYPE A NOTCH V SIZE FULL ORIEN.	TEMP.	1	2	3	AVG.
STEEL PLT CARBON ASME SA516 GR 70 FOR PV NORM +S3 SHWHT @ 1100°F FOR 2-1/2 HRS HT UP & COOL DOWN 160°F/HR MAX +S5 CVNL EA PLT 20/15 FT LBS @ -30°F NUCLEAR MAT'L TO MEET ASME B&PV CODE 1971 EDITION WINTER '73 ADDENDA SEC III DIV 1 CL MC					2"										
HEAT: 67302 2-1/2 x 120 x 130"	P57908	2	47900	76400	30.0					L	-30°F	15	20	26	20
										% SHEAR		20	20	20	20
										L.E.		18	20	29	22
〃	P58031	2	49900	77400	29.0					L	-30°F	27	31	32	30
										% SHEAR		20	20	20	20
										L.E.		25	30	30	28

BOTH PLTS & TEST CPNS WERE NORMALIZED @ 1650°F, TIME @ TEMP: 30 MINUTES & AIR COOLED.
TEST CPNS ONLY WERE STRESS RELIEVED @ 1100°F, TIME @ TEMP: 150 MINUTES & FURNACE COOLED.*

*MAXIMUM HEATING RATE ABOVE 600°F: 160°F/hr
MAX COOLING RATE DOWN TO 600°F: 160°F/hr

HEAT	C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Ti	V	B	Cb	Al	N		GRAIN
67302	.23	1.03	.010	.019	.24								P.O. 015383 V.O. 6817			33419-04 33415-01	8
67297	.22	1.01	.010	.026	.23								P/N	3229 2-18,23 3230 1-11		33407-16 33407-30	8
81964	.20	1.07	.010	.023	.25									3230 2-11 32305-02		33416-02 33417-08	8
														32306-02A -02B			

-1-

LAMCO INDUSTRIES INC
P O DRAWER 1486
EL CAJON, CALIFORNIA 92020

THE CHEMICAL, PHYSICAL OR MECHANICAL TESTS REPORTED HEREWITH ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

SIGNED J. P. Roberts
METALLURGICAL DEPT.

CHECKED TO 1974 WINT. 1974 ADD.

"THIS CERTIFIED TEST REPORT HAS BEEN DELIVERED TO A CONSIGNEE OF MATERIAL PURCHASED FROM ARMCO STEEL CORPORATION. TO AVOID THE POSSIBILITY OF ITS MISUSE, ON THE REDELIVERY OF THIS REPORT TO A THIRD PARTY IT MUST BE RECERTIFIED BY AND UNDER THE NAME OF SUCH CONSIGNEE." (WJW) AUG 1 1 1978

PH-1836-B REV. 10/72

United States Steel Corporation

LORAIN WORKS 3F

3" STD. Sch. 6

STANDARD CERTIFIED TEST REPORT

TUBULAR PRODUCTS

1-5-76 DATE

MATERIAL: Sml. Pressure Pipe

GRADE: 6 ✓ ASTM A333 / ASME SA333 ✓

TREATMENT: NORMALIZED 1650°F, AIR COOLED, FURNACE TIME 45.0 MIN.

CUSTOMER: NAME: CAPITAL PIPE & STEEL PRODUCTS INC - ATTN SELMA BERMAN

ADDRESS: P.O. BOX 471

CITY AND STATE: BALA CYNWYD PA. 19004

CUSTOMER'S ORDER NO.: 75459-00

U.S. STEEL ORDER NO.: KC. 11055

INVOICE NO.:

ITEM NO.	CODE OR LOT NO.	SIZE O. D.	WT/FT OR WALL THICKNESS		HEAT NUMBER	MIN. HYDRO. TEST PRESSURE P.S.I.	MECHANICAL PROPERTIES: YIELD STRENGTH P.S.I. / POINT	TENSILE STRENGTH P.S.I.	ELONG. IN 2" %	CHEMICAL ANALYSIS (%): C	Mn	P	S	Si	Mo	
1		3	.216	N14522		2500 ✓	55,000 ✓	79,900 ✓	37.0 ✓	.23 ✓	.91 ✓	.006 ✓	.024 ✓	.17 ✓		CK.
										.22	.94	.005	.024	.16		L.
	.188	WALL WIDTH SIZE		CHARPY V NOTCH IMPACT		FT/LBS	AT -63°F ✓									
							AVG.									
		FT/LBS		34.5	32.0	13.0	26.5 ✓									
		% SHEAR		80	80	30	63 ✓									
		LATERAL EXPANSION		.068	.065	.029	.054 ✓									

Lamco Industries
P.O.# J1396-6817
S.O.# LN0902-A
Ch# P-34729
Item# 1

WJW 02 AUG 14 1978

FLATTENING TEST OK ✓

P/N 32297-01

MET 4 REV. 369
USS CAT. NO. 8372 00
01.003.0241

We hereby certify that the above figures are correct as contained in the records of the company

11/5/76

ITEM 2 ITEM 3

HT. N14522

CHECKED TO SEC III NC AND C22 1971 ED. THRU WINT '73

11 C-7

USS United States Steel Corporation

National Works 36

STANDARD SWORN TEST REPORT

TUBULAR PRODUCTS

MATERIAL Seamless Pressure Pipe

TREATMENT Normalized 1600°F for 62 Min Air Cooled

MANUFACTURED FOR Capitol Pipe + Steel Products Inc.

Longitudinal tensile tests

5-12-75 DATE

GRADE 6 ASME SA333

6 ASTM A333 CUSTOMER'S ORDER NO.

67332-30 U.S. STEEL ORDER NO.

AH 02315

356-02415

CAST OR LOT NO.	SIZE O.D.	WALL THICKNESS	HEAT NO.	MECHANICAL PROPERTIES: MIN. U.T.S. P.S.I.	YIELD STRENGTH P.S.I.	TENSILE STRENGTH P.S.I.	ELONG. IN 2" %	CHEMICAL ANALYSIS (%): C	Mn	P	S	Si	Mo	
842	6.625	.432	A01359	2800	50600	71280	45.0	17	111	009	020	17		check
			A01359	2800	50790	69800	44.0	17	106	010	013	16		check
								17	108	009	017	16		ladl

Flattening tests satisfactory ✓

Full size longitudinal CVN's specimens at minus -50°F

	FT.LBS.	% SHEAR	LAT. EXP.	
A01359	95	66	.078	✓
	78	49	.064	✓
	82	53	.068	✓

Full size longitudinal CVN's specimens at minus -50°F stress relieved at 1100°F

	FT.LBS	% SHEAR	LAT. EXP.	
A01359	67	51	.059	✓
	52	43	.047	✓
	35	37	.035	✓

Lamco Ind.
P.O.# 11396-6817
S.O.# LN-0902-A
Ch# H-81226
Item# 2
WJW 02 AUG 14 1978

STATE OF PENNSYLVANIA
COUNTY OF ALLEGHENY } SS

J. Leo Sawa BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT THE FIGURES SET FORTH ABOVE ARE CORRECT, AS CONTAINED IN THE RECORDS OF THE COMPANY.

SUBSCRIBED AND SWORN TO BEFORE ME THIS 12th DAY OF May, 1975

Elaine NOTARY PUBLIC

MY COMMISSION EXPIRES

J. Leo Sawa
SIGNATURE OF OFFICER

A. Bellini
TITLE
Chief Metallurgist

HT. A01359 P/N 32301-06 B/H 32302-06

John 11/5/76 ANI

United States Steel Corporation, Pittsburgh, Pa. 15230

CHECKED TO SEC III, [illegible]

METALLOY INC.
PRECISION MANUFACTURERS FOR THE PETROCHEMICAL · POWER · NUCLEAR INDUSTRY
(713) 675-4341 7809 MARKET STREET ROAD HOUSTON, TEXAS 77029

3H

Customer McJunkin Corp. Date Shipped Customer Order No. 31-57776 Date 2-8-77 Our Order No. 30019

ITEM	DESCRIPTION	SPECIFICATIONS
5.	1/2" 3000# Scrd Cplg	ASME SA350 LF2
6.	1" Ditto	Ditto

ITEM	HEAT NO.	CARBON	MANG.	PHOS.	SUL.	SIL.	CHROME	NICKEL	MOLY	CU.	CO.	OTHER	OTH
5.	Requirements	.30 MAX	1.35 MAX	.035	.040	.15-.30 MAX							
	B3R332	.24	1.28	.019	.027	.20		Charpy	-50°F	40-20-30			
6.	Requirements	.30 MAX	1.35 MAX	.035	.040	.15-.30 MAX							
	8865304	.265	.88	.013	.024	.19		Charpy	-50°F	70-84-65			
	Requirements	MAX	MAX			MAX							
	Requirements	MAX	MAX			MAX							

ITEM		YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
5.	Requirements	36.000 MIN	70,000-95,000 MIN	22% MIN	30% MIN	MA
	Actual	60,100	88,800	31%	64.1%	
6.	Requirements	36,000 MIN	70,000-95,000 MIN	22% MIN	30% MIN	MA
	Actual	57,500	82,000	30%	67%	
	Requirements	MIN	MIN	MIN	MIN	MA
	Actual					
	Requirements	MIN	MIN	MIN	MIN	MA
	Actual					

ITEM — SPECIAL TESTING

We certify that the above material complies with ASME SA350. Heat treating in accordance with ASME SA350 LF2.

Above fittings are capable of withstanding a hydrostatic test pressure as prescribed by ASME Specs.

The above fittings complies with ASME Section III Class MC-1971 Edition with Addenda thru Winter 1974.

P/N 3/15/77 AN

P/O 15529/6817 ITEM 5 P/N 32295-24

ITEM 5 P/N 32290-19. ITEM 6 P/N 32292-26

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

SEC III CL MC
1971 ED. WIN 73 ADD

Sworn and subscribed to before me 2-8-77

Eleanor Graham

METALLOY INC.

ITEM 6 P/N 32295-23

P.O. 015529

WJW 07 AUG 14 1978 3/15/77.

Texas Printing Co. 692 - 5934 Form No. Z 96

Newport News Industr orporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

cpp. 220, 250

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
5024A	288133	F1	451-NC-210-251
JOB ORDER LOCATION	**INSPECTOR**		**DATE**
SUB SHOP	D.J. Long 9-11-76		7-21-76

JOINT NO.	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/ LEVEL	DATE
ASSY 1-3-13									
101	1904	1902	"		REV E 7/14/76	FINAL A-310c	mT	Boyd II	8-28-76
"	"	"	"		"	FINAL A-310c	mT	Boyd II	8-28-76
102	1904	1902	"		REV E 7/14/76	FINAL A-310c	mT	Boyd II	8-28-76
"	"	"	"		"	FINAL A-310c	mT	Boyd II	8-28-76
103	1904	1902	"		REV E 7/14/76	FINAL A-310c	mT	Boyd II	8-28-76
"	"	"	"		"	FINAL A-310c	mT	Boyd II	8-28-76
104	1904	1902	"		REV E 7/14/76	FINAL A-310c	mT	Boyd II	8-28-76
"	"	"	"		"	FINAL A-310c	mT	Boyd II	8-28-76
105	1904	1902	"		REV F 9-3-76	FINAL A-310c	mT	Fahrety II	9-3-76
"	"	"	"		"	FINAL A-310c	mT	Fahrety II	9-3-76

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR
R.G. Williams 9-11-76

INSPECTION SUPERVISOR
J.F. Bolden 9/13/76

DISTRIBUTION
QA
QC
RECORDS CENTER

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

SHIP-OUT INSPECTION REPORT

FINAL INSPECTION OF MATERIAL LISTED HAS BEEN COMPLETED AND IS RELEASED FOR SHIPMENT

☒ COMPANY FURN. MAT'L. ☐ CUSTOMER FURN. MAT'L. ☐ OTHER

P.O. 5024A | FILE NO. X12-52 | INSPECTION DATE 9-11-76 | DATE 9-14-76

DWG. NO.	DWG. ITEM	P.O. ITEM	QTY	DESCRIPTION	
288133 ASSY (19)				CYLINDER PLT. ASSY 1-3-13 CONSISTING OF THE FOLLOWING ITEMS:	
	1901		1	CYLINDER PLT.	75 NNI 121
	1902		1	WEB PLT.	75 NNI 010
	1903		1	STIFFENER FLG. PLT.	75 NNI 218
	1904		5	CHOCK STIFFENER W/WEB PLTS	75 NNI 056
	1905		4	PENETRATIONS	76 NNI 020
	1906		2	PENETRATIONS	75 NNI 067 &
	1907		2	PENETRATIONS	75 NNI 256
	1908		1	PENETRATION	75 NNI 256
	1909		1	PENETRATION	75 NNI 256

APPROVED BY QA
F.H. Lariza 11-15-76
APPROVED BY DATE

THIS COMPLETES (PARTIALLY COMPLETES) N/A REV.
THIS CLEARS (PARTIALLY CLEARS) NR N/A DATED

APPLICABLE INSPECTIONS

EACH CHECKED INSPECTION HAS BEEN PERFORMED ON EACH ITEM LISTED ABOVE

VISUAL INSPECTION
- ☑ MARKING
- ☑ SURFACE CLEANLINESS
- ☐ GRADE
- ☒ AS REC'D FOR SHIPOUT
- ☐ PRIM. CLEAN TAG.
- ☐ PLUG WARNING TAG

DIMENSIONAL INSP.
- ☑ WELD PREP
- ☑ OVERALL

DOCUMENTATION
- ☒ MANUFACTURE CERT.
- ☐ SHIPPING PAPERS
- ☐ EQUIPMENT HISTORY

OTHER (SPECIFY)

SHIPPING TRANSPORTATION: TRUCK - MOSS trailer L13

REMARKS: D.J. Long

APPLICABLE DATA

NNI CHARGE P.O./J.O. NO.: 451-N
NNI SHIPMENT NO.: 37 (5024-A-40)

SHIPPED TO
Duke Power Company Attn: D. G. Beam
Catawba Nuclear Station
Newport, South Carolina

ENGINEERING INSTRUCTION: 451-NC-5001 REV. B

QA INSPECTOR: James C. Tiffany DATE 9-15-76

CUSTOMER INSPECTOR: Ken H. Bell DATE 9/14/76

AUTHORIZED INSPECTOR: N/A DATE

DISTRIBUTION

2 - NNI Records Center
1 - Duke Power Company (documentation package)
1 - NNI QA, Bldg 86, 3rd floor

3H

Newport News Industrial Corporation
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WELD HISTORY RECORD

JOB ORDER	DWG NO.	REV.	WELD NO.
5C24A	288133	B	1-3-13-3A / 1-3-13-3B (2)

LOCATION	JOINT TYPE	M/I I NO.	
# 4 Shed	5/16" FILLET	451-NC-X10-23	☒ SHOP ☐ INST.

BASE MATERIAL: ITEM 1902 TO ITEM 1903 ☐ PIPE ☒ PLATE ☒ ORIGINAL ☐ ☐ CUT NO. ☐ REPAIR NO.

MAT'L TYPE	SA-516-GR-60	SA-516-GR-60
Q.C. CONTROL NO.	75NNI010	75NNI218
ACTUAL THK.	3/4"	3/4"

WELDING SUPERVISOR: R. R. Smith DATE: 7-28-75

☒ FIT UP INSPECTOR: E. E. Abelland DATE: 7-28-75

WELDER	ELEC./FILLER/INSERT TYPE	SIZE	Q.C. CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
EVERHART 0777	7018	1/8	75NNI347	TACKWELD	SAT	NA						
0777 EVERHART	F62	5/32	75NNI154 75NNI183	Final A&B	SAT	N/A	MT Mod	Dafon 8651 Level II Bettings	8-5-75			

N.N.I.C. RECORD CENTER FILE COPY 47

REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES: E. R. Abelland / Jim Staffira 1-8-76

Form 1-461

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

opp. 170, 200, 220 & 250

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
5024A	288133	F1	451-NC-X10-23

JOB ORDER LOCATION	INSPECTOR	DATE
SUB SHOP	D.J. Long 9-11-76	7-21-76

JOINT NO. ASSY 1-3-13	BASE MATERIAL ITEM	TO ITEM	PLATE	* PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/LEVEL	DATE
4	1902	1901	•		REVE 7/21/76	FINAL A-310-	MT	Boyd II	8-28
"	"	"	•		"	FINAL B-310E	MT	Boyd II	8-30
201	1904	1901	•		"	FINAL A-310E	MT	Boyd II	8-28
"	"	"	•		"	FINAL B-310E	MT	Boyd II	8-30
202	1904	1901	•		REVE 7/21/76	FINAL A-310E	MT	Boyd II	8-28
"	"	"	•		"	FINAL A-310E	MT	Boyd II	8-30
203	1904	1901	•		REVE 7/21/76	FINAL A-310E	MT	Boyd II	8-28
"	"	"	•		"	FINAL B-310E	MT	Boyd II	8-30
204	1904	1901	•		REVE 7/21/76	FINAL A-310E	MT	Boyd II	8-28
"	"	"	•		"	FINAL B-310E	MT	Boyd II	8-30
205	1904	1901	•		REV F1 9-3-76	FINAL A-310E	MT	Fahey II	9-3-76
"	"	"	•		"	FINAL B-310E	MT	Fahey II	9-3-76

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR: R. G. Williams 9-11-76

INSPECTION SUPERVISOR: J. F. Bolden 9/13/76

DISTRIBUTION
QA
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Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER	DWG NO.	REV.	WELD NO.
5024A	288133	B	MINOR REPAIR BASE MATL. ITEM-1902

LOCATION: # 4 Shed
JOINT TYPE: N/A
M/I NO.: 451-NC-X10-23 ☒ SHOP ☐ INST.
BASE MATERIAL: ITEM 1902 TO ITEM ____ ☐ PIPE ☒ PLATE ☐ ORIGINAL ☐ ____ ☐ CUT NO. ____ ☐ REPAIR NO. ____
MAT'L TYPE: SA 516 Gr.60
QC CONTROL NO.: 75NNI 010
ACTUAL THK.: 3/4"
WELDING SUPERVISOR: R. K. Friest DATE 9-26-75
☒ FIT UP INSPECTOR: E. R. Holland DATE 7-28-75

WELDER	ELEC./FILLER/INSERT TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
				Excavation Base Matl.			MT PROC	LEVEL II 9997 Nakamura	9-26-75			
6857 Miles	E7018	1/8	75NNI 342	Final	SAT	SAT	MT PROC	LEVEL II 9997 Nakamura	9-26-75			

NONCONFORMITY REPORT
X12-2

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REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
E. R. Holland / Jim Staffina 1-8-76

Form 461

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

APP. 270, 283, 286, 289, 300 & 3

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
5024A	288133	F1	451-NC-X10-23

JOB ORDER LOCATION: 508 SHOP
INSPECTOR: D.J. Long 9-11-76
DATE: 7-21-76

JOINT NO. ASSY 1-3-13	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	TYPE	NDE ACCOMPLISHED INSPECTOR/LEVEL	DATE
501	1905	1901	x		Rowe 7/21/76	FINAL A-SIDE	MT	Boyd II	8-28
"	"	"	x		"	B-SIDE ROOT	MT	Carpenter II	8-11
"	"	"	x		"	1ST PASS A-SIDE	MT	Carpenter II	8-11
"	"	"	x		"	FINAL A-SIDE	MT	Boyd II	8-28
501	1905	1901	x			FINAL A-SIDE	UT	Murray II	8-22
"	"	"	x			FINAL B-SIDE	UT	Murray II	8-22
502	1905	1901	x		Rowe 7/21/76	FINAL A-SIDE	MT	Boyd II	8-28
"	"	"	x		"	B-SIDE ROOT	MT	Carpenter II	8-12
"	"	"	x		"	1ST PASS B-SIDE	MT	Carpenter II	8-12
"	"	"	x		"	FINAL B-SIDE	MT	Boyd II	8-28
502	1905	1901	x			FINAL A-SIDE	UT	Murray II	8-22
"	"	"	x			FINAL B-SIDE	UT	Murray II	8-22

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES
WELDING SUPERVISOR: R. G. Williams 9-11-76
INSPECTION SUPERVISOR: J. F. Bell 9/13/76

1-462

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Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

OP. 270, 283, 286, 287, 300 & 320

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
502 V A	288133	F1	457-NC-X10-23
JOB ORDER LOCATION	INSPECTOR		DATE
SUB SHOP	D.J. Long 9-11-76		7-21-76

JOINT NO.	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	TYPE	NDE ACCOMPLISHED INSPECTOR/LEVEL	DATE
ASSY 1-3-13									
503	1905	1901	x		Rev 3 7/21/76	FINAL B-310C	MT	Boyd II	8-28-76
"	"	"	x		"	B-310C ROOT	MT	Carpenter II	8-12-76
"	"	"	x		"	1st PASS B-310C	MT	Barnes II	8-17-76
"	"	"	x		"	FINAL B-310C	MT	Boyd II	8-28-76
503	1905	1901	x			FINAL A-310C	UT	Buchanan #	8-27-76
"	"	"	x			FINAL B-310C	UT	Buchanan #	8-27-76
504	1906	1901	x		Rev 3 7/21/76	FINAL A-310C	MT	Boyd III	8-28-76
"	"	"	x		"	B-310C ROOT	MT	Carpenter II	8-12-76
"	"	"	x		"	1st PASS B-310C	MT	Barnes #	8-17-76
"	"	"	x		"	FINAL B-310C	MT	Boyd #	8-28-76
504	1906	1901	x			FINAL A-310C	UT	Murray #	8-27-76
"	"	"	x			FINAL B-310C	UT	Murray #	8-27-76

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:
Jt 504 SCAM #1-10-13

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR
R.G. Williams 9-11-76

INSPECTION SUPERVISOR
J.J. Bolle 9/13/76

1-462

002350

RECORDS CENTER

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

501 A&B — DATE 8-27-76

HULL	FR	ORIENTATION NO.	STRUCTURE	
5024-A		see below	Unit-1 Assy 1-3-13 Piping in S/G PLT	
PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
X23-7241	A&B	Steel	3/4	0

(INSTRUMENT) TYPE 702-A; NO. 74440
TRANSDUCER NO. 21492; TYPE 256; FREQ 2.25; SIZE 3/8 X 1; ANGLE 70°
CAL. BLOCK NO. 1

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								4-16" Loc's
					T/L		0	
					L		0	0-1
								1-2
								2-3
								3-0
								CC-ok

LOC. OF STENCILING: FWD, AFT, TOP, BOTTOM, INBD, (OUTBD), PORT, STBD

NODE USED: 1ST HALF 1ST NODE; 2ND HALF 1ST NODE; 1ST HALF 2ND NODE; 2ND HALF 2ND NODE

DEFECT TYPE: W - WELD REINFORCEMENT; D - DELAMS - LAMINAR; S - STRUCTURE; L - LACK OF FUSION; N - INCLUSION; C - POROSITY; C - CRACK

DISPOSITION: 0 - SATISFACTORY; R - REJECTABLE; (-) - REJECTABLE PENDING REP. OF R

LENGTH: + = 1/8" OR LESS

PERFORMED BY: Murray

BEAM DIRECTION: F - FWD, PORT, (IN), UP; A - AFT, STBD, OUT, DOWN; (L) LONGITUDINAL WELD; (T) TRANSVERSE WELD; (CO) COMPRESSIONAL

PART OF LAB. REPORT: # 1

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

502 A&B — DATE 8-27-76

HULL	FR	ORIENTATION NO.	STRUCTURE	
5024-A		see below	Unit-1 Assy 1-3-13 Piping in S/G PLT	
PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
X23-7241	A&B	Steel	3/4	0

(INSTRUMENT) TYPE 702A; NO. 74440
TRANSDUCER NO.; TYPE 256; FREQ 2.25; SIZE 3/8 X 1; ANGLE 70°
CAL. BLOCK NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								16" Loc's
					T/L		0	
					L		0	0-1
								1-2
								2-3
								3-0
								CO-ok

LOC. OF STENCILING: FWD, AFT, TOP, BOTTOM, INBD, (OUTBD), PORT, STBD

NODE USED: 1ST HALF 1ST NODE; 2ND HALF 1ST NODE; 1ST HALF 2ND NODE; 2ND HALF 2ND NODE

DEFECT TYPE: W - WELD REINFORCEMENT; D - DELAMS - LAMINAR; S - STRUCTURE; L - LACK OF FUSION; N - INCLUSION; C - POROSITY; C - CRACK

DISPOSITION: 0 - SATISFACTORY; R - REJECTABLE; (-) - REJECTABLE PENDING REP. OF R

LENGTH: + = 1/8" OR LESS

PERFORMED BY: Murray

BEAM DIRECTION: F - FWD, PORT, (IN), UP; A - AFT, STBD, OUT, DOWN; (L) LONGITUDINAL WELD; (T) TRANSVERSE WELD; (CO) COMPRESSIONAL

PART OF LAB. REPORT: 1

Newport News Inuustrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER	DWG NO.	REV.	WELD NO.
5324A	288/108	B	1-10-13P 130

LOCATION: SUB SHOP — JOINT TYPE: Double Bevel — M/I NO.: 451-ee-X10-9 — ☒ SHOP ☐ INST

BASE MATERIAL: ITEM 10 TO ITEM 10 — ☐ PIPE ☒ PLATE — ☒ ORIGINAL ☐ — ☐ CUT NO. ☐ REPAIR NO.

MAT'L TYPE	SA-516-GR-60	SA-516-GR-60
QC CONTROL NO.	75NN 067	75NN 067
ACTUAL THK.	1.219	1.223

WELDING SUPERVISOR: R.L. Williams — DATE 9-18-75
INSPECTOR: ☒ FIT UP D.J. Long — DATE 9-18-75

WELDER	ELEC./FILLER/INSERT TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
2108 SMITH	7018	1/8	75NN 347	1st LAYER A-SIDE	SAT	NA	MT YOKE	333-21-03-7 Foley	9-24-75		BACKGOUGED SURFACE	
2108 SMITH	7018	1/8	75NN 347	1st PASS B-SIDE	SAT	NA	MT YOKE	233-92-... Foley	9-25-75			
2105 SMITH	7018	5/32	75NN 348	FINAL A+B	SAT	SAT	MT YOKE	...	9-30-75	RT	LEVEL 2 E.C. Mirkil	10/1/75
↓	↓	3/16	75NN 349	↓	↓	↓	↓	↓	↓	↓	↓	↓

REMARKS:

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COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long 10-2-75
Jim Joffiera 1-21-76

Form 1-461

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

503-A&B — DATE 8-27-76

HULL: NN 5024-A — FR: — ORIENTATION NO.: SEE REMARKS — STRUCTURE: ASSY 1-3-13 UNIT #1 DENET. IN CYL-PLT
PROCEDURE: X03-7-241 BCP-241 — TEST SURFACE: A/B — MATERIAL: M.S — THICKNESS: 3/4" — STATUS: O
(INSTRUMENT) TYPE 702-A NO. 22130-1 — TRANSDUCER NO. CC4413 TYPE C FREQ. 2.25 SIZE 3/4x1" ANGLE 60° — CALB. BLOCK NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								11" LOCS
					IT/4		O	
								0-1
								1-2
								2-3
								3-0
								CO-OK 5-DA

LOC. OF STENCILING: FWD AFT TOP BOTTOM INBD (OUTBD) PORT STBD

NODE USED: 1ST HALF 1ST NODE / 2ND HALF 1ST NODE ✓ / 1ST HALF 2ND NODE / 2ND HALF 2ND NODE

DEFECT TYPE: W – WELD REINFORCEMENT, D – DELAMS – LAMINAR, S – STRUCTURE, L – LACK OF FUSION, N – INCLUSION, C – POROSITY, C – CRACK

DISPOSITION: O – SATISFACTORY, R – REJECTABLE, (–) – REJECTABLE PENDING REP. OF R
LENGTH: • = 1/8" OR LESS
PERFORMED BY: D.J. Buchanan

BEAM DIRECTION: F – FWD, PORT, (IN), UP; A – AFT, STBD, OUT, DOWN; (L) – LONGITUDINAL WELD; (T) – TRANSVERSE WELD; (CO) – COMPRESSIONAL
PART OF LAB. REPORT

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

504 A&B — DATE 8-27-76

HULL: 5024-A — FR: — ORIENTATION NO.: SEE BELOW — STRUCTURE: ASSY 1 UNIT 1-3-13 Penet. in cyl P.LT.
PROCEDURE: X03-7-241 — TEST SURFACE: A+B — MATERIAL: STEEL — THICKNESS: 3/4 — STATUS: O
(INSTRUMENT) TYPE 702-A NO. 14440 — TRANSDUCER NO. CC4406 TYPE 25C FREQ. 2.25 SIZE 3/4x1 ANGLE 70° — CALB. BLOCK NO. 1

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								4-10½" Loc's
								0-1
								1-2
								2-3
								3-0

LOC. OF STENCILING: FWD AFT TOP BOTTOM INBD (OUTBD) PORT STBD

NODE USED: 1ST HALF 1ST NODE / 2ND HALF 1ST NODE / 1ST HALF 2ND NODE / 2ND HALF 2ND NODE

DEFECT TYPE: W – WELD REINFORCEMENT, D – DELAMS – LAMINAR, S – STRUCTURE, L – LACK OF FUSION, N – INCLUSION, C – POROSITY, C – CRACK

DISPOSITION: O – SATISFACTORY, R – REJECTABLE, (–) – REJECTABLE PENDING REP. OF R
LENGTH: • = 1/8" OR LESS
PERFORMED BY: Murray

BEAM DIRECTION: F – FWD, PORT, (IN), UP; A – AFT, STBD, OUT, DOWN; L – LONGITUDINAL WELD; T – TRANSVERSE WELD; CO – COMPRESSIONAL
PART OF LAB. REPORT

RADIOGRAPHIC TECHNIQUE (over)

NN 1268 (REV. 3) NNS & DD CO. Remarks on back

Field	Value
Date	10-1-75
Hull	5024A
FR	N/A
Orientation No.	1-2
Structure	Penetrations
Weld I.D.	Unit 1 II-m10-10 1-10-13 A+B 288-108B
Status	O
Source Type	IR. I.
Source Size	1/4 x 1/8
Source I.D.	I-51
Curies	88
Shop	RS
Skids	—
Shipway	
Std Setup	N341-441
Mat'l	MS
Time	2 3/4 min.
TM	1 1/4
TS	1 3/4
Penny	25
Shim	1/4
Source Position	-15
Source Angle	90
S.F.D.	20
Film	AA
Size	7 X 17
Exposed By	Hardison
Film Holder No.	32
Inches to be Interp.	12
Accepted	☑ MT ☐ GR/RT ☐ RET ☐ REP ☑ VIR ENCL. ☐
Reason	
Defect Length	
Spec	N341/441
Line No.	
Lot No.	
Interpreter	[illegible]
Date	OCT 2 [illegible]

RADIOGRAPHIC TECHNIQUE

NN 1268 (REV. 3) NNS & DD CO. Remarks on back

Field	Value
Date	10-16-75
Hull	5024A
FR	—
Orientation No.	1-2
Structure	Unit 1 Pen
Weld I.D.	10-10 1-10-14 A+B 288-108B
Status	O
Source Type	IR192
Source Size	1/8 x 1/8
Source I.D.	I-52
Curies	73
Shop	Ring
Skids	
Shipway	
Std Setup	N341-441
Mat'l	MS
Time	2 1/4 min
TM	1 1/4
TS	1 1/2
Penny	30 ASTM
Shim	1/4
Source Position	I.S.
Source Angle	90°
S.F.D.	20"
Film	AA
Size	7 X 17
Exposed By	Voglewede
Film Holder No.	219
Inches to be Interp.	14
Accepted	☑ MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL. ☐
Reason	
Defect Length	
Spec	N341/441
Line No.	
Lot No.	Lev 2 E.C. Mitchell
Date	[illegible] 17 [illegible]

RADIOGRAPHIC TECHNIQUE

NN 1268 (REV. 3) NNS & DD CO. Remarks on back R

Field	Value
Date	10-15-75
Hull	5024A
FR	—
Orientation No.	1-2
Structure	Penetration
Weld I.D.	Unit 1 10-10 1-10-15 A+B 288-108B
Status	O
Source Type	IR 192
Source Size	1/8 x 1/8
Source I.D.	I-48
Curies	72
Shop	R.S.
Skids	
Shipway	
Std Setup	N341-441A1
Mat'l	M.S.
Time	1 1/2 min.
TM	1 1/4
TS	1 1/2"
Penny	30
Shim	1/4
Source Position	I.S.
Source Angle	90
S.F.D.	24"
Film	AA
Size	7 X 17
Exposed By	Padgett
Film Holder No.	150
Inches to be Interp.	14
Accepted	☑ MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL. ☐
Reason	
Defect Length	
Spec	N341-441
Line No.	
Lot No.	
Interpreter	Lev. E.C. Mitchell
Date	OCT 15 1975

PENETRATION SEAM
JOINT #'s 1-10-13, 1-10-14 & 1-10-15

N. N. I. C.
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Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

OPP 270, 283, 286, 289 & ...

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
502 V A	288133	F1	45-NC-X10-23
JOB ORDER LOCATION	**INSPECTOR**		**DATE**
SUB SHOP	D.J. Long 9-11-76		7-21-76

JOINT NO. ASSY 1-3-13	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/ LEVEL	DATE
505	1906	1901	x		DJL E 7-22-76	FINAL A-510E	MT	Boyd II	8-28
"	"	"	x		"	B-510E ROOT	MT	Carpenter	8-12
"	"	"	x		"	1st PASS B-510E	MT	Barnes II	8-17
"	"	"	x		"	FINAL B-510E	MT	Boyd II	8-28
505	1906	1901	x			FINAL A-510E	UT	Buckanon II	8-27
"	"	"	x			FINAL B-510E	UT	Buckanon II	8-27
506	1906	1901	x		Rev. 7/11/76 [illegible]	FINAL A-510E	MT	Boyd II	8-28
"	"	"	x		"	B-510E ROOT	MT	Carpenter II	8-11
"	"	"	x		"	1st PASS B-510E	MT	Barnes II	8-17
"	"	"	x		"	FINAL B-510E	MT	Boyd II	8-28
506	1906	1901	x			FINAL A-510E	UT	Murray II	8-27
"	"	"	x			FINAL B-510E	UT	Murray II	8-27

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:
JO# 505 Seam #1-10-4

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR
R.G. Williams 9-11-76

INSPECTION SUPERVISOR
J.F. Bolden 9/13/76

1-462

0Q2352

RECORDS CENTER

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER	DWG NO.	REV.	WELD NO.
5024 A	288108	B	1-10-4-A / 1-10-4 B

LOCATION	JOINT TYPE	M/I NO.	SHOP / INST.
SUB SHOP	Double Bevel	451-NC-X10-9	

BASE MATERIAL: ITEM 10 TO ITEM P — ☒ PLATE — ☒ ORIGINAL — ☐ CUT NO. — ☐ REPAIR NO.

			WELDING SUPERVISOR	DATE
MAT'L TYPE	SA516-GR-60	SA-516-GR-60	R. Williams	10-7-75
QC CONTROL NO.	75NNI 068	75NNI 068	INSPECTOR	DATE
ACTUAL THK.	1.232	1.233	Fit up D.J. Long	9-26-75

WELDER	ELEC. TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
2108 SMITH	7018	1/8	75NNI 347	Tack weld	SAT	N/A						
				Root Layer A-Side			Visual / MT	[illegible]	10-6-75		Back Gouged Surface	
				1st Pass B-Side			Visual / MT	[illegible]	10-6-75			
		5/32	75NNI 348	Final A+B	SAT		Visual / MT	[illegible]	10-7-75	RT	Level E EC Mitchell	10-7-75
		3/16	75NNI 349									

REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long — Jim Steffiena 1-21-76 — 10-17-75

N.N.I.C.
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Form 1-461

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

505-A&B — DATE 8/27/76

HULL	FR	ORIENTATION NO.	STRUCTURE
HN 5024-A	—	SEE REMARKS	ASSY 1-3-13 UNIT # 1 Penet. in Cyl - PLT

PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
XO3-7-241	A/B	M.S.	3/4"	0

INSTRUMENT: TYPE 703-A, NO. 721304 — TRANSDUCER NO. CO-4495, TYPE G, FREQ. 2.25, SIZE 3/8"x1", ANGLE 60° — CAL. BLOCK NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								20 1/2" Locs.
F-3 12 1/2"	1 1/2	1/4	2-3	70	TF		O	From B side 10-1
1-2 14"	1 1/4	1/4	2-3	75	TF		O	" " " 1-2
								2-3
								3-0
								CO-OK 5-DB

LOC. OF STENCILING: FWD, AFT, TOP, BOTTOM, INBD, (OUTBD), PORT, STBD

NODE USED: 1ST HALF 1ST NODE, 2ND HALF 1ST NODE, 1ST HALF 2ND NODE, 2ND HALF 2ND NODE

DEFECT TYPE: W - WELD REINFORCEMENT; D - DELAMS - LAMINAR; S - STRUCTURE; L - LACK OF FUSION; N - INCLUSION; C - POROSITY; C - CRACK

DISPOSITION: O - SATISFACTORY; R - REJECTABLE; (-) - REJECTABLE PENDING REP. OF R

LENGTH: * = 1/8" OR LESS

PERFORMED BY: D.J. Buchanan

BEAM DIRECTION: F - FWD, PORT, UP; A - AFT, STBD, OUT, DOWN; L - LONGITUDINAL WELD; T - TRANSVERSE WELD; SC - COMPRESSIONAL

PART OF LAB. REPORT

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

30C A&B — DATE 8-27-76

HULL	FR	ORIENTATION NO.	STRUCTURE
5024-A	—	see below	Unit 1 Assy 1-3-13 Penet in Cly PLT

PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
XO3-7-241	A+B	STEEL	3/4	0

INSTRUMENT: TYPE 703-A, NO. 74440 — TRANSDUCER NO. C21906, TYPE 25C, FREQ. 2.25, SIZE 3/4x1, ANGLE 70° — CAL. BLOCK NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								4 - 11" loc's.
					T/L		O	
					L		O	0-1
								1-2
								2-3
								3-0
								CO-OK

LOC. OF STENCILING: FWD, AFT, TOP, BOTTOM, INBD, (OUTBD), PORT, STBD

NODE USED: 1ST HALF 1ST NODE, 2ND HALF 1ST NODE, 1ST HALF 2ND NODE, 2ND HALF 2ND NODE

DEFECT TYPE: W - WELD REINFORCEMENT; D - DELAMS - LAMINAR; S - STRUCTURE; L - LACK OF FUSION; N - INCLUSION; C - POROSITY; C - CRACK

DISPOSITION: O - SATISFACTORY; R - REJECTABLE; (-) - REJECTABLE PENDING REP. OF R

LENGTH: * = 1/8" OR LESS

PERFORMED BY: [signature]

BEAM DIRECTION: F - FWD, PORT, UP; A - AFT, STBD, OUT, DOWN; L - LONGITUDINAL WELD; T - TRANSVERSE WELD; C - COMPRESSIONAL

PART OF LAB. REPORT

Newport News Industr Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

OP.270,283,286,289,300 & 320

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
5824A	288133	F1	457-NC-X10-23
JOB ORDER LOCATION	**INSPECTOR**		**DATE**
SUB SHOP	D.J. Long 9-11-76		7-21-76

JOINT NO. ASSY 1-3-13	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/ LEVEL	DATE
507	1908	1901	x		RAVE 7/21/76	FINAL A-SIDE	MT	Fakerty II	8-30-76
"	"	"	x		"	B-SIDE ROOT	MT	Barnes II	8-17-76
"	"	"	x		"	1ST PASS B-SIDE	MT	Barnes II	8-17-76
"	"	"	x		"	FINAL B-SIDE	MT	Fakerty II	8-30-76
507	1908	1901	x			FINAL A-SIDE	UT	Avedimon II	8-27-76
"	"	"	x			FINAL B-SIDE	UT	Avedimon II	8-27-76
508	1909	1901	x		RAVE 7-22-76	FINAL A-SIDE	MT	Fakerty II	8-30-76
"	"	"	x		"	B-SIDE ROOT	MT	Barnes II	8-17-76
"	"	"	x		"	1ST PASS B-SIDE	MT	Barnes II	8-17-76
"	"	"	x		"	FINAL B-SIDE	MT	Fakerty II	8-30-76
508	1909	1901	x			FINAL A-SIDE	UT	Murray II	8-27-76
"	"	"	x			FINAL B-SIDE	UT	Murray II	8-27-76

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:
J0# 507 SEAM # 1-20-1
J0# 508 SEAM # 1-12-1

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR
R.L. Williams 9-11-76

INSPECTION SUPERVISOR
J.F. Bldn 9/13/76

1-462

002353 X

RADIOGRAPHIC TECHNIQUE

NN 1268 (REV. 3) NNS & DD CO. Remarks on back

- DATE: 10-16-75
- HULL: 5024A
- FR: —
- ORIENTATION NO.: 1-2
- STRUCTURE: (Pn. + F) Penetration
- WELD I.D.: 10-10 1-10-4 A+B 288-108B
- STATUS: O
- SOURCE TYPE: IRd
- SOURCE SIZE: 1/4 X 1/8
- SOURCE I.D.: I52
- CURIES: 73
- SHOP: RS
- SKIDS: —
- SHIPWAY: —
- STD SETUP: N341-441
- MAT'L: MS
- TIME: 2 1/4 min
- TM: 1 1/4
- TS: 1 1/2
- PENNY: 30 ASTM
- SHIM: 1/4
- SOURCE POSITION: I/S
- SOURCE ANGLE: 90°
- S.F.D.: 24"
- FILM: AA
- SIZE: 7 X 17
- EXPOSED BY: Voglewede
- FILM HOLDER NO.: 200
- INCHES TO BE INTERP.: 14
- ACCEPTED [✓] MT [ ] GR/RT [ ] RET [ ] REP [ ] VIR ENCL. [ ]
- REASON:
- DEFECT LENGTH:
- SPEC: N341/441
- LINE NO.:
- LOT NO.:
- INTERPRETER: Lev 2 E.C. Miller
- DATE: [illegible] 17 1975

RADIOGRAPHIC TECHNIQUE

NN 1268 (REV. 3) NNS & DD CO. Remarks on back

- DATE: 10-15-75
- HULL: 5024A
- FR: —
- ORIENTATION NO.: 1-2
- STRUCTURE: PENETRATION
- WELD I.D.: UNIT 1 10-10-1-10-5 A+B 288108-B
- STATUS: O
- SOURCE TYPE: IR-192
- SOURCE SIZE: 1/8 x 1/16
- SOURCE I.D.: I-48
- CURIES: 72
- SHOP: R.S.
- SKIDS:
- SHIPWAY:
- STD SETUP: N341-441 A1
- MAT'L: M.S.
- TIME: 4 1/2 MIN
- TM: 1 1/4
- TS: 1 1/2
- PENNY: 30
- SHIM: 1/4
- SOURCE POSITION: I S
- SOURCE ANGLE: 90°
- S.F.D.: 24"
- FILM: AA
- SIZE: 7 X 17
- EXPOSED BY: Padgett
- FILM HOLDER NO.: 144
- INCHES TO BE INTERP.: 14"
- ACCEPTED [✓] MT [ ] GR/RT [ ] RET [ ] REP [ ] VIR ENCL. [ ]
- REASON:
- DEFECT LENGTH:
- SPEC: N341/441
- LINE NO.:
- LOT NO.:
- INTERPRETER: Lev 2 E.C. Miller
- DATE: OCT 15 1975

RADIOGRAPHIC TECHNIQUE

NN 1268 (REV. 3) NNS & DD CO. Remarks on back

- DATE: 10-16-75
- HULL: 5024A
- FR: —
- ORIENTATION NO.: 1-2
- STRUCTURE: (Cn. F) Penetration
- WELD I.D.: 10-10-1-10-6 A+B 288-108B
- STATUS: O
- SOURCE TYPE: IRd
- SOURCE SIZE: 1/4 X 1/8
- SOURCE I.D.: I52
- CURIES: 73
- SHOP: RS
- SKIDS:
- SHIPWAY:
- STD SETUP: N341-441
- MAT'L: MS
- TIME: 2 1/4 min
- TM: 1 1/4
- TS: 1 1/2
- PENNY: 30 ASTM
- SHIM: 1/4
- SOURCE POSITION: I/S
- SOURCE ANGLE: 90°
- S.F.D.: 24"
- FILM: AA
- SIZE: 7 X 17
- EXPOSED BY: Voglewede
- FILM HOLDER NO.: 272
- INCHES TO BE INTERP.: 14
- ACCEPTED [✓] MT [ ] GR/RT [ ] RET [ ] REP [ ] VIR ENCL. [ ]
- REASON:
- DEFECT LENGTH:
- SPEC: N341/441
- LINE NO.:
- LOT NO.:
- INTERPRETER: Lev 2 E.C. Miller
- DATE: 17 [illegible]

PENETRATION SEAM
JOINT #'S 1-10-4, 1-10-5 & 1-10

RADIOGRAPHIC TECHNIQUE

NN 1248 (REV. 3) NNS & DD CO. — Remarks on back

Field	Value
DATE	2-11-76
HULL	NNS 5024A
ORIENTATION NO.	1-2
STRUCTURE	Penet
WELD	Unit 1 J1-20-1 A&B 288-108
STATUS	0
SOURCE TYPE	Ir 192
SOURCE SIZE	[illegible]
SOURCE I.D.	[illegible]
CURIES	15
SHOP	Ring
SKIDS	
SHIPWAY	
STD SETUP	N341/441
MAT'L	MS
TIME	2½
FM	1⅜
TS	1½
PENNY	30
SHIM	5/16
SOURCE POSITION	1.5
SOURCE ANGLE	90
S.F.D.	16"
FILM	AA
	7X17
EXPOSED BY	Newton
FILM HOLDER NO.	5
INCHES FOR INTERP.	14½
ACCEPTED	☑
MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL. ☐	
REASON	
DEFECT LENGTH	
SPECS	N341/441
LINE NO. / LOT NO.	Lev II E.C. Mitchell
DATE	2-11-76

RADIOGRAPHIC TECHNIQUE

NN 1248 (REV. 3) NNS & DD CO. — Remarks on back

Field	Value
DATE	2-11-76
HULL	NNS 5024A
ORIENTATION NO.	1-2
STRUCTURE	Penet
WELD	Unit #1 J1-20-2 A&B 288-108
STATUS	0
SOURCE TYPE	Ir 192
SOURCE SIZE	[illegible]
SOURCE I.D.	[illegible]
CURIES	78
SHOP	Ring
SKIDS	
SHIPWAY	
STD SETUP	N341/441
MAT'L	MS
TIME	2½ min
FM	1⅜
TS	1½
PENNY	30
SHIM	5/16
SOURCE POSITION	1.5
SOURCE ANGLE	90
S.F.D.	16"
FILM	AA
	7X17
EXPOSED BY	Newton
FILM HOLDER NO.	5
INCHES FOR INTERP.	14½
ACCEPTED	☑
MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL. ☐	
REASON	
DEFECT LENGTH	
SPECS	N341/441
LINE NO. / LOT NO.	Lev II E.C. Mitchell
DATE	2-11-76

ULTRASONIC TEST DATA

NN FORM 3321 (REV. 1)

507-A&B

Field	Value
DATE	8/27/76
HULL	N.N. 5024-A
FR	—
ORIENTATION NO.	See Remarks
STRUCTURE	Assy 1-3-13 Unit #1 Penet in Cyl. PLT
PROCEDURE	X03-7-241
TEST SURFACE	A/B
MATERIAL	M.S.
THICKNESS	3/4"
STATUS	0
INSTRUMENT TYPE	702-A
INSTRUMENT NO.	721204
TRANSDUCER NO.	CE4775
TRANSDUCER TYPE	C
FREQ.	2.25
SIZE	3/8"
ANGLE	60°
CAL. BLOCK NO.	—

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								16" Locs
					TF/A		0	0-1
								1-2
								2-3
								3-0
								CO-OK 5-08

LOC. OF STENCILING: FWD / AFT / TOP / BOTTOM / INBD / (OUTBD) / PORT / STBD

NODE USED: 1ST HALF / 2ND HALF ✓ / 1ST HALF / 2ND HALF — 1ST NODE / 1ST NODE / 2ND NODE / 2ND NODE

DEFECT TYPE: W – WELD REINFORCEMENT; D – DELAMI – LAMINAR; S – STRUCTURE; L – LACK OF FUSION; N – INCLUSION; C – POROSITY; C – CRACK

DISPOSITION: O – SATISFACTORY; R – REJECTABLE; (–) – REJECTABLE PENDING REP. OF R

LENGTH: • = 1/8" OR LESS

PERFORMED BY: D.J. Buchanan

BEAM DIRECTION: F – FWD, PORT, (IN), UP; A – AFT, STBD, OUT, DOWN; (L) – LONGITUDINAL WELD; (T) – TRANSVERSE WELD; CO – COMPRESSIONAL

PART OF LAB. REPORT

ULTRASONIC TEST DATA

NN FORM 3321 (REV. 1)

508 A&B

Field	Value
DATE	7-27-76
HULL	5024-A
FR	
ORIENTATION NO.	55° Below
STRUCTURE	Unit-1 Assy 1-3-13 Penet in Cyl Plt
PROCEDURE	X03-7-241
TEST SURFACE	A/B
MATERIAL	Steel
THICKNESS	3/4
STATUS	0
INSTRUMENT TYPE	702-A
INSTRUMENT NO.	74440
TRANSDUCER NO.	[illegible]
TRANSDUCER TYPE	ZFC
FREQ.	2.25
SIZE	3/8 x 1
ANGLE	70°
CAL. BLOCK NO.	1

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								4 10½" Locs
					T F/A		0	
					L		0	0-1
								1-2
								2-3
								3-0
								C.O.-OK

LOC. OF STENCILING: FWD / AFT / TOP / BOTTOM / INBD / (OUTBD) / PORT / STBD

NODE USED: 1ST HALF / 2ND HALF / 1ST HALF / 2ND HALF — 1ST NODE / 1ST NODE / 2ND NODE / 2ND NODE

DEFECT TYPE: W – WELD REINFORCEMENT; D – DELAMS – LAMINAR; S – STRUCTURE; L – LACK OF FUSION; N – INCLUSION; C – POROSITY; C – CRACK

DISPOSITION: O – SATISFACTORY; R – REJECTABLE; (–) – REJECTABLE PENDING REP. OF R

LENGTH: • = 1/8" OR LESS

PERFORMED BY: Murray

BEAM DIRECTION: F – FWD, PORT, IN, UP; A – AFT, STBD, OUT, DOWN; (L) – LONGITUDINAL WELD; (T) – TRANSVERSE WELD; CO – COMPRESSIONAL

PART OF LAB. REPORT

PENETRATION SEAM
JOINT #'S 1-20-1 & 1-20-2

Newport News Inuustrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER: 5024A	DWG NO.: 288708	REV.: B	WELD NO.: 1-12-1A 1B
LOCATION: SUB SHOP	JOINT TYPE: DOUBLE BEVEL	M/I I NO.: 451-NC-X10-9	☒ SHOP ☐ INST.
BASE MATERIAL: ITEM 12 TO ITEM 12	☒ PLATE	☒ ORIGINAL	☐ CUT NO. ☐ REPAIR NO.

MAT'L TYPE	SA-516-GR-60	SA-516-GR-60	WELDING SUPERVISOR: R A Williams	DATE: 10-14-75
QC CONTROL NO.	75NNI 256	75NNI 256		
ACTUAL THK.	1.346	1.350	INSPECTOR (FIT UP): D.J. Long	DATE: 9-26-75

WELDER	ELEC./FILLER/INSERT TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
2108 SMITH	7015	1/8	75NNI-307	TACK WELD	SAT	NA						
↓	↓	↓	↓	ROOT & LAYER A-SIDE	↓	↓	YOKE MT	223-74-0817 [illegible]	10-1-75		BACKGOUGED SURFACE	
↓	↓	↓	↓	1st PASS B-SIDE	↓	↓	YOKE MT	223-74-0817 [illegible]	10-2-75			
↓	↓	5/32	75NNI 348	FINAL A+B		SAT	YOKE MT	223-74-0817 [illegible]	10-6-75	RT	LEVEL II EC MITCHELL	11-12-75
↓	↓	3/16	75NNI 345	↓	↓	↓	↓	↓	↓	↓	↓	↓

N. N. I. C.
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REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long 10-17-75 Jim Stuffiera 1-22-76

Form 1-461

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER: 5024A	DWG NO.: 288104	REV.: C	WELD NO.: 1-20-1A+B
LOCATION: SUB SHOP	JOINT TYPE: DOUBLE BEVEL	M/I I NO.: 451-NC-X10-9	☒ SHOP ☐ INST.
BASE MATERIAL: ITEM 20 TO ITEM 20	☐ PIPE ☒ PLATE	☒ ORIGINAL	☐ CUT NO. ☐ REPAIR NO.

MAT'L TYPE	SA-516-GR-60	SA-516-GR-60	WELDING SUPERVISOR: G. T. Connell	DATE: 2-9-76
QC CONTROL NO.	75NNI 256	75NNI 256		
ACTUAL THK.	1.357	1.365	INSPECTOR (FIT UP): D.J. Long	DATE: 2-2-76

WELDER	ELEC./FILLER/INSERT TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
6475 CARTER	7018	1/8	75NNI 506	TACK WELD	SAT							
↓	7018	1/8	75NNI 506	ROOT	SAT	NA	MT YOKE	226-74-0514 Carpenter Level II	2-6-76	BACKGOUGED SURFACE		
↓	7018	5/32	75NNI 348	1st LAYER B-SIDE	SAT	NA	MT YOKE	226-74-0514 Carpenter Level II	2-6-76			
↓	7018	5/32	75NNI 348	FINAL A+B	SAT	SAT	MT YOKE	[illegible] (II)	2-10-76	RT	(II) EC MITCHELL	2-11

N. N. I. C. 294
RECORD CENTER
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REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long / Jim Stuffiera 3-30-76

Form 1-451

Newport News Indust. Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

OPT. 770, 283, 286, 289, 300 & 1-20

JOB ORDER NO.	DWG. NO.	REV.	M.I. NO.
502419	288133	F1	451-NC-X10-23
JOB ORDER LOCATION: SUB SHOP	INSPECTOR: D.J. Long 9-11-76		DATE: 7-22-76

JOINT NO. ASSY 1-3-13	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/ LEVEL	DATE
509	1907	1901	x		DJL 7-26-76	FINAL A-310°	MT	Faherty II	8-28-76
"	"	"	x		"	B-310° ROOT	MT	Faherty II	8/19-76
"	"	"	x		"	1st PASS B-310°	MT	Faherty II	8-20-76
"	"	"	x		"	FINAL B-310°	MT	Faherty II	8-28-76
509	1907	1901	x			FINAL A-310°	UT	Buckanan II	8-27-76
"	"	"	x			FINAL B-310°	UT	Buckanan II	8-27-76
510	1907	1901	x		DJL 7-22-76	FINAL A-310°	MT	Faherty II	8-28-76
"	"	"	x		"	B-310° ROOT	MT	Faherty II	8-17-76
"	"	"	x		"	1st PASS B-310°	MT	Faherty II	8-20-76
"	"	"	x		"	FINAL B-310°	MT	Faherty II	8-20-76
510	1907	1901	x			FINAL A-310°	UT	Buckanan II	8-27-76
"	"	"	x			FINAL B-310°	UT	Buckanan II	8-27-76

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:
J0# 509 Seam # 1-16-3
J0# 510 Seam # 1-16-4

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR: [signature] 9-11-76

INSPECTION SUPERVISOR: [signature] 9/13/76

1-412

002354

RADIOGRAPHIC TECHNIQUE NN 1258 (REV. 3) NNS & DD CO. Remarks on back			DATE 6-16-75
HULL 51244	FR —	ORIENTATION NO. 1-2	STRUCTURE Penetration Unit 1
WELD I.D. 72-12, 1-12-1 A & B 248-168 B			
STATION 0	SOURCE TYPE Irid	SOURCE SIZE 1/8 X 1/8	SOURCE I.D. I 62	CURIES 73
SHOP RS	SKIDS —	SHIPWAY —	STD SETUP 733 41-441	MAT'L HMS
TIME 2½ Min	TM 1 3/8	TS 1 5/8	PENNY 30 ASTM	SHIM 1/2
SOURCE POSITION F/S	SOURCE ANGLE 90	S.F.D. 20	FILM AA	SIZE 7 X 17
EXPOSED BY Vogtrede		FILM HOLDER NO. 2	INCHES TO BE INTERP. 14
ACCEPTED ☑ MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL ☐			
REASON		DEFECT LENGTH	SPEC. N341/AAI
LINE NO.	LOT NO. Lev 2	INTERPRETER E. C. Mitchell	DATE 6 17 1975

PENETRATION SEAM
JOINT # 1-12-1

Newport News Inuustrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER	DWG NO	REV.	WELD NO.
5024A	288108 B		1-16-3 A / 3 B

LOCATION	JOINT TYPE	M/T I NO.	
SUB SHOP	Double Bevel	457-NC-X10-9	☒ SHOP ☐ INST.

BASE MATERIAL: ITEM 16 TO ITEM 16 ☐ PIPE ☒ PLATE — ☒ ORIGINAL ☐ — ☐ CUT NO. ☐ REPAIR NO.

			WELDING SUPERVISOR	DATE
MAT'L TYPE	SA-516-GR-60	SA-516-GR-60	R.G. Williams	10-9-75
QC CONTROL NO.	75 AN 256	75 ANI 256	INSPECTOR	DATE
ACTUAL THK.	1.355	1.358	FIT UP D.J. Long	10-3-75

WELDER	ELEC./FILLER/INSERT TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
2108 SMITH	7018	1/8	75 ANI 347	TACK WELD	SAT	N/A						
				RUT LAYER A-SIDE			Yoke MT	2223-7-0717 Level II J. Foltz	10-8-75		BACK GOUGED SURFACE	
				1st PASS B-SIDE			Yoke MT	2223-7-0717 Level II J. Foltz	10-10-75			
	5/32		75 ANI 348	FINAL A+B		SAT	Yoke MT	2223-7-0717 Level II J. Foltz	10-13-75	RT	Level II E.C. Mitchell	10-15-75
	3/16		75 ANI 349									

N. N. I. C.
RECORD CENTER
FILE COPY 192

REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long 10-15-75
Jim Williams 1-22-76

Form 1-461

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

509-A & B — DATE 8/22/76

HULL	FR	ORIENTATION NO.	STRUCTURE
NN 5024-A	~	SEE REMARKS	ASSY 1-3-13 UNIT #1 Penet. in Cyl. PLT

PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
X03-7-241	A/B	M.S.	3/4"	S

(INSTRUMENT) TYPE 702-A NO. 721204 — TRANSDUCER NO. CG 4945 TYPE G FREQ. 2.25 SIZE 3/4 x 1" ANGLE 60° — CALB. BLOCK NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								25" LOCS
					TF/A		O	
								0-1
								1-2
								2-3
								3-0
								CO-OK 5-OB

LOC. OF STENCILING: FWD, AFT, TOP, BOTTOM, INBD, (OUTBD), PORT, STBD

NODE USED: 1ST HALF ✓ 2ND HALF ✓ 1ST HALF 2ND HALF / 1ST NODE 1ST NODE 2ND NODE 2ND NODE

DEFECT TYPE: W – WELD REINFORCEMENT, D – DELAMS – LAMINAR, S – STRUCTURE, L – LACK OF FUSION, H – INCLUSION, P – POROSITY, C – CRACK

DISPOSITION: O – SATISFACTORY, R – REJECTABLE, (–) – REJECTABLE PENDING REP. OF R

LENGTH: • = 1/8" OR LESS

BEAM DIRECTION: F – FWD, PORT, IN, UP; A – AFT, STBD, OUT, DOWN; L – LONGITUDINAL WELD; T – TRANSVERSE WELD; CO – COMPRESSIONAL

PERFORMED BY: D.J. Buchanan

PART OF LAB. REPORT

ULTRASONIC TEST DATA
NN FORM 2321 (REV. 1)

510-A & B — DATE 8-22-76

HULL	FR	ORIENTATION NO.	STRUCTURE
NN 5024-A	—	SEE REMARKS	ASSY 1-3-13 UNIT #1 Penet. in Cyl. PLT

PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
X03-7-241	A/B	M.S.	3/4"	O

(INSTRUMENT) TYPE 702-A NO. 721204 — TRANSDUCER NO. CG 4945 TYPE G FREQ. 2.25 SIZE 3/4 x 1" ANGLE 60° — CALB. BLOCK NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								25" LOCS
2-3 11"	7/8	7/16	2-3	40	TF		O	← From A Side 0-1
								1-2
								2-3
								3-0
								CO-OK 5-OB

LOC. OF STENCILING: FWD, AFT, TOP, BOTTOM, (INBD), OUTBD, PORT, STBD

NODE USED: 1ST HALF ✓ 2ND HALF ✓ 1ST HALF 2ND HALF / 1ST NODE 1ST NODE 2ND NODE 2ND NODE

DEFECT TYPE: W – WELD REINFORCEMENT, D – DELAMS – LAMINAR, S – STRUCTURE, H – INCLUSION, P – POROSITY, C – CRACK

DISPOSITION: O – SATISFACTORY, R – REJECTABLE, (–) – REJECTABLE PENDING REP. OF R

LENGTH: • = 1/8" OR LESS

BEAM DIRECTION: F – FWD, PORT, IN, UP; A – AFT, STBD, OUT, DOWN; L – LONGITUDINAL WELD; T – TRANSVERSE WELD; CO – COMPRESSIONAL

PERFORMED BY: D.J. Buchanan

PART OF LAB. REPORT

RADIOGRAPHIC TECHNIQUE

NN 7768 (REV. 3) NNS & DD CO. — C — Remarks on back — DATE 10-15-75

HULL 5024A	FR —	ORIENTATION NO. 1-2
STRUCTURE	PENETRATION	
WELD I.D.	UNIT 1 1-16-2 A+B 288-108 B	
STATUS O	SOURCE TYPE IR @ 192	SOURCE SIZE 1/8 X 1/8
SOURCE I.D. I-48	CURIES 72	
SHOP R.S.	SKIDS	SHIPWAY
STD SETUP N341-441 A1	MAT'L M.S	
TIME 7 1/2 MIN	TM 1 3/8	TS 1 5/8
PENNY 30	SHIM 1/4	
SOURCE POSITION I S	SOURCE ANGLE 90°	S.F.D. 30"
FILM AA	SIZE 7 X 17	
EXPOSED BY Padgett	FILM HOLDER NO. 113	INCHES TO BE INTERP. 14
ACCEPTED ☑	MT ☐ GR/RT ☐ RET ☐ REP ☐	VIR ENCL. ☐
REASON	DEFECT LENGTH	SPEC N341/441
LINE NO.	LOT NO. Lev 2 ECMitchell	DATE OCT 15 1975

RADIOGRAPHIC TECHNIQUE

NN 7768 (REV. 3) NNS & DD CO. — C — Remarks on back — DATE 10-15-75

HULL 5024A	FR —	ORIENTATION NO. 1-2
STRUCTURE	PENETRATION	
WELD I.D.	UNIT 1 16-16 1-16-3 A+B 288-108 B	
STATUS O	SOURCE TYPE IR @ 192	SOURCE SIZE 1/8 x 1/8
SOURCE I.D. I-48	CURIES 72	
SHOP R.S.	SKIDS	SHIPWAY
STD SETUP N341-441 A1	MAT'L M.S.	
TIME 7 1/2 MIN.	TM 1 3/8	TS 1 5/8
PENNY 30	SHIM 1/4	
SOURCE POSITION I S	SOURCE ANGLE 90°	S.F.D. 30"
FILM AA	SIZE 7 X 17	
EXPOSED BY Padgett	FILM HOLDER NO. 209	INCHES TO BE INTERP. 15"
ACCEPTED ☑	MT ☐ GR/RT ☐ RET ☐ REP ☐	VIR ENCL. ☐
REASON	DEFECT LENGTH	SPEC N341-441
LINE NO.	LOT NO. Lev 2 ECMitchell	DATE OCT 15 1975

RADIOGRAPHIC TECHNIQUE

NN 7768 (REV. 3) NNS & DD CO. — Remarks on back — DATE 10-16-75

HULL 5024A	FR —	ORIENTATION NO. 1-2
STRUCTURE	Penetration (Unit 1)	
WELD I.D.	16-16 1-16-4 A+B 288-108B	
STATUS O	SOURCE TYPE IR 192	SOURCE SIZE 1/8 X 1/8
SOURCE I.D. I 52	CURIES 23	
SHOP RS	SKIDS	SHIPWAY
STD SETUP N341-441	MAT'L MS	
TIME 2 1/2 min	TM 1 3/4	TS 1 3/4
PENNY 30 ASTM	SHIM 1/4	
SOURCE POSITION IS	SOURCE ANGLE 90°	S.F.D. 30"
FILM AA	SIZE 7 X 17	
EXPOSED BY Voglewede	FILM HOLDER NO. 763	INCHES TO BE INTERP. 14
ACCEPTED ☑	MT ☐ GR/RT ☐ RET ☐ REP ☐	VIR ENCL. ☐
REASON	DEFECT LENGTH	SPEC N341/441
LINE NO.	LOT NO. Lev 2 BRMills	DATA OCT 17 1975

PENETRATION SEAM

Newport News Industrial Corporation

Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

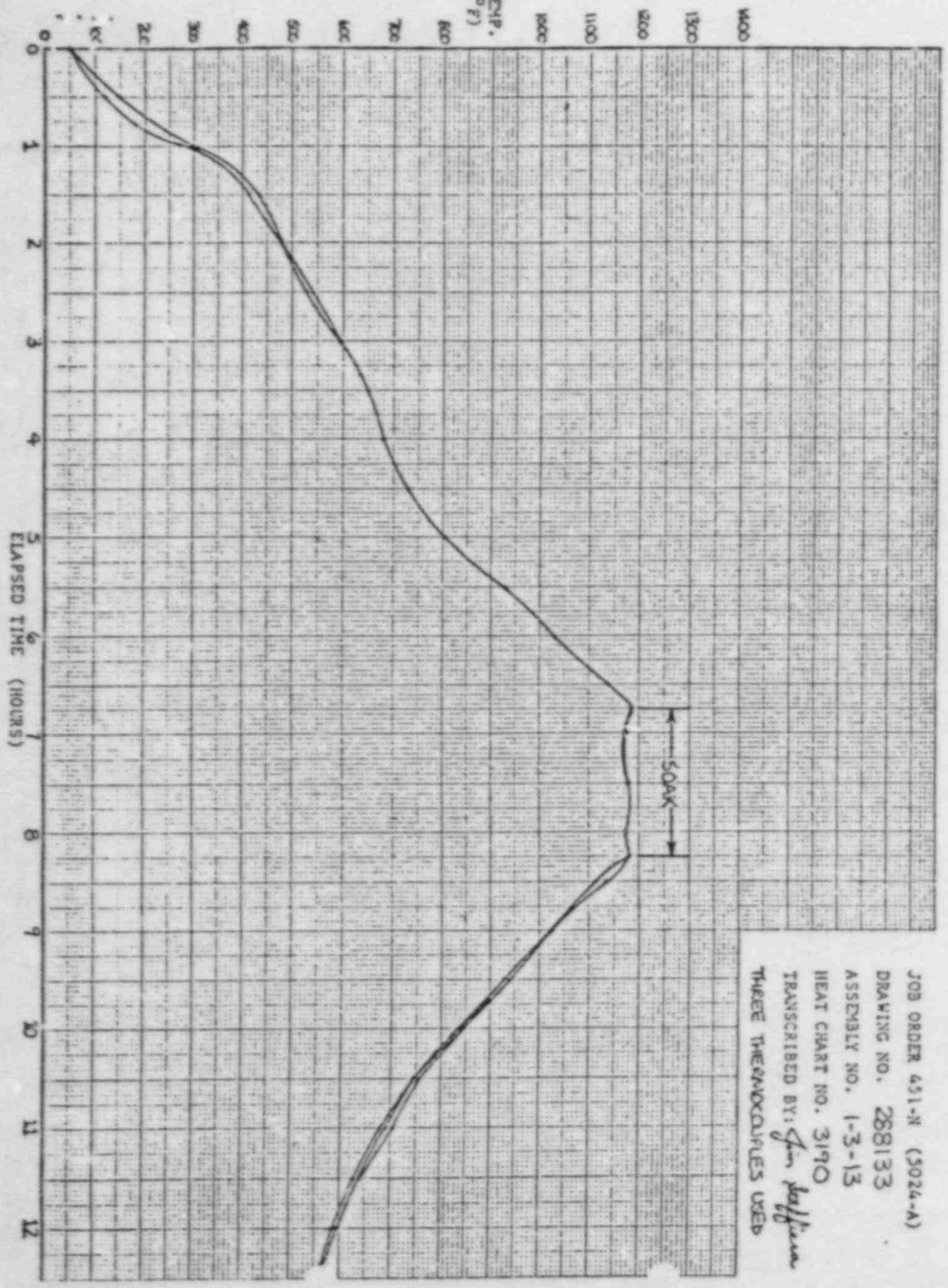
JOB ORDER 5024 A	DWG NO. 288 108 B	REV.	WELD NO. 1-16-4 A 4 B
LOCATION SUB SHOP	JOINT TYPE Double Bevel	M/I NO. HST-NC-X10-9	☒ SHOP ☐ INST
BASE MATERIAL ITEM 16 TO ITEM 16	☐ PIPE ☒ PLATE	☒ ORIGINAL ☐	☐ CUT NO. ☐ REPAIR NO.
MAT'L TYPE SA-516-GR 60	SA-516-GR-60	WELDING SUPERVISOR R G Williams	DATE 10-9-75
QC CONTROL NO. 75NM 256	75NM 256	INSPECTOR	
ACTUAL THK. 1.352	1.355	FIT UP DJ. Long	DATE 10-3-75

WELDER	ELEC. TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK REPAIR NO.	PRE HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DA
2108 SMITH	7018	1/8	75NM 347	~~Tack weld~~ Root Layer	SAT	NA	Surf. MT					
				A-Side				[illegible]			BACKGOUGED SURFACE	
				1st Pass			MT	[illegible]	10-7			
				B-Side				[illegible]				
				FINAL			MT	[illegible]	10-10			
		5/32	75NM 348	A+B		SAT		[illegible]		RT	Level II EC Mitchell	
↓	↓	3/16	75NM 349	↓	↓	↓	↓	↓	↓	↓	↓	

REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long 10-17-75
Jim [illegible] 1-22-76

Form 1-461



JOB ORDER 451-N (5024-A)
DRAWING NO. 288133
ASSEMBLY NO. 1-3-13
HEAT CHART NO. 3190
TRANSCRIBED BY: Jim Hoffman
THREE THERMOCOUPLES USED

Newport News Industri Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

JOB ORDER NO.	DWG. NO.	REV.	MII NO.
5024A	288133	F'	457-RC-X10-23
JOB ORDER LOCATION	**INSPECTOR**		**DATE**
SUB SHOP	D.J. Long	9-11-76	

JOINT NO.	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/ LEVEL	DATE
A334 1-3-13									
*	1901	—	X			* BASE METAL EXCAVATION	MT	Johnson II	9-11-7
"	"	—	X			FINAL	MT	Johnson II	9-11-7

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS: * BASE METAL REPAIRS MADE BY PAT. CLAMPS TEMP. ATTACHMENTS, ECT. AFFECTED PLACES

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR: R.L. Williams 9-11-76

INSPECTION SUPERVISOR: D.T. Bolden 9/12/76

1-462

000639

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA

SHIPPING NOTICE — FOR: NEWPORT NEWS INDUSTRIAL CORPN. (A TENNECO CO.) NEWPORT NEWS, VIRGINIA 23607 — DATE: FEBRUARY 28, 1977

CUSTOMER'S ORDER	N.N. ORDER		
A-98512	5024-A (451-N)		
CUSTOMER'S REQ'N.	N.N. CHARGE	5024-A-00907	N.N. FILE 5924-A

CONSIGNED TO
DUKE POWER CO.
CHARLOTTE, NORTH CAROLINA

DUKE POWER CO.
C/O D.G. BEAM
CATAWBA NUCLEAR STATION
SOUTH CAROLINA HIGHWAY 274
NEWPORT, SOUTH CAROLINA

MARKS
NNI / CORPN. - JOB ORDER 451-N (NNS JO 5024-A)

DATE	ROUTE	CHARGES
2/28/77	ROSS TRUCKING CO.	PREPAID
CARRIER TRAILER DC59	NUMBER PACKAGES 14 -PCS.	XXXXX WEIGHT NET WT. 15,980 #

PACKAGES	CONTENTS
	6 - DOME INSERT WELDMENT ASSEMBLIES 111-1 THRU 111-6 DWG. 288113 - "B"
	6 - DOME INSERT WELDMENT ASSEMBLIES 111-7 THRU 111-12 DWG. 288113 - "B"
	1 -SHELL INSERT WELDMENT ASSEMBLY 113-1 -DWG. 288229
	1 - SHELL INSERT WELDMENT ASSEMBLY 113-2 - DWG. 288229
	AS PER LIST ATTACHED.
	ORDER NOT COMPLETE

LESS DUNNAGE 160
NET 15,980

COPY TO:-

2-CC. CATAWBA NUCLEAR STATION, P.O. BOX 223, CLOVER, SOUTH CAROLINA 29770
ATTEN: D.S. BEAM
1-CC. FRANK H BEARD, JR., NNI, BLDG. 86
2-CC. J.C. NEFF, ACCOUNTS PAYABLE, NNI, BLDG. 520, 4TH FLOOR
1-CC. R. MACLAUCHLIN W/COPY B/L - NNI, BLDG. 520, 4TH FLOOR
1-CC. JIM MITCHELL, X10, BLDG. 211
1-CC. 073 ACCOUNTS RECEIVABLE

SPES TO	ID	QA	SD	CEXX	R & S		SHIPMENT NUMBER
							5024-A-175

TLNNICO
Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

SHIP-OUT INSPECTION REPORT

FINAL INSPECTION OF MATERIAL LISTED HAS BEEN COMPLETED AND IS RELEASED FOR SHIPMENT

☒ COMPANY FURN. MAT'L. ☐ CUSTOMER FURN. MAT'L. ☐ OTHER

P.O.	FILE NO.
5024-A	X12-313
INSPECTION DATE 2-15-77	DATE 2-16-77

DWG. NO.	DWG. ITEM	P.O. ITEM	QTY	DESCRIPTION
				SHELL INSERT WELDMENT CONSISTING OF THE FOLLOWING ITEMS.
288229 △				
ASSY 113-1	11301		1	INSERT PLT. 75 NNI 256
	11302		1	PENETRATION 75 NNI 036

APPROVED BY QA
V M Rains 3-11-77
APPROVED BY DATE

THIS COMPLETES (PARTIALLY COMPLETES) N/A REV. —
THIS CLEARS (PARTIALLY CLEARS) NR N/A DATED —

APPLICABLE INSPECTIONS

EACH CHECKED INSPECTION HAS BEEN PERFORMED ON EACH ITEM LISTED ABOVE

VISUAL INSPECTION
☑ MARKING
☑ SURFACE CLEANLINESS
☐ GRADE
☒ AS REC'D FOR SHIPOUT
☐ PRIM. CLEAN TAG
☐ PLUG WARNING TAG
DIMENSIONAL INSP.
☐ WELD PREP
☑ OVERALL

DOCUMENTATION
☒ MANUFACTURE CERT.
☐ SHIPPING PAPERS
☐ EQUIPMENT HISTORY

OTHER (SPECIFY)

SHIPPING TRANSPORTATION: TRUCK-MOSS TRAILER DC59
REMARKS: D.J. Long

APPLICABLE DATA

NNI CHARGE/P.O./J.O. NO.	NNI SHIPMENT NO.
451-N	172 (5024-A-175)

SHIPPED TO
DUKE POWER COMPANY ATTN: D.G. BEAM
CATAWBA NUCLEAR STATION
NEWPORT, SOUTH CAROLINA

ENGINEERING INSTRUCTION	REV.
451-NE-3001	B
QA INSPECTOR: James E. Sullivan	DATE 2-17-77
CUSTOMER INSPECTOR: Milton Walker	DATE 2-22-77
AUTHORIZED INSPECTOR N/A	DATE

DISTRIBUTION
2-NNI RECORDS CENTER
1-DUKE POWER COMPANY (DOCUMENTATION PACKAGE)
1-NNI QA, BLDG 86, 3RD FLOOR

37

DUKE POWER COMPANY
QUALITY ASSURANCE DEPARTMENT
SUPPLIER QUALITY ASSURANCE CERTIFICATION

Name of Supplier Newport News Industrial Corporation Date FEBRUARY 23, 1977

Address of Supplier Plant 230 41st Street Mill Power Order No. A-98512

Newport News, Virginia 23607 Duke Item or Req. No. 1144.09-1

Spec. No. CNS-1144.09-1 Rev. 4

Supplier ID Nos. As noted per attached Shipout Inspection Reports X12-310,-311,-313 & -314

Description of Component(s) or Material(s) DOME INSERT ASSEMBLIES 111-1 THROUGH 111-12
SHELL INSERT ASSEMBLIES 113-1 & 113-2

___ Attached Documentation covers all Components/Materials on Mill Power Order.
X Attached Documentation covers partial shipment of Components/Materials on Mill Power Order.

The following listed tests, inspections and reports have been completed as required by the specification:

X Physical & Chemical Analysis
___ Hydro (Test Pressure - PSIG _____)
___ Major Repair Records & Charts
X Personnel Qualifications on Record

___ Design Report
X Radiographic Test
___ Penetrant Test
___ Operating Test
X Dimensional Check
___ Stress Report
X Ultrasonic Test
X Repair NDE
___ Performance Curve
X Deviation Record # SEE 1) BELOW
X Heat Treatment
X Magnetic Particle
___ Cleanliness
___ ASME Data Report

1) NONCONFORMITY REPORTS 451-N-X12-7,-35, & M53-4

2) _____

3) _____

This certifies that the listed Component(s) or Material(s) conform to the requirements of the above referenced Duke Power document, including all codes, standards, test requirements and Quality Assurance requirements [illegible].

DUKE POWER CO.
QA RECORDS APPROVED
C. L. Douglas
QA REPRESENTATIVE
DATE 2-8-77

James E. Stafford FOR L.H. HARRISON
Supplier Representative Authorized Signature

Title QA Manager Date 2-23-77

(See Instructions)

Form 930.1A / Rev. 3

CP-129

PACKAGING AND SHIPPING REQUIREMENTS

Specification No. CNS-1144.09-1 Date FEBRUARY 23, 1977

1. ITEM CLASSIFICATION (ANSI N45.2.2 - 1972)

Level A B C D Special
Special _____

2. PACKAGING (ANSI N45.2.2 - 1972, Section 3 and Appendix A3)

Level A B C D Special
Special Instructions _____

3. SHIPPING (ANSI N45.2.2 - 1972, Section 4.2)

Carrier Open Closed Special
Special Instructions _____

Shipment via Train Truck Plane Barge Ship Other

Description of other means _____

4. LOADING & TRANSIT (ANSI N45.2.2 - 1973, Section 4.3)

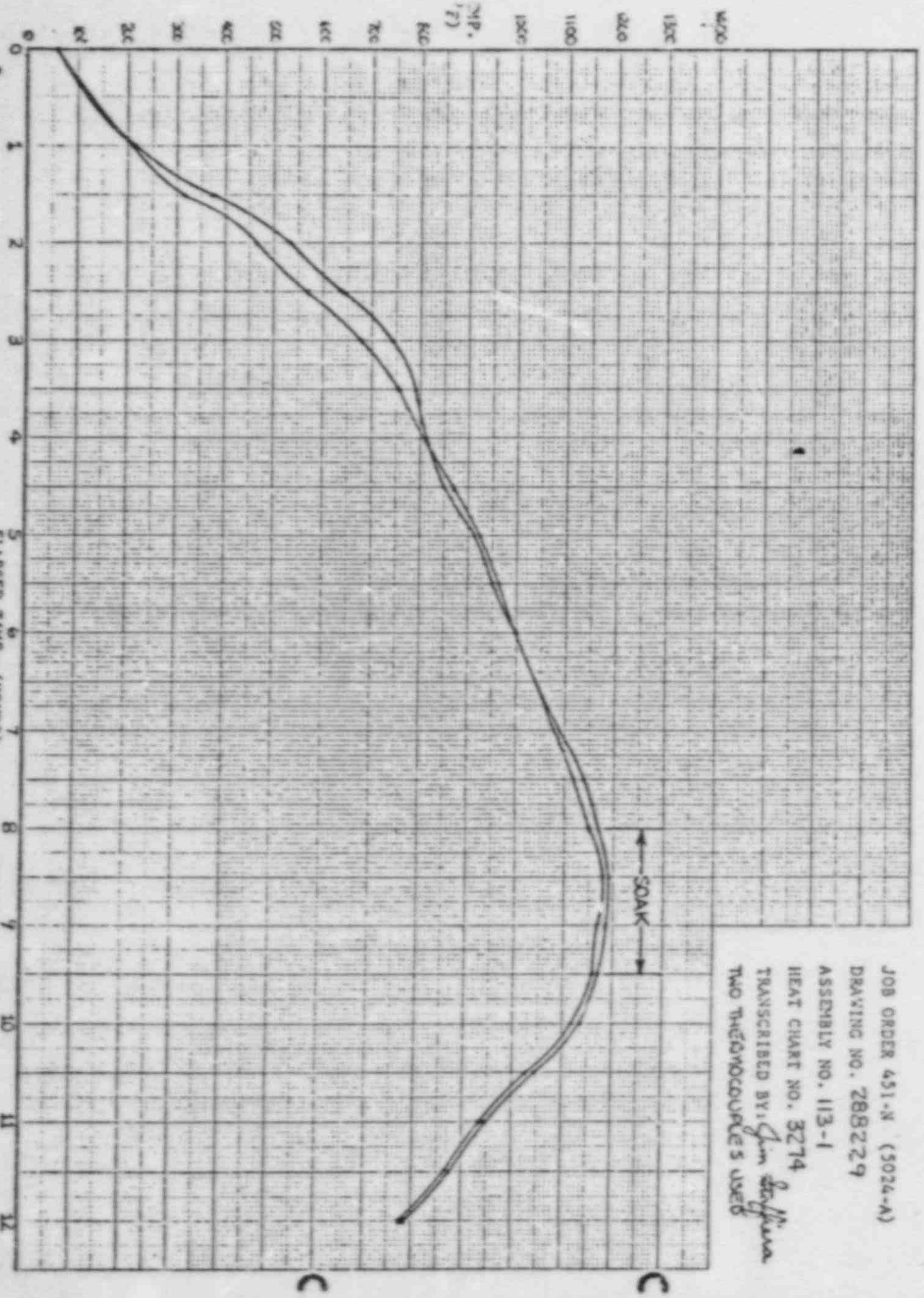
Special instructions for loading, rigging, handling, preservative coatings, seals, stacking and vandalism precautions
Newport News Industrial Corporation Instruction 451-NC-S001

5. IDENTIFICATION AND MARKING (ANSI N45.2.2 - 1972, Appendix A3.9)

Item Markings Newport News Industrial Corporation drawing and item/assembly numbers and Quality Control numbers

Container Markings Uniform freight classification rules

Form 301.4



K-E 10 X 10 TO THE CENTIMETER 18 X 25 CM. KEUFFEL & ESSER CO. MADE IN U.S.A.

46 1512

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

NDE RECORD

OFF# 110, 130, 160, 190, 22-

JOB ORDER NO.	DWG. NO.	REV.	MII NO. 240 5260
5024A	288229	—	451-ER-X10-45
JOB ORDER LOCATION	INSPECTOR		DATE
SUB SHOP	D.J. Long 2-11-77		12-8-76

JOINT NO. ASSY 113	BASE MATERIAL ITEM TO ITEM		PLATE	*PIPE	FIT-UP	APPLICATION REQUIRING NDE	NDE ACCOMPLISHED TYPE	INSPECTOR/ LEVEL	DATE
113-1	11302	11301	x		DJL 12-8-76	FINAL A-SIDE	MT	Boyd II	1-19
"	"	"	x		"	B-SIDE ROOT	MT	Fault II	1/11/
"	"	"	x		"	1ST PASS B-SIDE	MT	Pettaway II	1/11/
"	"	"	x		"	FINAL B-SIDE	MT	Pettaway II	1/24
113-1	11302	11301	x			FINAL A-SIDE	UT	Buchanan II	1-14-
"	"	"	x			FINAL B-SIDE	UT	Buchanan II	1-14-
*	11301 11302	—	x			BASE METAL EXCAVATION	MT	Kelly II	2-9-
	"	—	x			FINAL	MT	Kelly II	2-9-

* INDICATE ACTUAL WALL THICKNESS FOR PIPE JOINTS THAT REQUIRE RT

REMARKS:
SEAM# 1-13-1 30" 113-1
QC# 75MM 256 INSERT
OR# 75MM 256 PERIT.
* BASE METAL REPAIRS (TEMP. ATTACHMENTS) APPROX 13 PLACES

COMPLETE AND IN ACCORDANCE WITH DRAWING AND PROCEDURES

WELDING SUPERVISOR
L. Norman 2-11-77

INSPECTION SUPERVISOR
J.T. Bell 2/12/77

9895

RECORDS CENTER

ULTRASONIC TEST DATA

NN FORM 2371 (REV. 1)

HULL	FR	ORIENTATION NO.	STRUCTURE	DATE
5024A	—	REF. FIGURES	113-1 A-1 PCHAT. UNIT #1 ASSY 113	1-14-77

PROCEDURE	TEST SURFACE	MATERIAL	THICKNESS	STATUS
X03-7-241	A & B	MS.	1 1/4	0

INSTRUMENT: TYPE 702-4, NO. 721171
TRANSDUCER NO.: TYPE 256, FREQ. 2.25, SIZE 3/4 x 1", ANGLE 45°
CAL. BLOCK: NO. —

LOCATION	LENGTH	DEPTH	ZONE LOCATION	MAX. SIG.	BEAM DIRECTION	INDICATED DEFECT TYPE	DISPOSITION	REMARKS
								23 1/2" Longs
					TF		0	0-1
22 7/8	7/8	1"	3	40	TF	S	0	1-2
					TF		0	2-3
3 1/2	1 5/8	1"		50	TF	S	0	3-0
					L		0	

5 OB DIFF.

LOC. OF STENCILING: FWD / AFT / TOP / BOTTOM / INBD / OUTBD (circled) / PORT / STBD

MODE USED: 1ST HALF / 2ND HALF (checked) / 1ST HALF / 2ND HALF — 1ST MODE / 1ST MODE / 2ND MODE / 2ND MODE

DEFECT TYPE: R – WELD REINFORCEMENT; D – DELAMS – LAMINAR; S – STRUCTURE; L – LACK OF FUSION; N – INCLUSION; C – POROSITY; L – CRACK

DISPOSITION: 0 – SATISFACTORY; R – REJECTABLE; 0-R – REJECTABLE PENDING REP. OF N

LENGTH: N = 1/8" OR LESS

BEAM DIRECTION: F – FWD, PORT, IN/UP; A – AFT, STBD, OUT, DOWN; LONGITUDINAL WELD; TRANSVERSE WELD; CO – CIRCUMFERENTIAL

PERFORMED BY: D.J. Buchanan

PART OF LAB. REPORT

Newport News Industrial Corporation
Subsidiary of Newport News Shipbuilding
A Tenneco Company

WELD HISTORY RECORD

JOB ORDER	DWG NO.	REV.	WELD NO.
5024P	288108	B	1-13-1A / 1B

LOCATION	JOINT TYPE	MT I NO.	
SUB SHOP	DOUBLE BEVEL	451-ROC-X10-9	☐ SHOP ☐ INST

BASE MATERIAL: ITEM 13 TO ITEM 13 ☐ PIPE ☒ PLATE ☒ ORIGINAL ☐ ☐ CUT NO. ☐ REPAIR NO.

MAT'L TYPE	SA-516-GR60	SA-516-GR60
QC CONTROL NO	75ANI 036	75ANI 036
ACTUAL THK.	1.234	1.248

WELDING SUPERVISOR: [illegible] DATE 10-5-75
FIT UP INSPECTOR: D.J. Long DATE 10-3-75

WELDER	ELEC. TYPE	SIZE	QC CONTROL NO.	LAYER NO. THK. REPAIR NO.	PRE. HT.	INT. PASS	NDE TYPE	INSPECTOR	DATE	TYPE	INSPECTOR	DATE
2108 SMITH	7015	1/8	75ANI 347	[illegible]	SAT	NA						
				Root layer A-side			MPE / MT	[illegible]	10-7-75		BACK GOUGED SURFACE	
				1st pass B-side			MPE / MT	[illegible]	10-10-75			
		5/32	75ANI 348	FINAL A+B		SAT	Final / MT	[illegible]	10-13-75	RES RT	LEVEL I [illegible]	10-17
		3/16	75ANI 349									
				EXCAVATION B-SIDE			MPE / MT	[illegible]	10-15-75			
2108 SMITH	7015	1/8	75ANI 349	B-SIDE	SAT	NA	MPE / MT	[illegible]	10-17-75	RT	LEVEL II [illegible]	10-1

REMARKS:

COMPLETE & IN ACCORDANCE WITH DWG. & PROCEDURES
D.J. Long 12-3-75

Form 1-461

RADIOGRAPHIC TECHNIQUE — Remarks on back

DATE 10-16-75

502A — | 1-2 | Penetration (Cont'd)

13-13 288-108B 1-13-1A+B

0 | Irid | I-52 | 73

RS | — | N341-441 | M5

2 1/4 min | 1 1/4 | 1 1/2 | 3/4 ASTM | 7x17 1/4

F/S | 20

Voglezade | 514

ACCEPTED ☐ MT ☐ GR/RT ☐ RET ☐ REP ☑ VIR ENCL. ☐

REASON: Slag 3"

N341/441

Lev 2 [illegible]

RADIOGRAPHIC TECHNIQUE — Remarks on back

DATE 10-22-75

5024A — | 1-2 | Penetration

13-13 L13-1A+B 288-108B

R1 | Ind 192 | 1/8x1/8 | I-50 | 66

R-49 | — | N341/441 | M-0

3 3/4 min | 1 1/4 | 1 7/16 | 30 | 13/16

SOURCE POSITION | 90° | 00" | 22 | 7x17

EXPOSED BY Hopson | 514 | 12"

ACCEPTED ☑ MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL. ☐

341/441

Lev 2 [illegible]

OCT 22 1975

RADIOGRAPHIC TECHNIQUE — Remarks on back

DATE 10-16-75

5024A — | 2-3 | Penetration (Cont'd)

13-13 288-108B 1-13-1A+B

0 | Irid | I-52 | 73

RS | — | N341-441 | M5

2 1/4 min | 1 1/4 | 1 1/2 | 3/4 ASTM | 1/4

F/S | 20 | 22 | 7x17

Voglezade | 220 | 6

ACCEPTED ☑ MT ☐ GR/RT ☐ RET ☐ REP ☐ VIR ENCL. ☐

N341/441

Lev 2 [illegible]

OCT 17 1975

PENETRATION SEAM

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6854 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23502 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M113

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date 1974, Case No. Summer Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows
(Brief description of service for which component was designed)

Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code.

3) Material description on attached Sheet 2 of 2.

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 11/15 19 77 Signed Temp Flex Division (Manufacturer) By R.L. Jordan
R.L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at

Stress analysis report on file at

Design specifications certified by Prof. Eng. State Reg. No.

Stress analysis report certified by Prof. Eng. State Reg. No.

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/15 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 11/15 19 77

J.F. Manion Commissions 1107 California Conm. No.
Inspector's Signature J.F. Manion 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 1-3 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6854 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23502 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M113

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows: 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve:
54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve: 54.25" O.D. x 1.75" Wl. (before machining),
SA-516 Grade 70.
Attachment Sleeve: 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring: .500" Thk., SA-515 Grade 70.

*Corrected Copy

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6859 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23762 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M261

(c) Applicable ASME Code: Section III, Edition 1974 Summer, Addenda date 1974, Case No. ____ Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows
(Brief description of service for which component was designed)
Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code.
3) Material description on attached Sheet 2 of 2.
* Added .4 to Paragraph NC 3649.

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 12-1-77 19____ Signed Temp Flex Division (Manufacturer) By R.L. Jordan
R.L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ____

Stress analysis report on file at ____

Design specifications certified by ____ Prof. Eng. State ____ Reg. No. ____

Stress analysis report certified by ____ Prof. Eng. State ____ Reg. No. ____

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/11 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 12-1- 19 77

J F Manion
Inspector's Signature J.F. Manion

Commissions 1107 California Comm. No.
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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

*Corrected Copy

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

1. (a) Manufactured by ASSOCIATED PIPING & ENGINEERING CORPORATION
Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6859 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23762 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M261

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows: 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve:
54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve: 54.25" O.D. x 1.75" Wl. (before machining),
SA-516 Grade 70.
Attachment Sleeve: 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring: .500" Thk., SA-515 Grade 70.

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6858 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23754 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M113

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ---- Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows
(Brief description of service for which component was designed)
Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code.
3) Material description on attached Sheet 2 of 2.

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 11/16 19 77 Signed Temp Flex Division (Manufacturer) By R.L. Jordan
R.L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ____

Stress analysis report on file at ____

Design specifications certified by ____ Prof. Eng. State ____ Reg. No. ____

Stress analysis report certified by ____ Prof. Eng. State ____ Reg. No. ____

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/16 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 11/16 19 77

J.F. Manion
Inspector's Signature J.F. Manion

Commissions 1107 California Comm. No.
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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6858 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23754 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M113

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date 1974, Case No. Summer Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows: 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve:
54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve: 54.25" O.D. x 1.75" Wl. (before machining),
SA-516 Grade 70.
Attachment Sleeve: 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring: .500" Thk., SA-515 Grade 70.

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6855 Nat'l Bd. No. ----

(a) Constructed According to Drawing No. D-23510 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M261

(c) Applicable ASME Code: Section III, Edition 1974 Summer, Addenda date 1974, Case No. ____ Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows
(Brief description of service for which component was designed)
Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code.

3) Material description on attached Sheet No. 2 of 2.

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 11/14 19 77 Signed Temp Flex Division By R.L. Jordan
(Manufacturer)

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ____

Stress analysis report on file at ____

Design specifications certified by ____ Prof. Eng. State ____ Reg. No. ____

Stress analysis report certified by ____ Prof. Eng. State ____ Reg. No. ____

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/14 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 11/14 19 77

J F Manion Commissions 1107 California Comm. No.
Inspector's Signature J.F. Manion 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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6855 Nat'l Bd. No. ----

(a) Constructed According to Drawing No. D-23510 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M261

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows - 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve - 54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve - 54.25" O.D. x 1.75" Wl. (before machining), SA-516 Grade 70.
Attachment Sleeve - 54.5" O.D. x .75" Wl., SA516 Grade 70.

Ring Details:

Split Seal Ring - .500" Thk., SA-515 Grade 70.

*Corrected Copy

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6860 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23770 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M393
Summer

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date 1974, Case No. ____ Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows
(Brief description of service for which component was designed)
Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code.
3) Material description on attached Sheet 2 of 2.
* Added .4 to Paragraph NC 3649.

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 12-1-77 19____ Signed Temp Flex Division (Manufacturer) By R.L. Jordan
R.L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ____

Stress analysis report on file at ____

Design specifications certified by ____ Prof. Eng. State ____ Reg. No. ____

Stress analysis report certified by ____ Prof. Eng. State ____ Reg. No. ____

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/8 1977, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 12-1 1977

J.F. Manion
Inspector's Signature J.F. Manion

Commissions 1107 California Comm. No.
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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6860 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23770 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M393

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows: 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve:
54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve: 54.25" O.D. x 1.75" Wl. (before machining),
SA-516 Grade 70.
Attachment Sleeve: 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring: .500" Thk., SA-515 Grade 70.

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

1. (a) Manufactured by ~~ASSOCIATED PIPING & ENGINEERING CORPORATION~~ Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6856 Nat'l Bd. No. ----

(a) Constructed According to Drawing No. D-23518 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M393

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows Expansion Joint design complies with Paragraph NC 3649 (e) (1) of the Code. 3) Material description on attached Sheet No. 2 of 2.
(Brief description of service for which component was designed)

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 11/11 19 77 Signed Temp Flex Division By R. L. Jordan
(Manufacturer) R. L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ____

Stress analysis report on file at ____

Design specifications certified by ____ Prof. Eng. State ____ Reg. No. ____

Stress analysis report certified by ____ Prof. Eng. State ____ Reg. No. ____

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/11 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 11/11 19 77

J F Manion
Inspector's Signature J.F. MANION

Commissions 1107 California Comm. No.
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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

1. (a) Manufactured by ~~ASSOCIATED PIPING & ENGINEERING CORPORATION~~ Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6856 Nat'l Bd. No. ----

(a) Constructed According to Drawing No. D-23518 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M393

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows - 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve - 54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve - 54.25" O.D. x 1.75" Wl. (before machining), SA-516 Grade 70.
Attachment Sleeve - 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring - .500" Thk., SA-515 Grade 70.

Sheet 1 of 2

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured at Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification—Manufacturer's Serial No. of Part H-6857 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23526 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M423 Summer

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date 1974, Case No. ---- Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code. 3) Material description on attached Sheet 2 of 2.
(Brief description of service for which component was designed)

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 11/16 19 77 Signed Temp Flex Division (Manufacturer) By R.L. Jordan
R.L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ----

Stress analysis report on file at ----

Design specifications certified by ---- Prof. Eng. State ---- Reg. No. ----

Stress analysis report certified by ---- Prof. Eng. State ---- Reg. No. ----

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/16 1977, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 11/16 19 77

J.F. Manion
Inspector's Signature J.F. Manion Commissions 1107 California Comm. No.
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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

1. (a) Manufactured by ASSOCIATED PIPING & ENGINEERING CORPORATION
Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6857 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23526 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 1-M423

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows: 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve:
54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve: 54.25" O.D. x 1.75" Wl. (before machining),
SA-516 Grade 70.
Attachment Sleeve: 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring: .500" Thk., SA-515 Grade 70.

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6861 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23778 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M423

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ---- Class 2

3. Remarks: 1) Assembly as a part used in Containment Vessel Penetration. 2) Bellows
(Brief description of service for which component was designed)
Expansion Joint design complies with Paragraph NC 3649.4 (e) (1) of the Code.
3) Material description on attached Sheet 2 of 2.

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 11/15 19 77 Signed Temp Flex Division (Manufacturer) By R.L. Jordan
R.L. Jordan

Certificate of Authorization Expires January 5, 1979 Certificate of Authorization No. 1298

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at ____

Stress analysis report on file at ____

Design specifications certified by ____ Prof. Eng. State ____ Reg. No. ____

Stress analysis report certified by ____ Prof. Eng. State ____ Reg. No. ____

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 California and employed by H.S.B.I.& I.Co. of Hartford, Conn. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 11/15 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial 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 11/15 19 77

J.F. Manion Commissions 1107 California Comm. No.
Inspector's Signature J.F. Manion 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 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3, "Remarks".

FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES*

As required by the Provisions of the ASME Code Rules T-5191

ASSOCIATED PIPING & ENGINEERING CORPORATION

1. (a) Manufactured by Temp Flex Div., 1707 W. Compton Blvd., Compton, CA 90224
(Name and address of Manufacturer of part)

(b) Manufactured for Duke Power Company, P.O. Box 2178, Charlotte, N.C. 28242
(Name and address of Manufacturer of completed nuclear component)

2. Identification-Manufacturer's Serial No. of Part H-6861 Nat'l Bd. No. ---

(a) Constructed According to Drawing No. D-23778 Drawing Prepared by Temp Flex Division

(b) Description of Part Inspected Type I-Main Steam Penetration Assembly. Mark No.: 2-M423

(c) Applicable ASME Code: Section III, Edition 1974, Addenda date Summer 1974, Case No. ____ Class 2

3. REMARKS: (continued)

Materials as follows:

Process Pipe Sub-Assembly:

Flued Head - 54" x 40" x 34" N.P.S., SA-105.
Process Pipe - 31.250" I.D. x 1.510" Min. Wl., SA-106 Grade C.
Guard Pipe - 36.750" I.D. x 1.625" Min. Wl., SA-106 Grade C.

Bellows Sub-Assembly:

Bellows: 2 Ply .036" Thk., SA-240 Type 321.
Inner Center Sleeve, Outer Center Sleeve, and Outer End Sleeve:
54" O.D. x .50" Wl., SA-515 Grade 70.
Inner End Sleeve: 54.25" O.D. x 1.75" Wl. (before machining),
SA-516 Grade 70.
Attachment Sleeve: 54.5" O.D. x .75" Wl., SA-516 Grade 70.

Ring Details:

Split Seal Ring: .500" Thk., SA-515 Grade 70.

7507

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Atwood & Morrill Co., Inc. Salem, Mass.
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, So. Carolina
(Name and Address)
4. Pump or Valve Valve . Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	2-13000	N/A	13000-01-H	2	N/A	1977
(3)	Isolation Valve			Rev.10			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For service in Main Steam Piping System
(Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA216, Gr. WCB	Atwood & Morrill Ltd.	S/N 2-13000
RT#J1357			
Ht. #121			
(b) Forgings			
Cover	SA105	Cann & Saul	S/N 5-13000
Ht. #216077			
Poppet	SA105	Cann & Saul	S/N 3-13000
Ht. #216077			
Pilot Poppet	SA182, Gr. F6	Cann & Saul	S/N 2-13000
Ht. #72613			

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA193, Gr. B7	Jos. Dyson & Sons	Ht. #8088146 Code C99B
Nuts	SA194, Gr. 2H	Jos. Dyson & Sons	Ht. #L04394 Code A94
(d) Other Parts			
* Pipes (2" Sch. 160)	SA106, Gr. B	Braman Dow (U.S. Steel)	Ht. #L20864
* Pipe (1/2" Sch. 160)	SA106, Gr. B	Braman Dow (Leland Tube)	Ht. #M91512
45° Elbow	SA105	Braman Dow (Vogt Mach.)	Ht. #L00281

* Note: These parts comply with the Code for material construction and workmanship, but are not included in design.

9. Hydrostatic test shell 2250 psi.
disc 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition 1971, Addenda Winter 72 (Date), Code Case No. N/A. Date N/A

Signed Atwood & MOrrill Co., Inc. (Manufacturer) by Walter F Emerson 22 Nov 77
Quality Control Manager

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NPV) symbol expires 5-20-80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Thomas F. Wyke

PE State No. Carolina Reg. No. 4870

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B.I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Nov. 25 1977, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Nov. 28, 1977

Gene A Hercian (Inspector)

Commissions N.Y. 2347 (Nat'l Bd., State, Prov. and No.)

ISM7

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Atwood & Morrill Co., Inc. Salem, Mass.
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, So. Carolina
(Name and Address)
4. Pump or Valve Valve. Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	4-13000	N/A	13000-01-H	2	N/A	1977
(3)	Isolation Valve			Rev. 10			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For Service in Main Steam Piping System
(Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA216, Gr. WCG	Atwood & Morrill Ltd.	S/N 4-13000
Ht. #117			
R.T. #J1356			
(b) Forgings			
Cover	SA105	Cann & Saul	S/N 6-13000
Ht. #216077			
Poppet	SA105	Cann & Saul	S/N 6-13000
Ht. #216077			
Pilot Poppet	SA182, Gr. F6	Cann &Saul	S/N 1-13000
Ht. #72613			

(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 5 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.

This form (E00037) may be obtained from the Order Dept., ASME, 345 E. 47 St., New York, N.Y. 10017

FORM NPV-1 (Back)

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA193, Gr. B7	Jos. Dyson & Sons	Ht. #8088146 Code C99B
Nuts	SA 34, Gr. 2H	Jos. Dyson & Sons	Ht. #L04394 Code A94
(d) Other Parts			
* Pipes (2" Sch. 160)	SA106, Gr. B	Braman Dow (U.S. Steel)	Ht. #L20864
* Pipe (1/2" Sch. 160)	SA106, Gr. B	Braman Dow (Leland Tube)	Ht. #M91512
* 45° Elbow	SA105	Braman Dow (Vogt Mach.)	Ht. #L00281
* Note: These parts comply with the Code for material construction and workmanship, but are not included in design.			

9. Hydrostatic test Shell 2250 psi.
Disc 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter 1972 (Date), Code Case No. N/A. Date N/A

Signed Atwood & Morrill Co., Inc. (Manufacturer) by Walter F. Emerson QC Mgr 28 Dec 77

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NPV) symbol expires 5-20-80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) R.E. Miller

PE State So. Carolina Reg. No. 4237

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B. I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Dec 28th 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Dec. 28th 19 77

(Inspector)

Commissions Mass 1196 (Nat'l Bd., State, Prov. and No.)

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

1. Manufactured by Atwood & Morrill Co., Inc. Salem, MA
(Name and Address of N Certificate Holder)

2SM5

2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
(Name and Address of Purchaser or Owner)

3. Location of Installation Catawba Nuclear Station, Newport, So. Carolina
(Name and Address)

4. Pump or Valve Valve. Nominal Inlet Size 34" (inch) Outlet Size 34" (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)	34" Main Steam Isolation Valve	N/A	13000-01-H Rev. 11		2	N/A	1978
(2)							
(3)							
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For Service in Main Steam Piping System
(Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)

7. Cold Working Pressure 1500 psi at 100°F.

8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA 216, Gr. WCB	Atwood & Morrill	Ltd. S/N 8-13000
Ht. # 114			
Rt. # K7			
(b) Forgings			
Cover	SA 105	Cann & Saul	S/N 3-13000
Ht. #216077			
Poppet	SA 105	Cann & Saul	S/N 8-13000
Ht.# 216077			
Pilot Poppet	SA 182, Gr. F6	Cann & Saul	S/N 8-13000
Ht. #834649			

(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 5 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 NPV-1 (Back)

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA 193, Gr. B7	Jos. Dyson & Sons	Ht. #8088146 Code C99B
Nuts	SA 194, Gr. 2H	Jos. Dyson & Sons	Ht. #L04394 Code A94
(d) Other Parts			
* Pipe (2" sch-160)	SA 106, Gr. B	Braman Dow (U.S. Steel)	Ht. # L20864
* Pipe (½" sch-160)	SA 106, Gr. B	Braman Dow (Leland Tube)	Ht. # M91512
* 45° Elbow	SA 105	Braman Dow (Vogt Mach.)	Ht. # L00281
* Note: These parts comply with the Code for material construction and workmanship, but are not included in design.			

9. Hydrostatic test 2250 psi. Disk Differential test pressure 1500 psi.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter 1972 (Date), Code Case No. N/A. Date N/A

Signed Atwood & Morrill Co., Inc. (N Certificate Holder) by Walter F. Emerson 27 June 78
Quality Control Manager

Our ASME Certificate of Authorization No. N1766 to use the N (N) symbol expires 5-20-80 (Date)

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) R.E. Miller

PE State So. Carolina Reg. No. 4237

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B.I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on JUNE 27 19 78, and state that to the best of my knowledge and belief, the N Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 JUNE 27 19 78.

Albert Evans (Inspector) Commissions MA1222 (Nat'l Bd., State, Prov. and No.)

1SM5

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Atwood & Morrill Co., Inc. Salem, Mass.
   (Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
   (Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, So. Carolina
   (Name and Address)
4. Pump or Valve Valve . Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	3-13000	N/A	13000-01-H	2	N/A	1978
(3)	Isolation Valve			Rev. 10			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For Service in Main Steam Piping System
   (Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body Ht. #112 R.T. #J1355	SA216, Gr. WCB	Atwood & Morrill Ltd.	S/N 3-13000
(b) Forgings			
Cover Ht. #216077	SA105	Cann & Saul	S/N 2-13000
Poppet Ht. #216077	SA105	Cann & Saul	S/N 1-13000
Pilot Poppet Ht. #72613	SA182, Gr. F6	Cann & Saul	S/N 3-13000

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA193, Gr. B7	Jos.Dyson & Sons	Ht. #8088146 Code C99B
Nuts	SA194, Gr. 2H	Jos.Dyson & Sons	Ht. #L04394 Code A94
(d) Other Parts			
* Pipes (2" Sch .160)	SA106, Gr. B	Braman Dow (U.S.Steel)	Ht. #L20864
* Pipe (1/2"Sch.160)	SA106, Gr. B	Braman Dow (Leland Tube)	Ht. #M91512
* 45° Elbow	SA105	Braman Dow (Vogt Mach.)	Ht. #L00281
* Note: These parts comply with the Code for material construction and workmanship, but are not included in design.			

9. Hydrostatic test Shell 2250 psi.
Disc 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter 1972 (Date), Code Case No. N/A. Date N/A

Signed Atwood & Morrill Co., Inc. (Manufacturer) by Walter F. Omera QC Mgr 18 Jan 78

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NFV) symbol expires 5-20-80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co. Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) R.E. Miller

PE State So.Carolina Reg. No. 4237

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B. I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Jan. 18th 1978, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Jan. 18th 1978

M. Lizie (Inspector) Commissions Mass. 1196 (Nat'l Bd., State, Prov. and No.)

2SM3

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Atwood & Morrill Co., Inc. Salem, MA
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
(Name and Address of Purchaser or Owner)
3. Location of Installation CATAWBA Nuclear Station, Newport, So. Carolina
(Name and Address)
4. Pump or Valve Valve. Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	5-13000	N/A	13000-01-H	2	N/A	1978
(3)	Isolation Valve			Rev. 10			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For service in Main Steam Piping System
(Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA216,GR. WCB	Atwood & Morrill LTD	S/N 5-13000
HT# 125			
RT# J1413			
(b) Forgings			
Cover	SA 105	Cann & Saul	S/N 1-13000
HT# 216077			
Poppet	SA 105	Cann & Saul	S/N 5-13000
HT# 216077			
Pilot Poppet	SA 182, GR. F6	Cann & Saul	S/N 5-13000
HT# 834649			

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA 193, GR. B7	Jos. Dyson & Sons	HT # 8088146 Code C99B
Nuts	SA 194, GR. 2H	Jos. Dyson & Sons	HT # L04394 Code A94
(d) Other Parts			
*Pipes(2"sch-160)	SA 106, GR. B	Braman Dow (U.S. Steel)	HT # 20864
*Pipe(½"sch-160)	SA 106, GR. B	Braman Dow (Leland Tube)	HT # M91512
*45° Elbow	SA 105	Braman Dow (Vogt Mach.)	HT # L00281
*NOTE: These parts comply with the Code for Material Construction and Workmanship, but are not included in design.			

9. Hydrostatic test shell 2250 psi.
disc. 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter, 1972 (Date), Code Case No. N/A. Date N/A

Signed Atwood & Morrill Co., Inc. (Manufacturer) by Walter F. Emerson QC Mgr 3-6-78

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NPV) symbol expires 5-20-80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) R.E. Miller

PE State So. Carolina Reg. No. 4237

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B.I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Feb. 3rd 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Feb 3rd 1978

[signature] (Inspector) Commissions Mass. 1196 (Nat'l Bd., State, Prov. and No.)

ISM3

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Atwood & Morrill Co., Inc. Salem, MA
   (Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
   (Name and Address of Purchaser or Owner)
3. Location of installation CATAWBA Nuclear Station, Newport, So. Carolina
   (Name and Address)
4. Pump or Valve Valve. Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	6-13000	N/A	13000-01-H	2	N/A	1978
(3)	Isolation Valve			Rev. 10			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For service in Main Steam Piping System
   (Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA 216, GR. WCB	Atwood & Morrill LTD.	S/N 6-13000
HT # 132			
RT # J1414			
(b) Forgings			
Cover	SA 105	Cann & Saul	S/N 8-13000
HT # 215759			
Poppet	SA 105	Cann & Saul	S/N 4-13000
HT # 216077			
Pilot Poppet	SA 182, GR. F6	Cann & Saul	S/N 6-13000
HT # 834649			

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA 193, GR. B7	Jos. Dyson & Sons	HT # 8088146
			Code C998
Nuts	SA 194, GR. 2H	Jos. Dyson & Sons	HT # L04394
			Code A94
(d) Other Parts			
*Pipes(2"sch-160)	SA 106, GR. B	Braman Dow (U.S. Steel)	HT # L20864
*Pipe($\frac{1}{2}$" sch-160)	SA 106, GR. B	Braman Dow (Leland Tube)	HT # M91512
*45° Elbow	SA 105	Braman Dow (Vogt Mach.)	HT # L00281

* NOTE: These parts comply with the Code for Material Construction and Workmanship, but are not included in design.

9. Hydrostatic test shell 2250 psi.
Disc. 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter, 1972 (Date), Code Case No. N/A. Date N/A

Signed Atwood & Morrill Co., Inc. (Manufacturer) by Walter F. [illegible] QC Mgr 25 Jan 78

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NPV) symbol expires 5-20-80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) R.E. Miller

PE State So. Carolina Reg. No. 4237

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B.I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Jan. 26th 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Jan 26th 19 78

[signature] (Inspector)

Commissions Mass. 1196 (Nat'l Bd., State, Prov. and No.)

ISM-1

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*
(As Required by the Provisions of the ASME Code, Section III, Div. 1)

1. Manufactured by Atwood & Morrill Co., Inc. Salem, Mass.
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, So. Carolina
(Name and Address)
4. Pump or Valve Valve. Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	1-13000	N/A	13000-01-H	2	N/A	1977
(3)	Isolation Valve			Rev.10			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For Service in Main Steam Piping System
(Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class ____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA216, Gr. WCB	Atwood & MOrrill Ltd.	S/N 1-13000
Ht. #103			
RT #16674C-001			
RT #J1718			
(b) Forgings			
Cover	SA105	Cann &Saul	S/N 7-13000
Ht. #216077			
Poppet	SA105	Cann &Saul	S/N 2-13000
Ht. #216077			
Pilot Poppet	SA182, Gr. F6	Cann & Saul	S/N 4-13000
Ht. #72613			

(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 5 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 NPV-1 (Back)

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting				
	Studs	SA193, Gr. B7	Jos. Dyson & Sons	Ht. #8088146 Code C998
	Nuts	SA194, Gr. 2H	Jos. Dyson & Sons	Ht. #L04394 Code A94
(d) Other Parts				
*	Pipes (2" Sch. 160)	SA106, Gr. B	Braman Dow (U.S. Steel)	Ht. #L20864
*	Pipe (½" Sch. 160)	SA106, Gr. B	Braman Dow (Leland Tube)	Ht. #M91512
*	45° Elbow	SA105	Braman Dow (Vogt Mach.)	Ht. #L00281

* Note: These parts comply with the Code for material construction and workmanship, but are not included in design.

9. Hydrostatic test Shell 2250 psi.
Disc 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter 1972 (Date), Code Case No. N/A, Date N/A

Signed Atwood & Morrill Co., Inc. (Manufacturer) by Walter F. Emmons QC Mgr 19 Dec 77

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NPV) symbol expires 5-20-80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Thomas F. Wyke

PE State No. Carolina Reg. No. 4870

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B.I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Dec. 20th 19 77, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Dec 20 19 77

M Pine (Inspector)

Commissions Mass 1196 (Nat'l Bd., State, Prov. and No.)

2SM-1

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Atwood & Morril Co., Inc., Salem, MA
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply Co., Charlotte, No. Carolina
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, So. Carolina
(Name and Address)
4. Pump or Valve Valve . Nominal Inlet Size 34" (inch) Outlet Size 34"

	(a) Model No. Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	34" Main Steam	7-13000	N/A	13000-C1-H	2	N/A	1978
(3)	Isolation Valve			Rev. 11			
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. For service in Main Steam Piping System
(Brief description of service for which equipment was designed)

6. Design Conditions 1185 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class _____ (1)
7. Cold Working Pressure 1500 psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body	SA216, GR. WCB	Atwood & Morrill Ltd	S/N7-13000
HT # 127			
HT # J1435			
(b) Forgings			
Cover	SA105	Cann & Saul	S/N4-13000
HT # 216077			
Poppet	SA105	Cann & Saul	S/N7-13000
HT # 216077			
Pilot Poppet	SA182, GR. F6	Cann & Saul	S/N7-13000
HT # 834549			

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
Studs	SA193, GR. B7	Jos. Dyson & Sons	HT#8088146 Code C99B
Nuts	SA194, GR. 2H	Jos. Dyson & Sons	HT#L04394 Code A94
(d) Other Parts			
* Pipes(2" sch-160)	SA106, GR. B	Braman Dow (U.S. Steel)	HT #L20864
* Pipe($\frac{1}{2}$" sch-160)	SA106, GR. B	Braman Dow (Leland Tube)	HT #M91512
* 45° Elbow	SA105	Braman Dow (Vogt Mach)	HT #L00281
* NOTE: These parts comply with the code for material construction and workmanship, but are not included in design.			

9. Hydrostatic test shell 2250 psi.
disc 1500

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. I., Edition 1971, Addenda Winter 1972 (Date), Code Case No. N/A. Date N/A

Signed Atwood & Morril Co., Inc. (Manufacturer) by Walter F. Emerson QC Mgr 28 Feb 78

Our ASME Certificate of Authorization No. N1766 to use the N (N) (NFV) symbol expires 5/20/80 (Date).

CERTIFICATION OF DESIGN

Design information on file at Mill Power Supply Co., Charlotte, No. Carolina

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) R.E. Miller

PE State So. Carolina Reg. No. 4237

Stress analysis certified by (1) N/A

PE State N/A Reg. No. N/A

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Massachusetts and employed by H.S.B.I. & I. Co. of Hartford, Conn. have inspected the pump, or valve, described in this Data Report on Feb. 28th 19 78 and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 Feb. 28th 1978

J Pine (Inspector)

Commissions Mass. 1196 (Nat'l Bd., State, Prov. and No.)

1CF60

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Nuclear Valve Division of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA Order No. 46763
(Name & Address of Manufacturer)

2. Manufactured for Mill Power Supply/Duke Power Company P.O. Box 1339, Charlotte, North Carolina Order No. C 23593
(Name and Address)

3. Owner Catawba Nuclear Station

4. Location of Plant Newport, South Carolina 28710

5. Pump or Valve Identification NVD P/N 74040, 18 Inch Feedwater Isolation Valve, CS, 900#

Serial Number 31311 (1 Valve)
(Brief description of service for which equipment was designed)

(a) Drawing No. 74040 Prepared by Nuclear Valve Division of Borg Warner

(b) National Board No. 1065

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 2

Edition 1974, Addenda Date Winter '74, Case No. N/A

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate-Code 2P83	SA351 CF8M	Pacific Metals	
(b) Forgings			
Body-Code 1Q22	SA105	Gulf Forge	
Bonnet-Code 1Q20	SA105	Compton Forge	
Neck-Code 1R36	SA105	Compton Forge	
Retainer-Code 1R44	SA105	Gulf Forge	

*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, 5a and 5b 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.

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting	N/A			
(d) Other Parts	N/A			

8. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at NVD of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA 91409

Stress analysis report on file at N/A

Design specifications certified by Thomas F. Wyke (1) Prof. Eng. State N.C. Reg. No. 4870

Stress analysis report certified by N/A (1) Prof. Eng. State _____ Reg. No. _____

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date August 17 19 78 Signed Nuclear Valve Division of Borg Warner (Manufacturer) By [signature]

Certificate of Authorization No. N-1254 expires October 27, 1978.

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 of Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill. have inspected the equipment described in this Data Report on August 17 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neithe the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 August 17 19 78

[signature] (Inspector) Commissions CA 1406 NB 8026 (National Board, State, Province and No.)

2CF60

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Nuclear Valve Div. of Borg Warner, 7500 Tyrone Ave., Van Nuys, Ca.
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply/Duke Power Co., P.O. Box 1339, Charlotte, N.C.
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, South Carolina 28710
(Name and Address)
4. Pump or Valve FeedWater Isolation. Nominal Inlet Size 18 (inch) Outlet Size 18

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	900#	31315	N/A	74040	2	1131	1978
(3)	Motor Op.						
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. The valves are designed to handle a fluid media which includes steam, water condensate, borated water, etc., associated with a PWR and BWR. The temperature pressure rating of the media is stated below.
(Brief description of service for which equipment was designed)

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class N/A (1)
7. Cold Working Pressure N/A psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate-Code 2N12	SA 351 CF8M	Pacific Metals	
(b) Forgings			
Body-Code 1Q22	SA 105	Gulf Forge	
Bonnet-Code 1Q20	SA 105	Compton Forge	
Neck-Code 1R36	SA 105	Compton Forge	
Retainer-Code 1R44	SA 105	Gulf Forge	

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting N/A			
(d) Other Parts N/A			

8. Hydrostatic test 3250 psi.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition 1974, Addenda Winter '74 (Date), Code Case No. N/A. Date N/A

Signed Nuclear Valve Div. of Borg-Warner (Manufacturer) by [signature]

Our ASME Certificate of Authorization No. N1254 to use the N (N) (NPV) symbol expires 10/27/78 (Date).

CERTIFICATION OF DESIGN

Design information on file at Nuclear Valve Div. of Borg-Warner, 7500 Tyrone Av., V.N. Ca.

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Thomas F. Wyke

PE State N.C. Reg. No. 4870

Stress analysis certified by (1) N/A

PE State _____ Reg. No. _____

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill, have inspected the pump, or valve, described in this Data Report on September 7 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 September 7 19 78

[signature] (Inspector)

Commissions NB 226 CA1406 (Nat'l Bd., State, Prov. and No.)

1CF51

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Nuclear Valve Division of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA Order No. 46763
(Name & Address of Manufacturer)

2. Manufactured for Mill Power Supply/Duke Power Company P.O. Box 1339, Charlotte, North Carolina Order No. C23593
(Name and Address)

3. Owner Catawba Nuclear Station

4. Location of Plant Newport, South Carolina 28710

5. Pump or Valve Identification NVD P/N 74040, 18 Inch Feedwater Isolation Valve, CS, 900#
Serial Number 31310 (1 Valve)
(Brief description of service for which equipment was designed)

(a) Drawing No. 74040 Prepared by Nuclear Valve Division of Borg Warner

(b) National Board No. 1060

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 2

Edition 1971, Addenda Date Summer '73, Case No. N/A

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate-Code 2P93	SA351 CF8M	Pacific Metals	
(b) Forgings			
Body-Code 1Q82	SA105	Gulf Forge	
Bonnet-Code 1Q20	SA105	Compton Forge	
Neck-Code 1R36	SA105	Compton Forge	
Retainer-Code 1R44	SA105	Gulf Forge	

*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, 5a and 5b 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.

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting				
	N/A			
(d) Other Parts				
	N/A			

8. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at NVD of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA 91409

Stress analysis report on file at N/A

Design specifications certified by Thomas F. Wyke (1) Prof. Eng. State N.C. Reg. No. 4870

Stress analysis report certified by N/A (1) Prof. Eng. State _____ Reg. No. _____

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date August 9 19 78 Signed Nuclear Valve Division of Borg Warner (Manufacturer) By Steve Campion

Certificate of Authorization No. N-1254 expires October 27, 1978.

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 of Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill. have inspected the equipment described in this Data Report on August 9 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 August 9 19 78

(Inspector) Commissions NB 8026 04 1406 (National Board, State, Province and No.)

Attachment #1

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Nuclear Valve Division of Borg Warner, 7500 Tyrone Ave., Van Nuys, Ca. Order No. 46763
(Name & Address of Manufacturer)

2. Manufactured for Mill Power Supply/Duke Power Company P.O. Box 1339, Charlotte, North Carolina Order No. C23593
(Name and Address)

3. Owner Catawba Nuclear Station

4. Location of Plant Newport, South Carolina 28710

5. Pump or Valve Identification NVD P/N 74040, 18 Inch Feedwater Isolation Valve, CS, 900# Serial Number 31310 (1 Valve)
(Brief description of service for which equipment was designed)

(a) Drawing No. 74040 Prepared by Nuclear Valve Division of Borg Warner

(b) National Board No. 1060

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 2

Edition 1974, Addenda Date Winter '74, Case No. N/A

*7. Original NPV-1 Dated and Signed August 9, 1978 listed the incorrect Addenda Date.

The items described in #5 were designed and manufactured to the correct Addenda Date listed on this Attachment #1.

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting				
N/A				
(d) Other Parts				
N/A				

8. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at NVD of Borg Warner, 7500 Tyrone Ave., Van Nuys, Ca. 91409

Stress analysis report on file at N/A

Design specifications certified by Thomas F. Wyke (1) Prof. Eng. State N.C Reg. No. 4870

Stress analysis report certified by N/A (1) Prof. Eng. State _____ Reg. No. _____

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date August 25 19 78 Signed Nuclear Valve Division of Borg Warner (Manufacturer) By [signature]

Certificate of Authorization No. N-1254 expires October 27, 1978

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 of Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill. have inspected the equipment described in this Data Report on August 25 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 August 25 19 78

[signature] (Inspector) Commissions 1275 CA · 7669 NB (National Board, State, Province and No.)

2CFS1

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Nuclear Valve Div. of Borg Warner, 7500 Tyrone Ave., Van Nuys, Ca.
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply/Duke Power Co., P.O. Box 1339, Charlotte, N.C.
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, South Carolina 28710
(Name and Address)
4. Pump or Valve FeedWater Isolation. Nominal Inlet Size 18 (inch) Outlet Size 18

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	900#	31314	N/A	74040	2	1130	1978
(3)	Motor Op.						
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. The valves are designed to handle a fluid media which includes steam, water condensate, borated water, etc., associated with a PWR and BWR. The temperature pressure rating of the media is stated below.
(Brief description of service for which equipment was designed)

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class N/A (1)
7. Cold Working Pressure N/A psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate-Code 2P85	SA 351 CF8M	Pacific Metals	
(b) Forgings			
Body-Code 1Q22	SA 105	Gulf Forge	
Bonnet-Code 1Q20	SA 105	Compton Forge	
Neck-Code 1R36	SA 105	Compton Forge	
Retainer-Code 2W93A	SA 105	Jorgensen Steel	

(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 5 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.

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting N/A			
(d) Other Parts N/A			

9. Hydrostatic test 3250 psi.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition 1974, Addenda Winter '74 (Date), Code Case No. N/A. Date N/A

Signed Nuclear Valve Div. of Borg-Warner (Manufacturer) by [signature]

Our ASME Certificate of Authorization No. N1254 to use the N (N) (NPV) symbol expires 10/27/78 (Date).

CERTIFICATION OF DESIGN

Design information on file at Nuclear Valve Div. of Borg-Warner, 7500 Tyrone Av., V.N. Ca.

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Thomas F. Wyke

PE State N.C. Reg. No. 4870

Stress analysis certified by (1) N/A

PE State _____ Reg. No. _____

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill, have inspected the pump, or valve, described in this Data Report on September 6, 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 September 6, 19 78

[signature] (Inspector)

Commissions NB 8026 CA1406 (Nat'l Bd., State, Prov. and No.)

2CF42

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

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

1. Manufactured by Nuclear Valve Div. of Borg Warner, 7500 Tyrone Ave., Van Nuys, Ca.
(Name and Address of Manufacturer)
2. Manufactured for Mill Power Supply/Duke Power Co., P.O. Box 1339, Charlotte, N.C.
(Name and Address of Purchaser or Owner)
3. Location of Installation Catawba Nuclear Station, Newport, South Carolina 28710
(Name and Address)
4. Pump or Valve FeedWater Isolation Nominal Inlet Size 18 (inch) Outlet Size 18

	(a) Model No., Series No. or Type	(b) Manufacturers' Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	900#	31313	N/A	74040	2	1129	1978
(3)	Motor Op.						
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. The valves are designed to handle a fluid media which includes steam, water condensate, borated water, etc., associated with a PWR and BWR. The temperature pressure rating of the media is stated below.
(Brief description of service for which equipment was designed)

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F or Valve Pressure Class N/A (1)
7. Cold Working Pressure N/A psi at 100°F.
8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate-Code 2P66	SA 351 CF8M	Pacific Metals	
(b) Forgings			
Body-Code 1Q22	SA 105	Gulf Forge	
Bonnet-Code 1Q20	SA 105	Compton Forge	
Neck-Code 1R36	SA 105	Compton Forge	
Retainer-Code 1R44	SA 105	Gulf Forge	

(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 5 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.

This form (E00037) may be obtained from the Order Dept., ASME, 345 E. 47 St., New York, N.Y. 10017

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting N/A			
(d) Other Parts N/A			

9. Hydrostatic test 3250 psi.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition 1974, Addenda Winter '74 (Date), Code Case No. N/A. Date N/A

Signed Nuclear Valve Div. of Borg-Warner (Manufacturer) by [signature]

Our ASME Certificate of Authorization No. N1254 to use the N (N) (NFV) symbol expires 10/27/78 (Date).

CERTIFICATION OF DESIGN

Design information on file at Nuclear Valve Div. of Borg-Warner, 7500 Tyrone Av.,V.N. Ca.

Stress analysis report (Class 1 only) on file at N/A

Design specifications certified by (1) Thomas F. Wyke

PE State N.C. Reg. No. 4870

Stress analysis certified by (1) N/A

PE State _____ Reg. No. _____

(1) Signature not required. List name only.

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill, have inspected the pump, or valve, described in this Data Report on September 7 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pump, or valve, in accordance with the ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 September 7 19 78

[signature] (Inspector)

Commissions NB 8026 CA 1406 (Nat'l Bd., State, Prov. and No.)

1CF42

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Nuclear Valve Division of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA (Name & Address of Manufacturer) Order No. 46763

2. Manufactured for Mill Power Supply/Duke Power Company P.O. Box 1339, Charlotte, North Carolina (Name and Address) Order No. C-23593

3. Owner Catawba Nuclear Station

4. Location of Plant Newport, South Carolina 28710

5. Pump or Valve Identification NVD P/N 74040, 18 Inch FeedWater Isolation Valve, 900#, CS, MO Serial Nuzber 31309 (1 Valve)
(Brief description of service for which equipment was designed)

(a) Drawing No. 74040 Prepared by Nuclear Valve Division of Borg Warner

(b) National Board No. 1048

6. Design Conditions 1885 (Pressure) psi 600 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 2

Edition 1974, Addenda Date Winter '74, Case No. N/A

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate -Code 2P91	SA 351 CF8M	Chiang & Assoc.	
(b) Forgings			
Body - Code 1Q22	SA 105	Gulf Forge	
Bonnet - Code 1Q20	SA 105	Compton Forge	
Neck - Code 1R36	SA 105	Compton Forge	
Retainer - Code 1S44	SA 105	Gulf Forge	

*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, 5a and 5b 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.

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting	N/A			
(d) Other Parts	N/A			

8. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at NVD of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA 91409

Stress analysis report on file at N/A

Design specifications certified by Thomas F. Wyke (1) Prof. Eng. State N.C. Reg. No. 4870

Stress analysis report certified by N/A (1) Prof. Eng. State _____ Reg. No. _____

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date August 2 19 78 Signed Nuclear Valve Division of Borg Warner (Manufacturer) By Norman Stevens

Certificate of Authorization No. N-1254 expires October 27, 1978

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 California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill. have inspected the equipment described in this Data Report on August 2 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 August 2 19 78

(Inspector) Manuel B. Diana

Commissions CA 1275 NB 7669 (National Board, State, Province and No.)

2CF33

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Nuclear Valve Division of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA (Name & Address of Manufacturer) Order No. 46763

2. Manufactured for Mill Power Supply/Duke Power Company P.O. Box 1339, Charlotte, North Carolina (Name and Address) Order No. C23593

3. Owner Catawba Nuclear Station

4. Location of Plant Newport, South Carolina

5. Pump or Valve Identification NVD P/N 74040, 18 Inch Feedwater Isolation Valve, CS, 900# Serial Number 31312
(Brief description of service for which equipment was designed)

(a) Drawing No. 74040 Prepared by Nuclear Valve Division of Borg Warner

(b) National Board No. 1064

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 2

Edition 1974, Addenda Date Winter '74, Case No. N/A

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate-Code 2P81	SA351 CF8M	Pacific Metals	
(b) Forgings			
Body-Code 1Q22	SA 105	Gulf Forge	
Bonnet-Code 1Q20	SA 105	Compton Forge	
Neck-Code 1R36	SA 105	Compton Forge	
Retainer-Code 1R44	SA 105	Gulf Forge	

*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, 5a and 5b 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 NPV-1 (back)

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting	N/A			
(d) Other Parts	N/A			

8. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at NVD of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA 91409

Stress analysis report on file at N/A

Design specifications certified by Thomas F. Wyke (1) Prof. Eng. State N.C. Reg. No. 4870

Stress analysis report certified by N/A (1) Prof. Eng. State _____ Reg. No. _____

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date August 17 19 78 Signed Nuclear Valve Division of Borg Warner (Manufacturer) By [signature]

Certificate of Authorization No. N-1254 expires October 27, 1978

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 of Province of California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill. have inspected the equipment described in this Data Report on August 17 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 August 17 19 78

[signature] (Inspector) Commissions NB 8026 CA 1406 (National Board, State, Province and No.)

Printed in U.S.A. (6/72)

This form (E37) is obtainable from the ASME, 345 E. 47th St., New York, N.Y. 10017

1CF33

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES*

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Nuclear Valve Division of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA (Name & Address of Manufacturer) Order No. 46763

2. Manufactured for Mill Power Supply/Duke Power Company P.O. Box 1339, Charlotte, North Carolina (Name and Address) Order No. C-23593

3. Owner Catawba Nuclear Station

4. Location of Plant Newport, South Carolina 28710

5. Pump or Valve Identification NVD P/N 74040, 18 Inch FeedWater Isolation Valve, 900#, CS, MO Serial Number 31308 (1 Valve)
(Brief description of service for which equipment was designed)

(a) Drawing No. 74040 Prepared by Nuclear Valve Division of Borg Warner

(b) National Board No. 1047

6. Design Conditions 1385 (Pressure) psi 600 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 2

Edition 1974, Addenda Date Winter '74, Case No. N/A

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Gate - Code 2P76	SA 351 CF8M	Chiang & Assoc.	
(b) Forgings			
Body - Code 1Q22	SA 105	Gulf Forge	
Bonnet- Code 1Q20	SA 105	Compton Forge	
Neck - Code 1R36	SA 105	Compton Forge	
Retainer - Code 1R44	SA 105	Gulf Forge	

*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items, 1, 3, 5a and 5b 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 NPV-1 (back)

	Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting	N/A			
(d) Other Parts	N/A			

8. Hydrostatic test 3250 psi.

CERTIFICATION OF DESIGN

Design information on file at NVD of Borg Warner, 7500 Tyrone Ave., Van Nuys, CA 91409

Stress analysis report on file at N/A

Design specifications certified by Thomas F. Wyke (1) Prof. Eng. State N.C. Reg. No. 4870

Stress analysis report certified by N/A (1) Prof. Eng. State ____ Reg. No. ____

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date August 2 19 78 Signed Nuclear Valve Division of Borg Warner (Manufacturer) By [signature]

Certificate of Authorization No. N-1254 expires October 27, 1978.

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 California and employed by Lumbermen's Mutual Casualty of Long Grove, Ill. have inspected the equipment described in this Data Report on August 2 19 78, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described 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 August 2 19 78

[signature] Commissions CA 1275 NB 7669

(Inspector) (National Board, State, Province and No.)

Manuel B. Diana

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*
(As Required by the Provisions of the ASME Code Rules)

SHEET 1 OF 4

1. Fabricated by ITT Grinnell Ind. Piping, Inc. Kernersville Order No. 7127 9438 (Pkg 8)
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-34X 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 N-2

Edition 1974, Addenda Date Winter 1974, 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 CT- SM-4D
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 9-12-78 Signed ITT GRINNELL Ind. Piping, Inc. By Thomas A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 N.C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 9-15 1978, 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 Co.

By signing this certificate, neither the Inspector nor his employer makes 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 9-15 1978

Barney E. Bello Commissions N.C. - No. 878
(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".

Printed in U.S.A. (2/73)

ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

QA FORM 6.2.1C

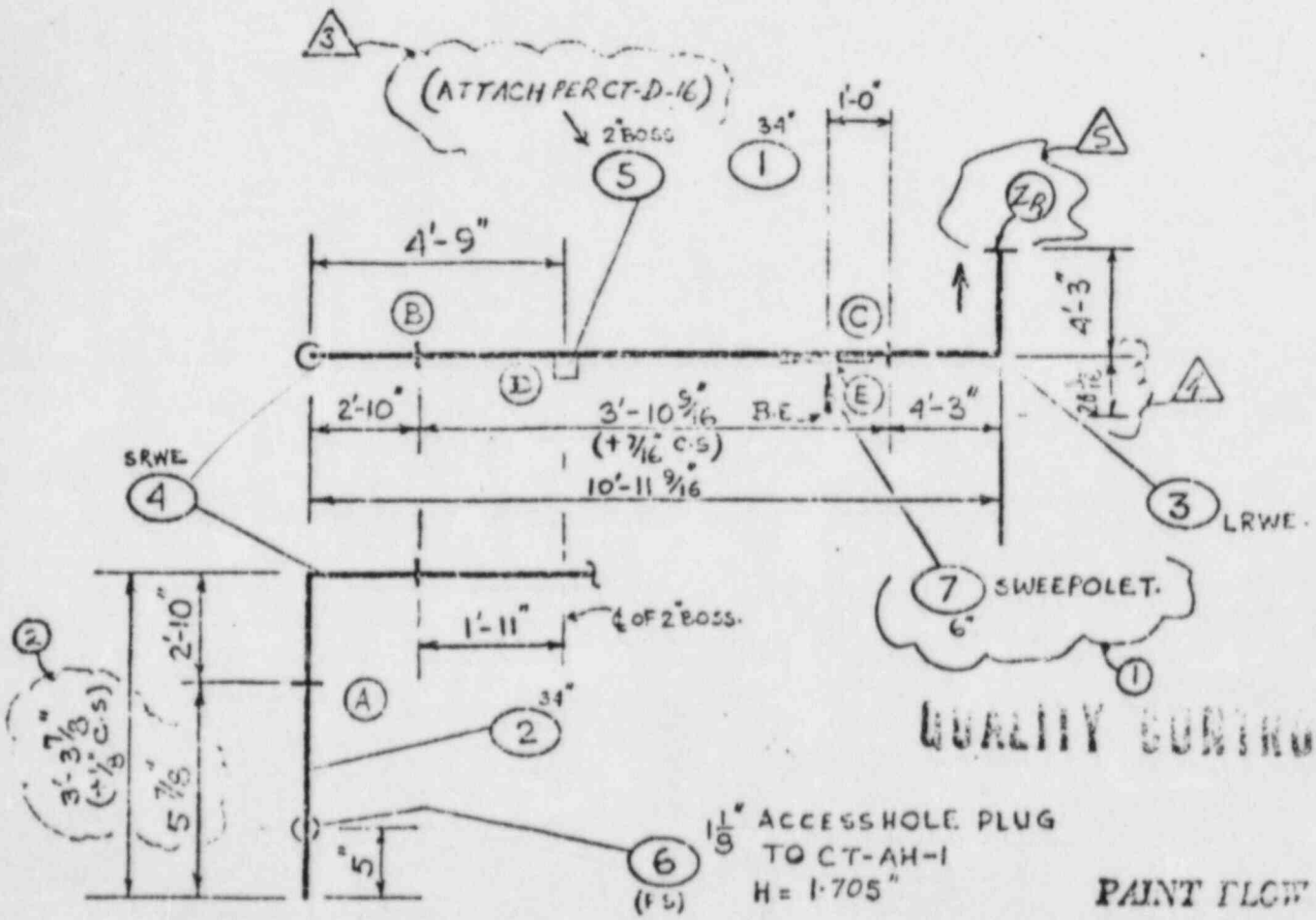
CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1
Charlotte, N.C.
P. O. - C-12517

REDRWN: 10-28-77 CHK'D. PG
REV. (1) SM, 11-11-77 CHK'D PG
REV. (2) SM, 12-14-77 CHK'D PG
REV. (3) SM 5-23-78 CHK'D PG
(4) 10-30-78

SPECIAL MATERIAL
CHECK ALLOCATION SHEETS
BEFORE CUTTING

LENGTH OF ACCESS HOLE PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT—IF REQUIRED.

USE 3'-10 9/16" FROM BARH 18, LOT# 4121
HT.# L 3117, USE BALANCE FOR ITEM# 2.



QUALITY CONTROL

PAINT FLOW ARROWS

MACHINE ENDS
PER SKETCH CT-D-2, EXCEPT AS NOTED.

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5(01) APP. CODE A Sec III Cl 2 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 MAIN STEAM (SM) FAB. SPEC'S. J S 118
REF. DRW'G NO. CN-1331-SM004 (REV 2) PRESS. 1185 PSI. TEMP. 600 °F. WT. 7728 LBS.
(3)
PIECE MARK CT-SM-4D REGISTER CT-01-7AX

GRINNELL INDUSTRIAL PIPING, INC.

Q.A. FORM NO. 1F

Register No. CT-01-34X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 of 24

Revision No. SM Revision Date

DUKE POWER COMPANY
CATAWBA UNIT #1
Charlotte, N.C.
P.O. C-12517

Piece Mark CT-SM-4D Job Name Contract No. 7127 Location

PART NUMBER		DESCRIPTION	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
				HEAT NUMBER	DOCUMENTATION	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
P.B.C.T.C.D. CT-01-11-1	3,4	SYS- MAIN STEAM 31.438" I.D X 1.375" MW. SML'S CS, PIPE TO ASME, SA-106 GR. C.						F			
P.B.C.T.C.D. CT-01-11-1	3,4	——— DITTO ———	0'-5"					F			
L.A.A.T.C.* CT-01-17-1	3,4	31.438" I.D X 1.375" MW, 90° LRWE TO SA-234 WPB-W, MADE FROM SA-515 GR. 70 PLATE, (70,000 PSI TENSILE), OR SA-234 WPC SEAMLESS, ENDS PER DETAIL CT-D-2	1					E			
L.B.A.T.C.* CT-01-16-1	3,4	——— DITTO EXCEPT SRWE,	1					E			
Y.*.A.A.C.E. CT-3002-3	2	2" 3000# CS. SP. WELD BOSS TO SA-105, PER DET. SK. CT-WB-1 (ATTACH TO CT-D-16)	1	ITT GRINNELL IND. PIPING KERNERSVILLE, N.C.				E			

SEE ATTACHED SHEET

Code Nuclear Sec. III, Cl. 2 Class DUKE 'B' △

Job Supplement JS 118 MFG. Code

Nuclear Safety Related

GRINNELL INDUSTRIAL PIPING, INC.

Q.A. FORM 12.1F

H.P.

Register No. CT-01-34X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 24 of 24

Revision No. 3 SM Revision Date

Piece Mark CT-SM-4D Job Name DUKE POWER COMPANY CATAWBA UNIT #1 CHARLOTTE, N.C. P.O. C-12517 Contract No. 7127 Location

SYS. MAIN STEAM

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENT	QUALITY CONTROL: IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	D.S. VENDOR	NET
	CT-4012-2	1 1/2 - 1 1/8" ACCESS HOLE PLUG PER SK. CT-AH-1, TO ASME, SA-105, H=1.705"	1					E			
	34	SP. END PROT. PERCT-EP-1	2					E			
	34	SPIDER BRACING PER CT-ES-1	2					E			
	CT-2166-1	3 - 1 - 6" 2.1" (1.375 MW) X 6" (S-80) SWEEPOLET, TO SA-105, WITH 37 1/2° RE.	1					E			SEE ATTACHED SHEET
	6	END PROT.	1					E			
	12	END PROT.	1	AT GRINNELL IND. PIPING KERNERSVILLE, N. C.				E			

Code Sec. III, Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code

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

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

SHEET 1 OF 4

1. Fabricated by ITT Grinnell Ind. Piping, Inc. Kernersville (Name and Address of Fabricator) Order No. 7128

2. Fabricated for Duke Power Company, Charlotte, NC (Name and Address) Order No. C-12517

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM (Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-25X 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 N-2

Edition 1974, Addenda Date Winter 1974, 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

3,4 ----Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number CT-SM-4C (include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 8-10-78 Signed ITT GRINNELL Ind. Piping, Inc. (Fabricator) By Thomas A. Smith

Certificate of Authorization Expires 7-16-79 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 N.C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 8-14 1978, 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 Co.

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 8-14, 1978

Danny L. Soles (Inspector) Commissions N.C. - No. 878 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

FORM EN-101 REV 1/76
Q.A. FORM N2.1C

ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

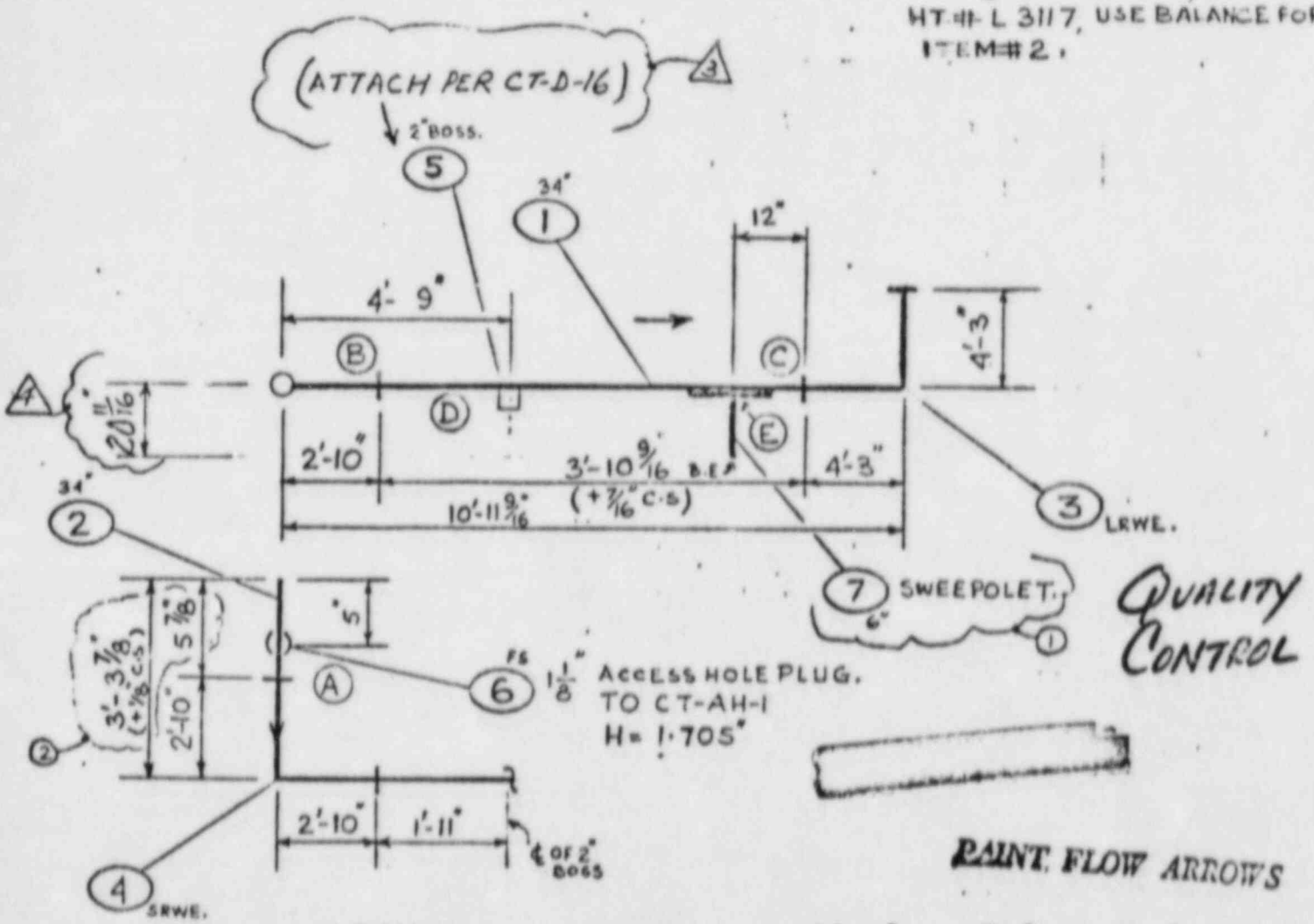
CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT # 1
Charlotte, N.C.
P.O. C-12517

→ RE DRW'N [illegible] 8-28-77 CHK'D PG
REV. (1) SM 11-11-77 CHK'D PG
REV. (2) SM 12-14-77 CHK'D PG
REV. (3) SM 5-23-78 CHK'D PG
(4) 7-5-78 PG

LENGTH OF ACCESS HOLE PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT—IF REQUIRED.

SPECIAL MATERIAL
CHECK ALLOCATION SHEETS
BEFORE CUTTING

USE 3'-10 9/16" FROM BAR # 17 LOT # 4121 HT # L 3117, USE BALANCE FOR ITEM # 2.



QUALITY CONTROL

PAINT FLOW ARROWS

MACHINE ENDS
PER SKETCH CT-D-2, EXCEPT AS NOTED.

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5 (01) APP. CODE Asme. Sec. III. Cl 2 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 MAIN STEAM. (SM) FAB. SPECS. JS 119
REF. DRW'G NO. CN-1491-SM001 (REV 2) PRESS. 1185 (2) PSI. TEMP. 600 °F. WT. 7728 LBS.
PIECE MARK CT-SM-4C REGISTER CT-01-25X

GRINNELL INDUSTRIAL PIPING, INC.

FORM E[illegible]
Q.A. FORM NO. [illegible]

H.P.

Register No. CT-01-25X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 24

Revision No. A SM Revision Date 5-23-75

DUKE POWER COMPANY
CATAWBA UNIT #1
Charlotte, N.C.
P.O. C-12517

Piece Mark CT-SM-4C Job Name Contract No. 7127 Location

Sup. - Main Steam

ITEM	PART NUMBER / DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENTATION IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	P,B,C,T,C,D,* 3,4 CT-01-11-1 31-438" I.D X 1-375" MW. SML'S CS, PIPE TO ASME, SA-106 GR-C- (USE 3'-10 5/16" FROM BAR #17, LOT # 4121, HT # L3117) ②	3'-10 5/16"				F			
2	P,B,C,T,C,D,* 3,4 CT-01-11-1 —— DITTO —— (USE BALANCE FROM ABOVE BAR)	9'-5"				F			
3	L,A,A,T,C,* * 3,4 CT-01-17-1 31-438" I.D X 1-375" MW, 90° LRWE TO SA-234 WPB-W, MADE FROM SA-515 GR-70 PLATE, (70,000 PSI TENSILE), OR SA-234 WPC SEAMLESS, ENDS PER DETAIL CT-D-2	1		See Attached Sheets		E			
4	L,B,A,T,C,* * 3,4 CT-01-16-1 —— DITTO —— EXCEPT, SRWE	1				E			
5	Y,*,A,A,C,E,* 2 CT-3002-3 2" 3000# CS, SP. WELD BOSS TO SA-105, PER DET. SK-CT-WB-1 (ATTACH PER CT-2-16) ③	1 1		ITT GRINNELL IND. PIPING KERNERSVILLE, N.C.		E			

Code Nuclear Sec. III, Cl. 2 Class DUKE B

Nuclear Safety Related

Job Supplement JS 118 MFG. Code

GRINNELL INDUSTRIAL PIPING, INC.

FORM EN-132 REV 7/76
Q.A. FORM N2.1F

H-1

Register No. CT-01-25X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 24 Of 24

Revision No. 2 SH1 Revision Date 7-13-78

DUKE POWER COMPANY
CATAWBA UNIT # 1
Charlotte, N.C.
P.O. C-12517

Piece Mark CT-SM-4C Job Name Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENT	QUALITY CONTROL: IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
6	****** CT-4012-2	Sup- Main Steam 112. 1 1/8" ACCESS HOLE PLUG PER SK- CT-AH-1, TO ASME, SA-105, H=1.705"	1					E			
		34. SP END PROT. PERCT-EP-1	2					E			
		3A. SPIDER BRACING PER CT-ES-1	2					E			
7	XBALCA* CT-2166-1	34" . 6" 34" (1.375" MW) X 6" (S-80) SWEEPOLET, TO SA-105, WITH 37½° BE	1		See Attached Sheets			E			
		6" END PROT.	1					E			
		2" END PROT. AT GRINNELL IND. PIPING KERNERSVILLE, N.C.	1					E			

Code Nuc. Sec. III, Cl 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code

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 Ind. Piping, Inc., Kernersville Order No. 7127
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-15X 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 N-2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-4B
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 5-26-78 Signed ITT GRINNELL Ind. Piping, Inc. By Thomas A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 N. C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 5-29-78, 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 Co.

By signing this certificate, neither the Inspector nor his employer makes 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 5-29-78

Barry K. Boyce Commissions N.C. No. 878
(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".

Printed in U.S.A. (1/73) This form (E02) is obtainable from the ASME, 345 E. 47th St., New York, N.Y. 10017

FORM EN-101 REV 1/77
Q.A. FORM N2.1C

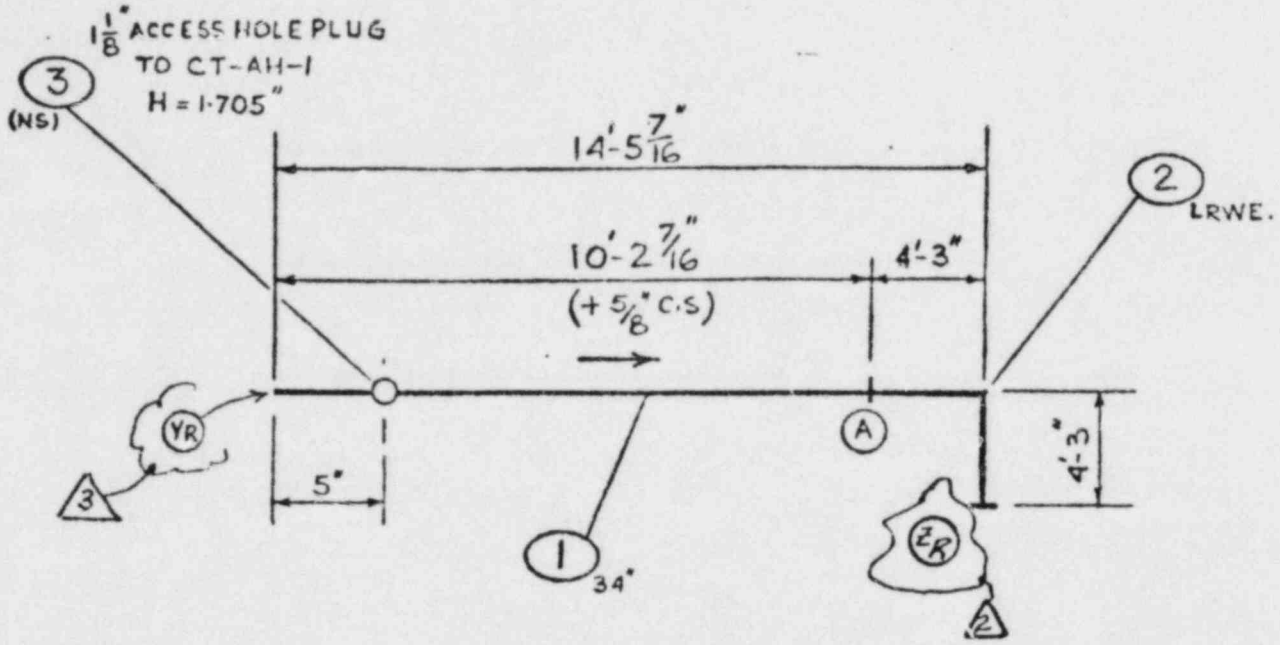
ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1
Charlotte, N.C.
C-12517

→REDRW'N: [illegible] 10-28-77 CHK'D PG
REV (1) SM 12-14-77 CHK'D PG
REV (2) JB 3-10-78 CHK'D PG
REV. (3) SM 5-4-78 CHK'D PG

LENGTH OF ACCESS HOLE PLUG SHALL
BE ± 1/16" OF ACTUAL WALL THK.
SHOP SHALL GRIND TO FIT—IF REQUIRED.



PIPE: 31.438 I.D X 1.375" MW SA-106C.
FLG:
B. W. FTTG: SA-234 WPB-W OR SA-234 WPC.
F. S. FTTG: SA-105

PAINT FLOW ARROWS

QUALITY CONTROL

MACHINE ENDS
PER SKETCH CT-D-2

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5 (01) APP. CODE Asme. Sec. III, Cl. 2 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 MAIN STEAM (SM) FAB. SPECS. JSIIS
REF. DRW'G NO. CN-1491-SM002 (REV 2) PRESS. 1135 PSI. TEMP. 600 °F. WT. 8546 LBS.
PIECE MARK CT-SM-4B (1) REGISTER CT-01-15X

GRINNELL INDUSTRIAL PIPING, INC.

Kernersville, N.C.

FORM [illegible]
Q.A. FORM [illegible]

MATERIALS RECORD
PRODUCTION PLANNER

Register No. CT-01-15X

Sheet 3 Of 3

Revision No. ______ Revision Date ______

Piece Mark CT-SM-4B Job Name DUKE POWER COMPANY CATAWBA UNIT #1 Charlotte, N.C. C-12517 Contract No. 7127 Location ______

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	HEAT NUMBER	DOCUMENT	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
	SYS- MAIN STEAM										
1	BPCT CD x 3 4 CT-01- 11-1	31.438" I.D. X 1.375" MW. SML'S 10 C.S. PIPE TO ASME SA-106 GR.C	23' [illegible] 5½'	L3130 366/9Y	DDI	QC 150 2-20-78	QC 141 2-14-78	F			
2	LAAT C x x 3 4 CT-01- 17-1	31.438" I.D. X 1.375" MW, 90° LRWE TO SA-234 WPB-W, MADE FROM SA-516 GR.70 PLATE, (70,000 PSI TENSILE), OR SA-234 WPC SEAMLESS, ENDS PER DETAIL CT-D-2.	1	ARAP #1[illegible]	DWF-16 SJM	QC 191 2-20-78		F			
						[illegible] 4/5/78					
	x x x x x x 1 1 2 CT-[illegible]-2	1⅛" ACCESS HOLE PLUG PER CT-AH-1 H = 1.705" MAT. TO SA-105	1	ABF	AP-4 SJM	[illegible]		E	I2-3[illegible]	BX[illegible]	

[illegible] RUM

Code ASME Sec. III, Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code ______

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*
(As Required by the Provisions of the ASME Code Rules)

1. Fabricated by ITT Grinnell Ind. Piping, Inc., Kernersville NC Order No. 7127
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C 12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-5X 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 N-2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-4A
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 3-28-78 Signed ITT Grinnell Ind. Piping, Inc. By Thomas A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 N. C. and employed by * of HARTFORD CT. have inspected the piping described in this Data Report on 3-29 1978, 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 CO.

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 3-29, 1978

Barry K. Bolte (Inspector) Commissions N. C. - No. 878 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".

Printed in U.S.A. (2/73)

This form (E62) is obtainable from the ASME, 345 E. 47th St. New York, N.Y. 10017

Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

Q.A. FORM N2.1C

2 OF 3

CONT. NO. 7127

NAME DUKE POWER COMPANY

LOCATION CATAWBA UNIT #1
CHARLOTTE NC.
P.O. C12517

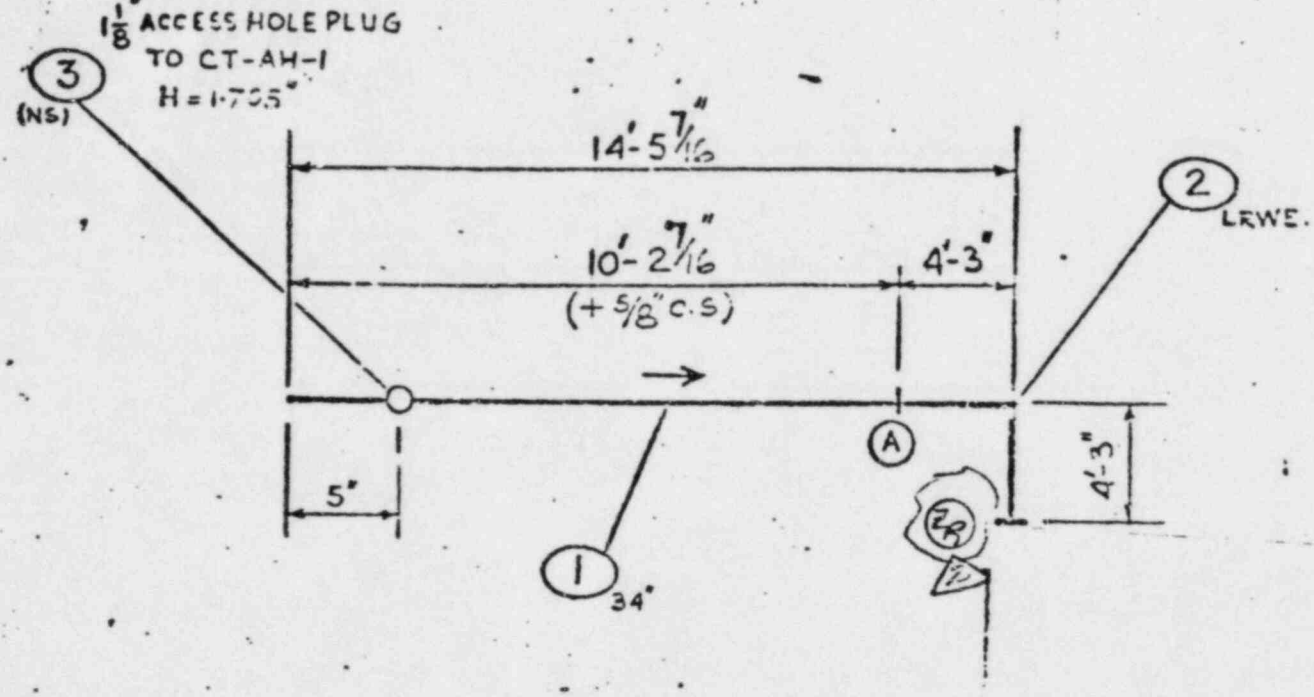
→ REDRWN @ A 10-28-77 CHK'D PG

REV. (1) SM, 12-14-77 CHK'D

REV. (2) JE 3-2-78 CHK'D PG 3-2-78

REV. _____ CHK'D _____

LENGTH OF ACCESS HOLE PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. ____
SHOP SHALL GRIND TO FIT—IF REQUIRED.



REVISION

PIPE: 31.438 I.D X 1.937 MW, SA-106C.
FLG:
B. W. FTTG: SA-234 WPB-W OR
F. S. FTTG: SA-234 WPC. SA-105.

PAINT FLOW ARROWS

MACHINE SNDS
PER SKETCH CT-D-2

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5 (01) APP. CODE Sec. III, Cl 2 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 MAIN STEAM (SM) FAB. SPEC'S JS 116

ERECT. DRWG NO. CN-1491-SM003 (REV 2) PRESS 1135 PSI TEMP 600 °F WT 8546 LBS

ERECT MARK CT-SM-4A (1) REGISTER CT-01-5X

GRINNELL INDUSTRIAL PIPING, INC.
KERNERSVILLE N.C.

FORM EN-102 REV 7/76
Q.A. FORM N2.1F
H.P

Register No. CT-01-5X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 3

Revision No. ______ Revision Date ______

Piece Mark CT-SM-4A Job Name DUKE POWER COMPANY CATAWBA UNIT #1 CHARLOTTE N.C. Contract No. 7127 Location ______

P.O. C1-2517
Main Steam

ITEM	PART NUMBER		DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	DOCUMENT	IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	BBCTC[illegible] CT-01-11-1	3 4	31.438" I.D X 1.375" MW. SML'S CS, PIPE TO ASME, SA-106 GR.C	1' 10"	L313 N-26	OF8 20' Z	[illegible]	Q.C. stamp 2-14-78	F			
2	LAATC** CT-01-17-1	3 4	31.438" I.D X 1.375 MW, 90° LRWE TO SA-234WPB-W, MADE FROM SA-515 GR.70 PLATE, (70,000 PSI TENSILE), OR SA-234WPC SEAMLESS, ENDS PER DETAIL CT-D-2.	1	ARAR #1	BWF-16	2-21-78 Q.C.		E			[illegible] 3
	[illegible]	1 1 2	1 1/2" ACCESS HOLE PLUG PER CT-A11-1, SA-105, 'H'=1.705"	1	ABF	AP	Q.C. stamp		E	F2	36	6x 2 [illegible] 7/4/77
		3 4"	SP. END PROT. PER CT-EP-1	2					E			
		3 4"	SPIDER BRACING PER CT-ES-1	2					E			12/19

SHOP COPY LAYOUT

Code Asme. Sec. III, Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code ______

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

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

1 OF 4

1. Fabricated by ITT Grinnell Ind. Piping, Inc., Kernersville Order No. 7127
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-6X Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

CT-SM-5A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class N-2

Edition 1974, Addenda Date Winter 1974, 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 & 4 ----Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number CT-SM-5A
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 6-26-78 Signed ITT GRINNELL Ind. Piping, Inc. (Fabricator) By Thomas A. Smith

Certificate of Authorization Expires 7-16-79 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 N. C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 6-27 19 78, 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 Co.

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 6-27-78 Signed Barry K Bolin (Inspector) Commissions N. C. - No. 878 (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".

Printed in U.S.A. (2/73)

This form (E62) is obtainable from the ASME, 345 E. 47th St., New York, N.Y. 10017

Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

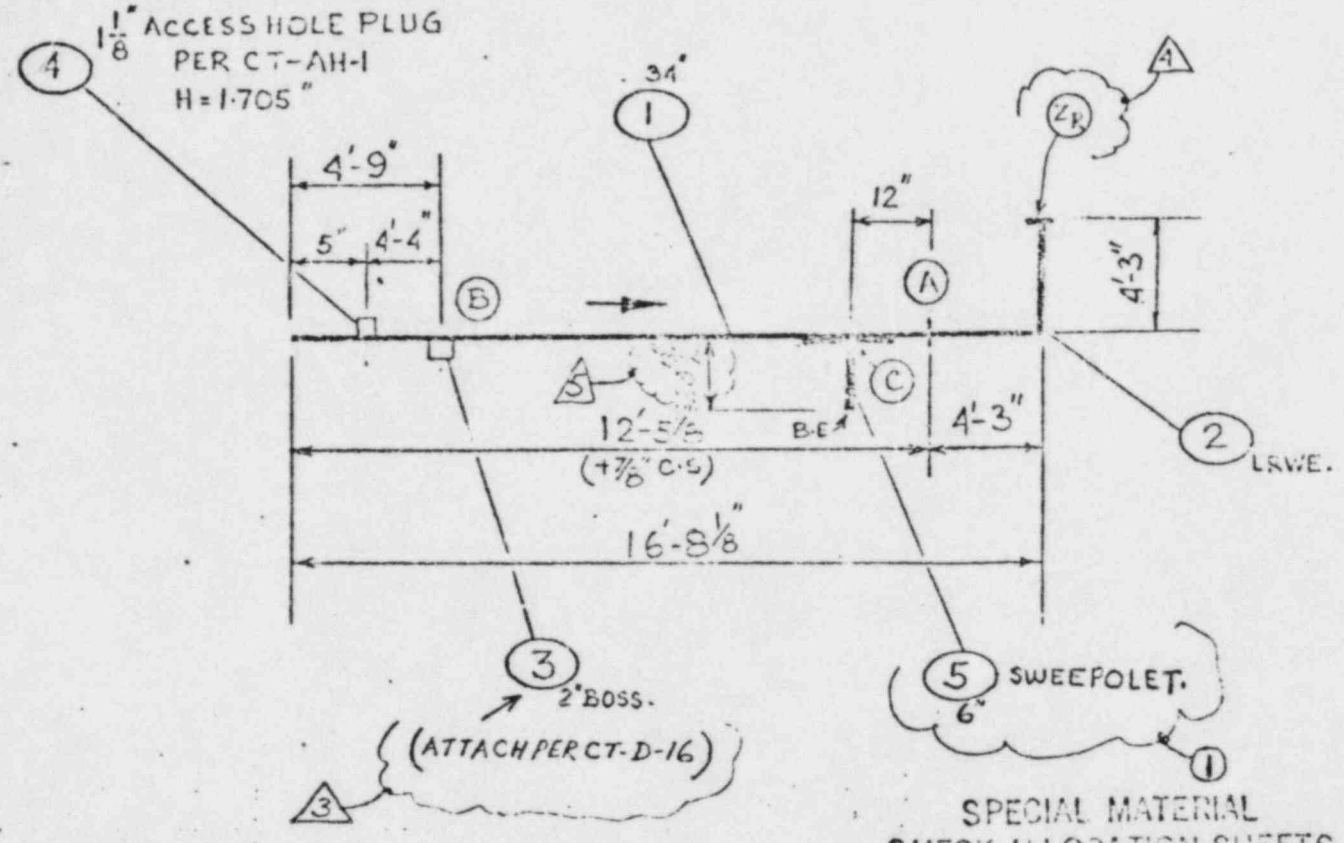
FOREMAN
Q.A. FOREMAN

2 of 4

CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1 Charlotte N.C. P.O.C12517

RE DRW'N 10-26-77 CHK'D TG.
REV. (1) SM 11-11-77 CHK'D TG
REV. (2) SM 12-14-77 CHK'D PG
REV. (3) SM 5-22-78 CHK'D PG
REV. (4) SM 5-23-78 ✓ PG.
REV. (5) 6-2-78 ✓ SL

LENGTH OF ACCESS HOLE PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT—IF REQUIRED.



SPECIAL MATERIAL
CHECK ALLOCATION SHEETS
BEFORE CUTTING

USE BAR# 13, LOT# 4121, HT.# L3123, (13'-0 1/4")

PAINT FLOW ARROWS

QUALITY CONTROL

MACHINE ENDS PER SKETCH CT-D-2, EXCEPT AS NOTED.

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5(01). APP. CODE Asme. Sec. III, Cl 2 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 MAIN STEAM. (SM) FAB. SPEC'S JS 11B
REF. DRW'G NO. CN-1491-SM.003 (REV-2) PRESS. 1185 (2) PSI. TEMP. 600 °F. WT. 10,479 LBS.
PIECE MARK CT-SM-5A REGISTER CT-01-6X

GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE, N.C. REVISION

FORM EN-122 REV 7/76
Q.A. FORM N2.17

Register No. CT-01-6X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 21

Revision No. A SM Revision Date 5-22-79

DUKE POWER COMPANY
CATAWBA UNIT #1
Charlotte, N.C.
P.O. C-12517

Piece Mark CT-SM-5A Job Name Contract No. 7127 Location

PART NUMBER	DESCRIPTION System MAIN Steam	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
			HEAT NUMBER	DOCUMENT	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
PBCTCD** 3,4 CT-01- 11-1	31.438"I.D X 1.375" MW. SML'S 12 5½' C.S. PIPE TO ASME SA-106 GR.C USE BAR #13, LOT # 4121, HT # L3128 (13'-6½")	1					F			
LAATCE** 3,4 CT-01- 17-1	31.438"I.D X 1.375" MW, 90° LRWE TO SA-234 WPB-W, MADE FROM SA-515 GR.70 PLATE, (70,000 PSI TENSILE), OR SA-234 WPC SEAMLESS, ENDS PER DETAIL CT-D-2	1					E			
XXAACE** 2" CT-3512-3	2" 3000# CS SP. WELD BOSS TO SA-105 PER DET. SK # CT-WB-1 (ATTACH PER CT-D-16). ⚠	1					E			
XXXXXX** 1 1/2 CT-4512-2	1 1/8" ACCESS HOLE PLUG PER CT-AH-1, SA-105 "H" = 1.705	1					E			

Code Sec. III, CL 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code

FORM GN-102 REV 7/78
Q.A. FORM N2.1F

H.P

GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE NC

MATERIALS RECORD
PRODUCTION PLANNER

Register No. CT-01-6X

Sheet 21 Of 21

DUKE POWER COMPANY
CATAWBA UNIT #1

Revision No. (1) SM Revision Date 11-11-77

Piece Mark CT-SM-5A Job Name Charlotte NC Contract No. 7127 Location

P.O. C12517
System Main Steam

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENT	QUALITY CONTROL: IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
	3/4 x -	SP. END PROTECTORS	2					E			
		PER CT-EP-1									
	3/4 x -	SPIDER BRACING PER	2					E			
(1)		CT-ES-1									
	NT x -										
5	XBALCAX 3/4" x 6"	3/4"(1.375"MW) X 6"(S-80)	1	P277	SWIF-17 3107	1-5		E			
	CT-216 B-1	SWEEPOLET, TO SA-105,				522-75					
		37½" B.E									
	6" x -	END PROT.	1					E			
	2" x -	END PROT.	1					E			

Code Amm. Sec. III, Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code

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

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

SHEET 1 OF 4

1. Fabricated by ITT Grinnell Ind. Piping, Inc. Kernersville Order No. 7127
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-16X Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

CT-SM-5B

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class N-2

Edition 1974, Addenda Date Winter 1974, 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
3,4 ----Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number CT-SM-5B
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 8-31-78 Signed ITT GRINNELL Ind. Piping, Inc. By Thomas A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 MD and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 9/1 1978, 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 Co.

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 9/1, 1978

Donald Daniels (Inspector) Commissions 4128 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 EN-101 REV 1/10
Q.A. FORM 9.1C

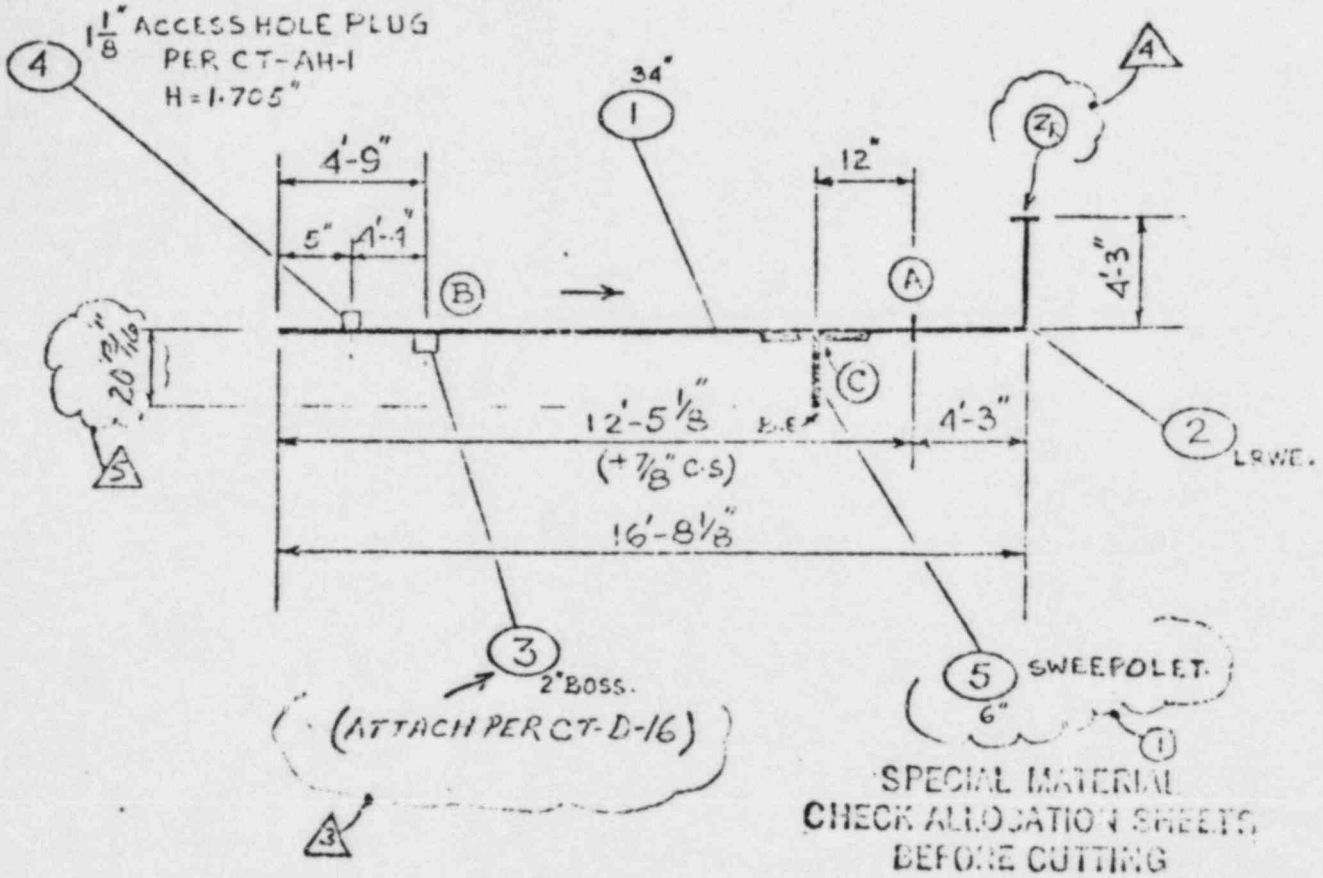
ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1
Charlotte, N.C.
C-12517

LENGTH OF ACCESS HOLE PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT—IF REQUIRED.

→ RE DRW'N [illegible] 8-77 CHK'D [illegible]
REV 1 SM 11-11-77 CHK'D [illegible]
REV 2 SM 12-14-77 CHK'D [illegible]
REV 3 SM 2-23-78 CHK'D [illegible]
REV 4 SM 5-29-78 [illegible]
REV 5 TG 6-2-78 SL



SPECIAL MATERIAL
CHECK ALLOCATION SHEETS
BEFORE CUTTING

QUALITY CONTROL

{ USE BAR # 15, LOT # 4121,
HT. # L 3123, (13'-0 3/16")

PAINT FLOW ARROWS

MACHINE ENDS
PER SKETCH CT-B-2
EXCEPT AS NOTED.

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5(01) APP. CODE Winter 1974, Sec. III, Cl. 2 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	✓	Cod: Stamp	✓	Data Reports	✓

SYSTEM MAIN STEAM (SM) FAB. SPECS. ITS 118
REF. DRW'G NO. CN-1471-SM002(SQ) PRESS. 1085 PSI. TEMP. 600 °F. WT. 10472 LBS.
PIECE MARK CT-SM-6B REGISTER CT-01-1½X

GRINNELL INDUSTRIAL PIPING, INC. m GRINNELL IND. PIPING

Q.A. FORM N.2 1F

KERNERSVILLE, N. C.

Register No. CT-01-16X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 24

DUKE POWER COMPANY

Revision No. A SM Revision Date 5-2[illegible]-7[illegible]

Piece Mark CT-SM-5B Job Name CATAWBA UNIT #1 CHARLOTTE, N.C. Contract No. 7127 Location

P.O.-C-12517

SYSTEM- MAIN STEAM

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENT	QUALITY CONTROL: IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
	CT-01-11-1	3/4 31.435"I.D X 1.375"MW SMLS CS, PIPE TO ASME SA-106 GR.C USE BAR #15, LOT #4121, HT. #L3123 (13.0 FT)	12.5 1/2"					F			
	CT-01-17-1	3/4 31.435"I.D X 1.375"MW, 90° LRWE TO SA-234 WPB-W, MADE FROM SA-515 GR.70 PLATE, (70,000 PSI TENSILE), OR SA-234 WPC SEAMLESS, ENDS PER DETAIL CT-D-2.	1					E			
	CT-3002-3	2 3000# CS SP.WELDBOSS TO SA-105, PER DET. SK# CT-WB-1 (ATTACH PER CT-D-16)	1					E			
	CT-4012-2	1 1/2 1 1/8" ACCESS HOLE PLUG PER CT-AH-1, H=1.705" MAT. TO SA-105	1					E			

SEE ATTACHED SHEETS

Code Amer. Soc. III, Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code

GRINNELL INDUSTRIAL PIPING, INC. (GRINNELL IND. PIPING)

KERNERSVILLE, N. C.

Q.A. FORM NO. 1F

MATERIALS RECORD
PRODUCTION PLANNER

Register No. CT-01-16X

Sheet 24 Of 24

Revision No. A-SM Revision Date 5-23-77

DUKE POWER COMPANY
CATAWBA UNIT #1
CHARLOTTE, N.C.
P.O. - C-12517

Piece Mark CT-SM-5B Job Name Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
				HEAT NUMBER	DOCUMENT	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
		SYSTEM- MAIN STEAM									
	3/4	SP. END PROT. PER CT-LP-1	2					E			
	3/4	SPIDER BRACING PER CT-ES-1	2					E			
X2ALCAX CT-216B-1	3/4" x 6"	3/4"(1.375"MW) X 6"(S-80) SWEEPOLET, TO SA-105, 37½° B.E.	1					E			
	6"	B.E. PROT.	1					E			
						SEE ATTACHED SHEETS					
	2"	END PROT.	1					E			

Code Sec. III, Cl 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS 118 MFG. Code

GRINNELL INDUSTRIAL PIPING, INC.

FORM EN-102 REV 7/76
Q.A. FORM N2.1F

H.P

Register No. C.T-01-16X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 1 Of 2

Revision No. (1) SM Revision Date 11-11-77

DUKE POWER COMPANY
CATAWBA UNIT #1

Piece Mark C.T-SM-5B Job Name Contract No. 7127 Location

ITEM	PART NUMBER		DESCRIPTION	QUAN OR LENG	QUALITY CONTROL HEAT NUMBER	QUALITY CONTROL DOCUMENTATION	QUALITY CONTROL PROCESS	ACCOUNTING/MATERIAL STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	PADX CT-01-11-1	3,4	31.438"I.D X 1.375" MW. SML'S CS, PIPE TO ASME, SA-106 GR.C USE BAR#15, LOT#4121, HT.#L3123 (13-0%)	12-5 1/8"	L3123 (SN-246.22)	1-1.5 EA		163	F	5-18-78		
2	LAAX CT-01-17-1	3,4	31.438"I.D X 1.375" MW, 90° LRWE TO SA-234 WPB-W, MADE FROM SA-515 GR.70 PLATE, (70,000 PSI TENSILE), OR SA-234 WPC SEAMLESS, ENDS PER DETAIL CT-D-2.	1	ARBT PEC	SWF-16 SMM	Q.C IPI 150		E		F.Y.	P
3	YXAA CT-3002-3	2	3000# CS, SP. WELDBOSS TO SA-105, PER DET. SK# CT-WB-1	1	AAI	SWF-4 SMM	Q.C IPI 150 5-22-78		E		BOX #9	
4	XXXX CT-4012-2	1,1/2	1 1/8" ACCESS HOLE PLUG PER CT-AH-1, H=1.705" MAT. TO SA-105 SUPERCEDED	1	ABT	HP SMM	Q.C IPI 150		E	Rec.	5/16	

Code Asme Sec. III, CL 2 Class DUKE B

Nuclear Safety Related

Job Supplement JS118 MFG. Code

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

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

CT-SM-5C

1. Fabricated by ITT Grinnell Industrial Piping, Inc. Order No. 7127
(Name and Address of Fabricator) Kernersville, N. C.

2. Fabricated for Duke Power Company Charlotte, N. C. Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, S. C.

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-26X 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. 2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-5C
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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

Date 9-13-77 Signed ITT Grinnell Ind Piping, Inc. By Herman A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 Maryland and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 9-15 19 77, 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 makes 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 9-15, 1977

(Inspector) Commissions N.B. 77
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, 3, 4, 5, 6, 7 and 8

FORM SPI-101 REV 1/76
Q.A. FORM N2.1C

Sheet 2 of 3

ITT Grimnell Industrial Piping Inc.

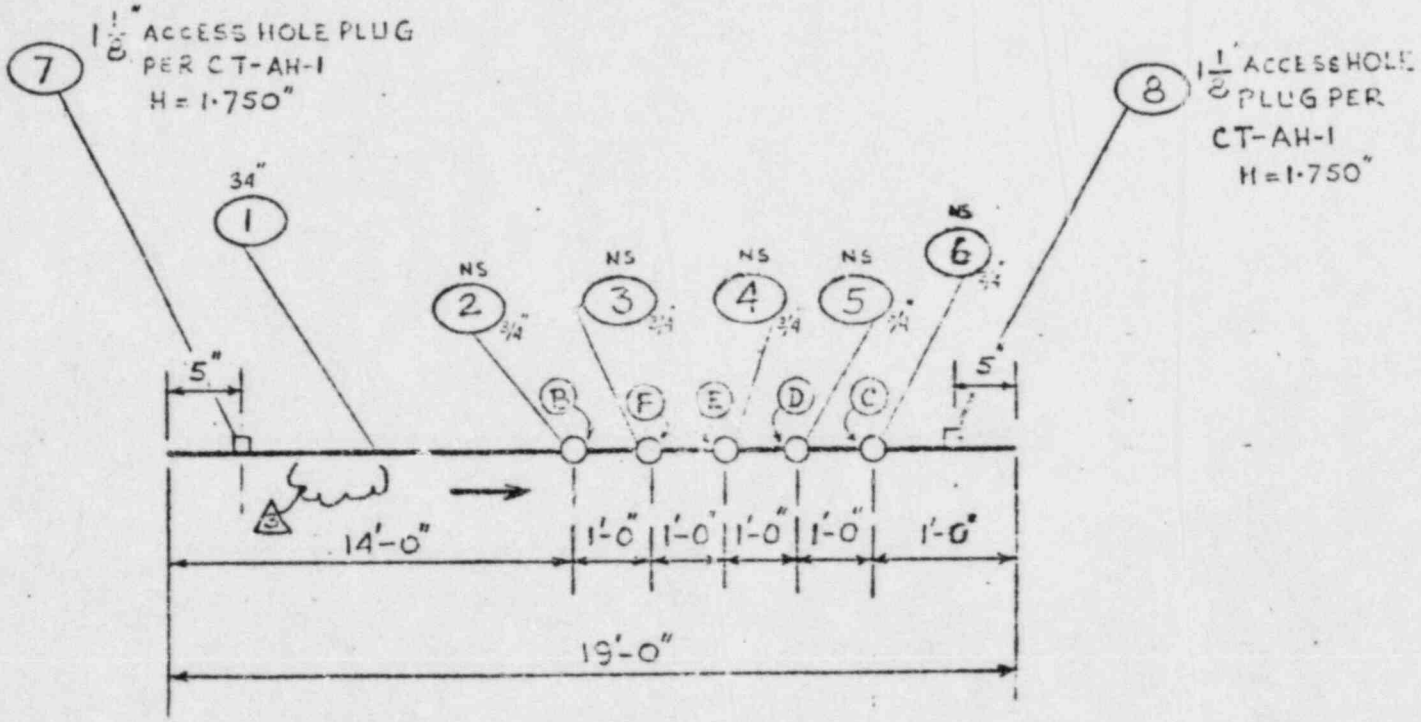
(R) KERNERSVILLE, N. C.

CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT # 1

DRW'N [illegible] CHK'D PG 11-1-76
REV. 1 SM 1-21-77 CHK'D PG
REV. 2 SM 2-23-77 CHK'D PG
REV. 3 SM 7-25-77 CHK'D [illegible]

NOTE:- LENGTH OF A·H·PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT, IF REQ'D. (2)

DUKE POWER COMPANY
CHARLOTTE, N.C.
C-12517



MACHINE ENDS PER SKETCH CT-D-2

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5 (01) APP. CODE Sec. III, CL 2 NO. REQ'D 1

Radiography (RT)	✓	Special Marking		Preheat	✓	Cert. of Compliance	
Magn. Particle (MT)	✓	Special Cleaning	✓	Heat Treat	✓	Mill Test Reports	✓
Liq. Penetrant (PT)		Painting	✓	Code Stamp	✓	Data Reports	✓

SYSTEM MAIN STEAM (-SM) FAB. SPECS. [illegible]
REF. DRW'G NO. CT-M-1-SM001 PRESS. 1236 PSI. TEMP. 610 °F. WT. 1434 LBS.
PIECE MARK CT-SM-5C REGISTER CT-01-26X

DUKE POWER COMPANY / CHARLOTTE, N.C. / C-12517

Register No. CT-01-26X — MAIN STEAM

MATERIALS RECORD
PRODUCTION PLANNER

DUKE POWER COMPANY
CATAWBA UNIT # 1

Sheet 3 Of 3

Revision No. [illegible] Revision Date [illegible]

Base Mark CT-SM-5C Job Name CATAWBA UNIT # 1 Contract No. 7127 Location

PART NUMBER		DESCRIPTION	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
				HEAT NUMBER	DOCUMENT	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
LBCTCD# CT-01-15-1	3.4	31.438" I.D X 1.750" MW. SMLS CS, PIPE TO ASME, SA-106 C	19'-0"	J-6000	265470		[illegible]	F	[illegible]		
[illegible] E* CT-[illegible]2-1	0.75	3/4", 3000# CS, SPECIAL WELD BOSS TO SA-105, PER DET. SK-# CT-WB-1	1	AUA	SWF-1 SIM	[stamp]		E			
[illegible] CT-[illegible]2-1	0.75	DITTO	1	AUA	SWF-1 SIM	[stamp]		E			
[illegible] CT-[illegible]2-1	0.75	DITTO	1	AUA	SWF-1 SIM	[stamp]		E			
[illegible] CT-[illegible]2-1	0.75	DITTO	1	AUA	SWF-1 SIM	[stamp]		E			
[illegible] CT-[illegible]2-1	0.75	DITTO	1	AUA	SWF-1 SIM	[stamp]		E			
[illegible] CT-[illegible]-4	1.12	1 1/8" ACCESS HOLE PLUG PER CT-AH-1, SA-105, "H" = 1.750	1	ABF	AP-1 SIM			E			
[illegible] CT-4[illegible]-4	1.12	DITTO	1	ABF	AP-1 SIM			E			

Code ASME Sec. III, Cl. 2 Class DUKE 'B'

Job Supplement J 5119 MFG. Code

Nuclear Safety Related

[illegible] 7/11

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*
(As Required by the Provisions of the ASME Code Rules)

1. Fabricated by ITT Grinnell Industrial Piping, Inc. Order No. 7127
(Name and Address of Fabricator) Kernersville, N. C.

2. Fabricated for Duke Power Company Charlotte, N. C. Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, S. C.

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-35X Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

CT-SM-5D

6. The material, design, construction, and workmanship comply with ASME Code Section III, Class N-2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-5D
(include — mark no. — material spec. — nom. pipe size — schedule or thickness — length — fittings — flanges, etc.)

See Attached Sheets

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 8-31-77 Signed ITT Grinnell Ind. Piping, Inc. (Fabricator) By Thomas A. Smith

Certificate of Authorization Expires 7-16-79 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 N.C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 9-7 1977, 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 9-7 1977 Signed Barry K Bolo (Inspector) Commissions N.C. - No. 878 (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

FORM 4 N-161 REV 1/74
Q.A. FORM N2.1C

2 OF 3

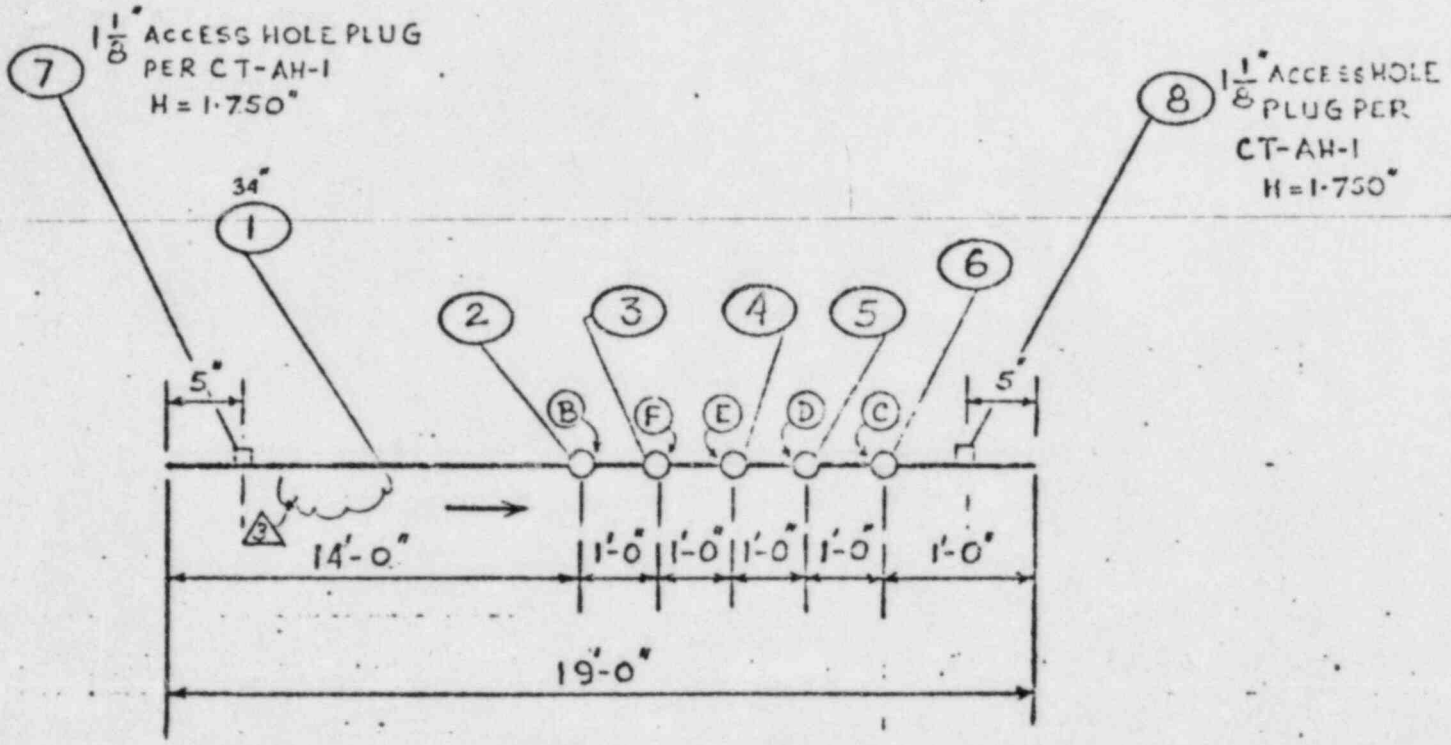
ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

CONT. NO. 7127
NAME DUKE POWER COMPANY, CHARLOTTE, N.C.
LOCATION CATAWBA UNIT #1 P.O. C-12517

DRW'N [illegible] CHK'D P.G. 11-1-76
REV. 1 SM 4-21-77 CHK'D P.G.
REV. 2 SM 6-29-77 CHK'D P.G.
REV. 3 SM 7-29-77 CHK'D P.G.

NOTE:- LENGTH OF A-H PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT, IF REQ'D. (2)



QUALITY CONTROL

MACHINE ENDS PER SKETCH CT-D-2

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500:5(01) APP. CODE ASME Sec. III, CL 2 NO. REQ'D 1

Radiography (RT)	N/A	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 MAIN STEAM (SM) FAB. SPECS. J.S.118
SF. DRW'G NO. CN-1491-SM.004 PRESS. 1230 PSI. TEMP 600°F. WT. 14,924 LBS.
PIECE MARK CT-SM-5D REGISTER CT-01-35X

GRINNELL INDUSTRIAL PIPING, INC., KERNERSVILLE, N.C.

JUL 7 1977

Duke Power Co. Charlotte, N.C.

P.O. C12517

Register No. C T - 01 - 35X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 of 3

System: Main Steam

DUKE POWER COMPANY
CATAWBA UNIT #1

Revision No. 1 SM Revision Date 7-21-77

Piece Mark CT-SM-5D Job Name Contract No. 7127 Location

PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL HEAT NUMBER	QUALITY CONTROL DOCUMENTATION	QUALITY CONTROL PROCESS	ACCOUNTING/MATERIAL STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
PIPE CT-01-15-1	3/4	31.438" I.D X 1.750" MW. SML'S C.S. PIPE TO ASME, SA-106 C	13'-0	J-6000	D21547		F	P-9		
WELDOLET CT-3002-1	3/4 x SCH 160	0.75 3/4", 3000# C.S. SPECIAL WELD BOSS TO SA-105, PER DET. SK-1 CT-WB-1	1	AUA	Surf-1 SIM		E			
WELDOLET CT-3002-1	3/4 x SCH 160	0.75 ——— DITTO ———	1	AUA	Surf-1 SIM		E			
WELDOLET CT-3002-1	3/4 x SCH 160	0.75 ——— DITTO ———	1	AUA	Surf-1 SIM		E			
WELDOLET CT-3002-1	3/4 x SCH 160	0.75 ——— DITTO ———	1	AUA	Surf-1 SIM		E			
WELDOLET CT-3002-1	3/4 x SCH 160	0.75 ——— DITTO ———	1	AUA	Surf-1 SIM		E			
CT-4005-1	1 1/2	1 1/8" ACCESSHOLE PLUG PER CT-AH-1, SA-105, "H" = 1.750"	1	ABF	A.P.-1 SIM		E			
CT-4005-1	1 1/2	——— DITTO ———	1	ABF	AP-1 SIM		E			

SHOP COPY LAYOUT

DELIVERED JUL 27 '77

Code Sec. III, Cl. 2 Class DUKE "B"

Nuclear Safety Related

Job Supplement TS118 MFG. Code E-1-4

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. Order No. 7127
(Name and Address of Fabricator) Kernersville, N. C.

2. Fabricated for Duke Power Company Charlotte, N. C. Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, S. C.

5. Piping System Identification TEW 8-18-77 MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-7X (1-4) Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

CT-SM-6A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class NUC.2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-6A
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 8-18-77 Signed ITT Grinnell Ind. Piping, Inc. By Thomas A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 Certificate of Authorization No. 11-1456

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 Maryland and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 8/23 1977, 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 8/23 1977

Richard L. Starkey Commissions Maryland-94
(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

ITT Grinnell Industrial Piping Inc.

FORM E [illegible] REV 1/78
Q.A. PROCEDURE

Sheet 2 of 3

(1) KERNERSVILLE, N. C.

REVISION

ONT. NO. 7127
AME DUKE POWER COMPANY
OCATION CATAWBA UNIT # 1

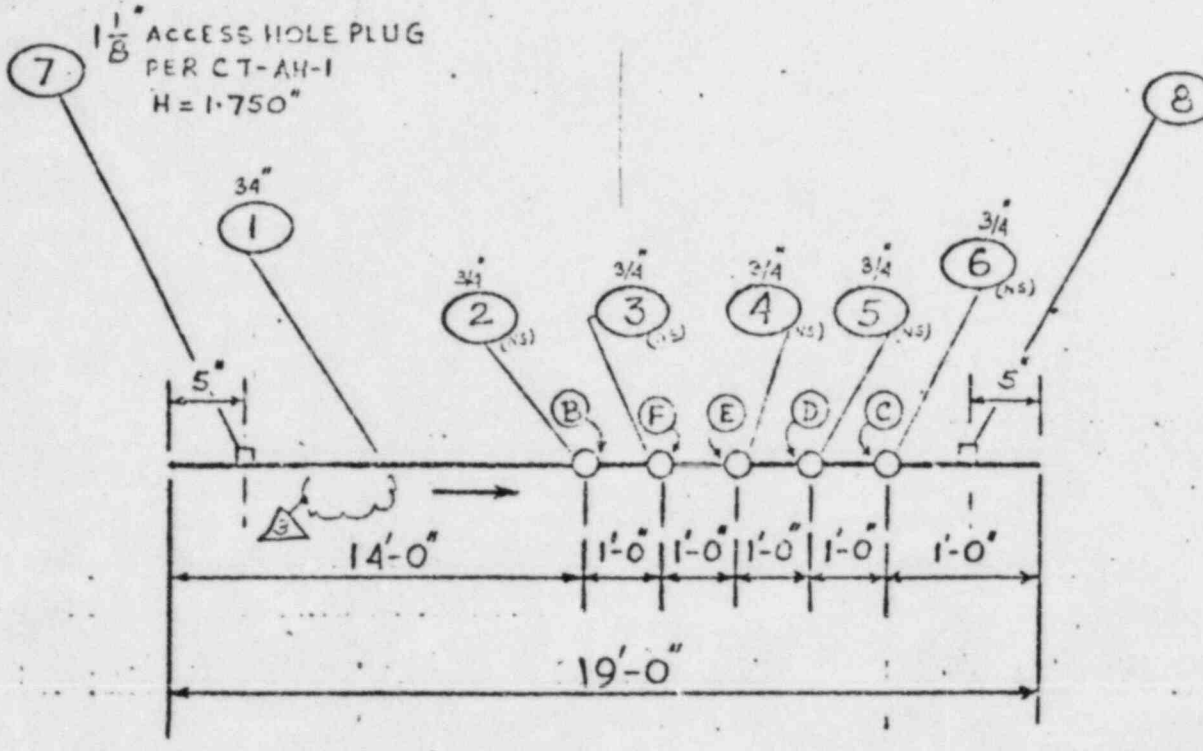
DRW'N [illegible] 10-21-76 CHK'D [illegible] 11-1-76
REV. 1 SM, 4-21-77 CHK'D [illegible]
REV. 2 SM 6-29-77 CHK'D [illegible]
REV. 3 SM 7-25-77 CHK'D [illegible]

DUKE POWER COMPANY
CHARLOTTE, N.C.
C-12517

NOTE:- LENGTH OF ACCESS HOLE PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT, IF REQ'D.

2

QUALITY CONTROL



MACHINE ENDS
PER SKETCH CT-D-2

Nuclear Safety Related

ASS DUKE 'B' LINE SPEC. PS 1500-5(01) APP. CODE ASME Sec. III, Cl. 2 NO. REQ'D 1

adiography (RT)	N/A	Special Marking		Preheat	✓	Cert. of Compliance	
ag. Particle (MT)	✓	Special Cleaning	✓	Heat Treat	✓	Mill Test Reports	✓
q. Penetrant (PT)		Painting	✓	Code Stamp	✓	Data Reports	✓

YSTEM MAIN STEAM (SM) FAB. SPECS. J.S.115
T. DRW'G NO. CN-1491-SM.003 PRESS. 1230 PSI. TEMP. 600 °F. WT. 1,933 LBS.
CE MARK CT-SM-6A REGISTER CT-01-7X

GRINNELL INDUSTRIAL PIPING, INC.

DUKE POWER COMPANY
CHARLOTTE, N.C.
C-12517

Q.A. FORM N2-F

MATERIALS RECORD
PRODUCTION PLANNER

Register No. CT-01-7X

Sheet B Of B

DUKE POWER COMPANY
CATAWBA UNIT #1

Revision No. 1 SM Revision Date 1-[illegible]-77

Piece Mark CT-SM-GA Job Name Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
				HEAT NUMBER	DOCUMENT	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	P B G T C D * 3/4 * * * CT-01-15-1	31.438" I.D X 1.750" MW, SML'S CS, PIPE TO ASME, SA-106 C	10'-0"					F			
2	Y * A-1 S E * 0.75 * * * CT-3002-1	3/4" 3000# CS, SPECIAL WELD BOSS TO SA-105, PER DET. SK.# CT-WB-1	1					E			
3	Y * A-1 S E * 0.75 * * * CT-3002-1	——— DITTO ———	1					E			
4	Y * A-1 S E * 0.75 * * * CT-3002-1	——— DITTO ———	1					E			
5	Y * A-1 S E * 0.75 * * * CT-3002-1	——— DITTO ———	1					E			
6	Y * A-1 S E * 0.75 * * * CT-3002-1	——— DITTO ———	1					E			
7	* * * * * * * 1.1/2 * * * CT-4005-4	1 1/8" ACCESSHOLE PLUG PER CT-AH-1, SA-105, "H" = 1.750"	1					E			
8	* * * * * * * 1.1/2 * * * CT-4005-4	——— DITTO ———	1					E			

Code Asme. Sec. III, Cl. 2 Class DUKE "B"

Nuclear Safety Related

Job Supplement JS118 MFG. Code MAIN STEAM

CT-SM-6B

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. Order No. 7127
(Name and Address of Fabricator) Kernersville, N. C.

2. Fabricated for Duke Power Company Charlotte, N. C. Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, S. C.

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-17X 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.2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-6B
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 9-13-77 Signed ITT Grinnell Ind. Piping, Inc. By Truman A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 Certificate of Authorization No. N-1756

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 Maryland and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 9-15-77, 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 makes 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 9-15, 77 Signed [illegible] Commissions MD 77
(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, 3, 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 8.

ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

FORM EN-101 REV 1/78
Q.A. FORM N2.1C

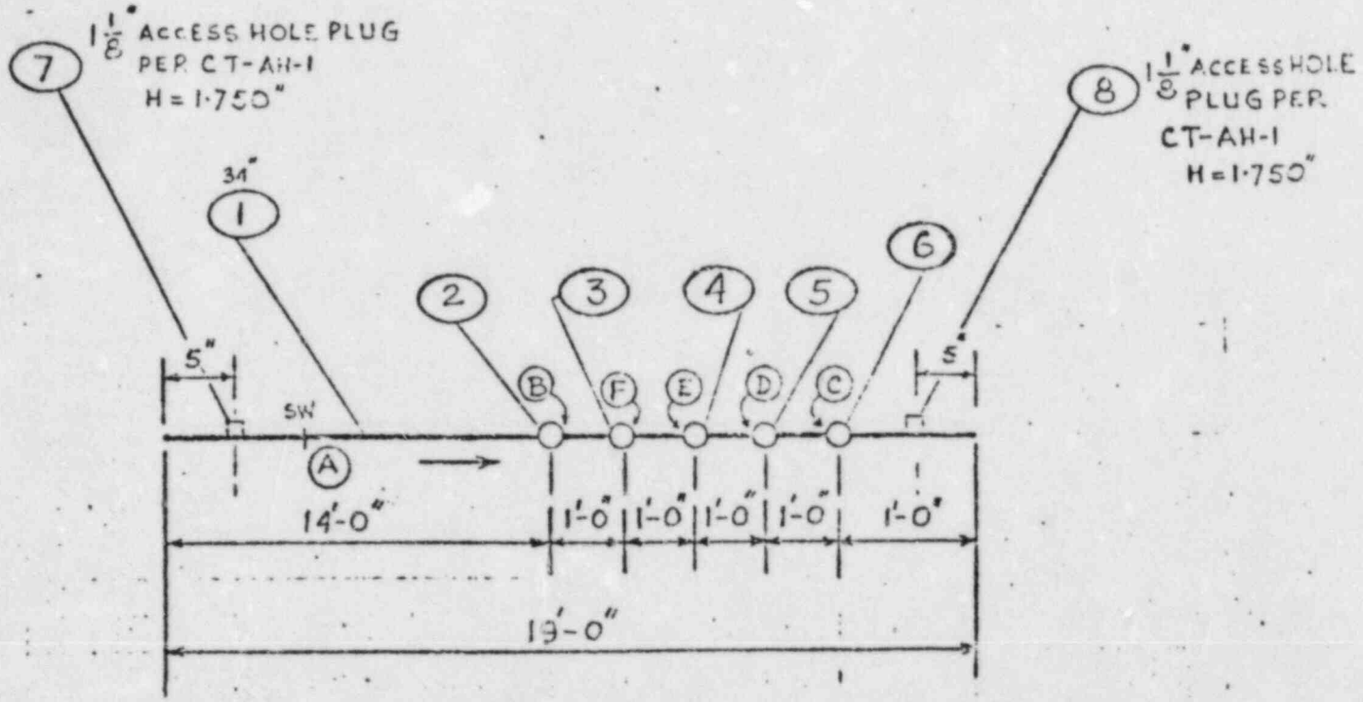
Sheet 2 of 3

ONT. NO 7127
ME DUKE POWER COMPANY
CATION CATAWBA UNIT #1

DRW'N [illegible] 10-2-76 CHK'D PG 11-1-76
REV. 1 SM 4-21-77 CHK'D PG
REV. 2 SM 5-24-77 CHK'D PG
REV. _____ CHK'D _____

NOTE:- LENGTH OF A-H-PLUG SHALL BE ± 1/16" OF ACTUAL WALL THK. SHOP SHALL GRIND TO FIT, IF REQD. (2)

DUKE POWER COMPANY
CHARLOTTE, N.C.
C-12517



MACHINE ENDS
PER SKETCH CT-D-2

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5 (01) APP. CODE Sec. III, Cl. 2 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 MAIN STEAM (SM) FAB. SPECS. JS 108

ISO. DRWG NO. CN-1491-SM-002 PRESS. 1230 PSI. TEMP. 600 °F. WT. 1021 LBS.

CODE MARK CT-SM-6B REGISTER CT-01-17X

U.D.C. DUKE POWER COMPANY/CHARLOTTE, N.C./C-12517

Register No. C T-01-17X

MATERIALS RECORD
PRODUCTION PLANNING

Sheet 3 of 3

MAIN STEAM

DUKE POWER COMPANY

Revision No. A-M Revision Date

Piece Mark C T-SM-6B Job Name CATAWBA UNIT #1 Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENTATION	QUALITY CONTROL: PROCESS	ACCOUNTING MATERIAL: STATUS	ACCOUNTING MATERIAL: U/M	ACCOUNTING MATERIAL: UNIT PRICE P.O.	ACCOUNTING MATERIAL: D.S. VENDOR	ACCOUNTING MATERIAL: NET
1	C T C 1 3/4 x	21.438" I.D. X 1.750" MW, SML'S	19'0"	J-6000		IA		F		P-7 TCW	
		C.S. PIPE TO ASME, SA-106 C		2 PCS.		IB				P-7 TCW	
									9-6-77		
2	A S 0.75 x	3/4" 3000# C.S. SPECIAL WELD	1	AUA	SWT-1 SUM	✓		E			
		BOSS TO SA-105, PER DET.									
		SK. # C.T.-WB-1									
3	A S 0.75 x	——— DITTO ———	1	AUA	SWT-1 SUM	✓		E			
4	A S 0.75 x	——— DITTO ———	1	AUA	SWT-1 SUM	✓		E			
5	A S 0.75 x	——— DITTO ———	1	AUA	SWT-1 SUM	✓		E			
6	A S 0.75 x	——— DITTO ———	1	AUA	SWT-1 SUM	✓		E			
7	A S 1.12 x	1 1/8" ACCESS HOLE PLUG PER	1	ABF	AP-1 SUM	✓		E			
		C T-AH-1, SA-105, "H" = 1.750"									
8	A S 1.12 x	——— DITTO ———	1	ABF	AP-1 SUM	✓		E			

Code Sect. III, CL 2 Class DUKE 'B' Nuclear Safety Related

Job Supplement JSII8 MFG. Code

FORM NPP-1 DATA REPORT FOR FABRICATED NUCLEAR PIPING SUBASSEMBLIES*
(As Required by the Provisions of the ASME Code Rules)

1. Fabricated by ITT Grinnell Ind. Piping, Inc., Kernersville NC (Name and Address of Fabricator) Order No. 7127

2. Fabricated for Duke Power Company, Charlotte, NC (Name and Address) Order No. C12517

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM (Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-27X Prepared by ITT GRINNELL INDUSTRIAL PIPING CO. INC.

(b) National Board No. N/A

CT-SM-6C

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class N-2

Edition 1974, Addenda Date Winter 1974, Case No. N/A

Remarks: Manufacturer's 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 CT-SM-6C (include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 3-23-78 Signed ITT Grinnell Ind. Piping, Inc. (Fabricator) By Thomas A. Smith

Certificate of Authorization Expires 7-16-79 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 MD and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 3/24 19 78, 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 Co.

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 3/24, 1978

Tom Donato (Inspector) Commission MD128 (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 EN-101 REV 9/
Q.A. FORM N21C

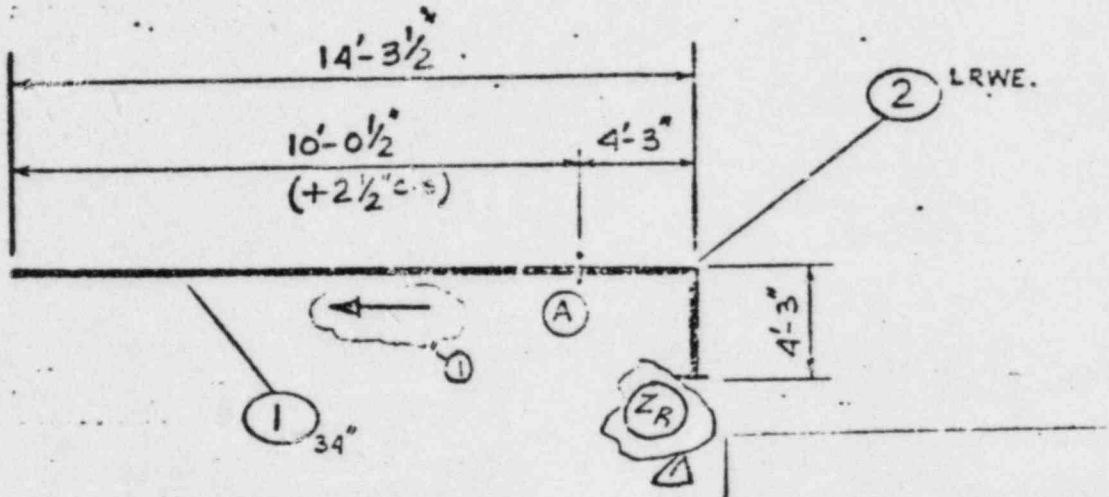
2 OF 3

ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1
Charlotte NC.
PO C 12517

RE DRW'N 10-28-77 CHK'D PG
REV 1 PG 2-24-78 CHK'D [illegible]
REV. _____ CHK'D _____
REV. _____ CHK'D _____



REVISION

PIPE: 31-438I DXI-750MW-SA-106C
FLG:
B. W. FTG: SA-234WPB-W OR SA-234WPC
F. S. FTG:

PAINT FLOW ARROWS

MACHINE ENDS
PER SKETCH CT-D-2

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5(01) APP. CODE [illegible] Sec. III, Cl. 2 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 MAIN STEAM (SM) FAB. SPECS. JS 116
REF. DRW'G NO. CN-1491-SM201 REV 2 PRESS. 1185 PSI. TEMP. 600 °F. WT 12061 LBS.
PIECE MARK CT-SM-6C (1) REGISTER CT 01 27 X

GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE N.C.

FORM EN-102 REV 7/78
Q.A. FORM N2.1F

H.P

Register No. CT-01-27X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 3

Revision No. Revision Date

DUKE POWER COMPANY
CATAWBA UNIT # 1
CHARLOTTE N.C.
P.O. C12517

Piece Mark CT-SM-6C Job Name Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENT	QUALITY CONTROL: IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	PBCTCD* 3/4" CT-01-15-1	31.438"I.D X 1.750" MW. SMLS CS PIPE TO ASME SA-106C	90	L3274P26 SN-26914Y		QC IPI 450 2-20-78	QC IPI 141 2-14-78	F			
2	LAATCD* 3/4" CT-01-18-1	31.438"I.D X 1.750" M.W. 90° LRWC TO SA-234WPB-W MADE FROM SA-515 GR 70 PLATE (70,000 PSI TENSILE), OR TO SA-234WPC SMLS ENDS PER DET. CT-D-2.	1	ARAR	Buf-19	QC IPI 150 2-20-78		E			Prod
	3/4	SP. END PROT. PER CT-EP-1	2					E			
	3/4	SPIDER BRACING PER CT-ES-1	2					E			12/19 BOM

SHOP COPY LAYOUT

Code Amer. Soc. III Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement J.S. 115 MFG. Code

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

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

1 OF 3

1. Fabricated by ITT Grinnell Ind. Piping, Inc., Kernersville (Name and Address of Fabricator) Order No. 7127

2. Fabricated for Duke Power Company, Charlotte, NC (Name and Address) Order No. C-12517

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM (Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-36X 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 N-2

Edition 1974, Addenda Date Winter 1974, 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 3 ----Drawings ----Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number CT-SM-6D (include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

CT-SM-6D

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 5-23-78 Signed ITT GRINNELL Ind. Piping, Inc. (Fabricator) By Thomas A. Smith

Certificate of Authorization Expires 7-16-79 Certificate of Authorization No. N1456

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 Maryland and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 5/31 19 78, 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 Co.

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 5/31 19 78 Richard L. Shirkey (Inspector) Commissions Maryland-94 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".

ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

Q. A. FORM NO. IC 2163

CONT. NO. 7127

NAME DUKE POWER COMPANY

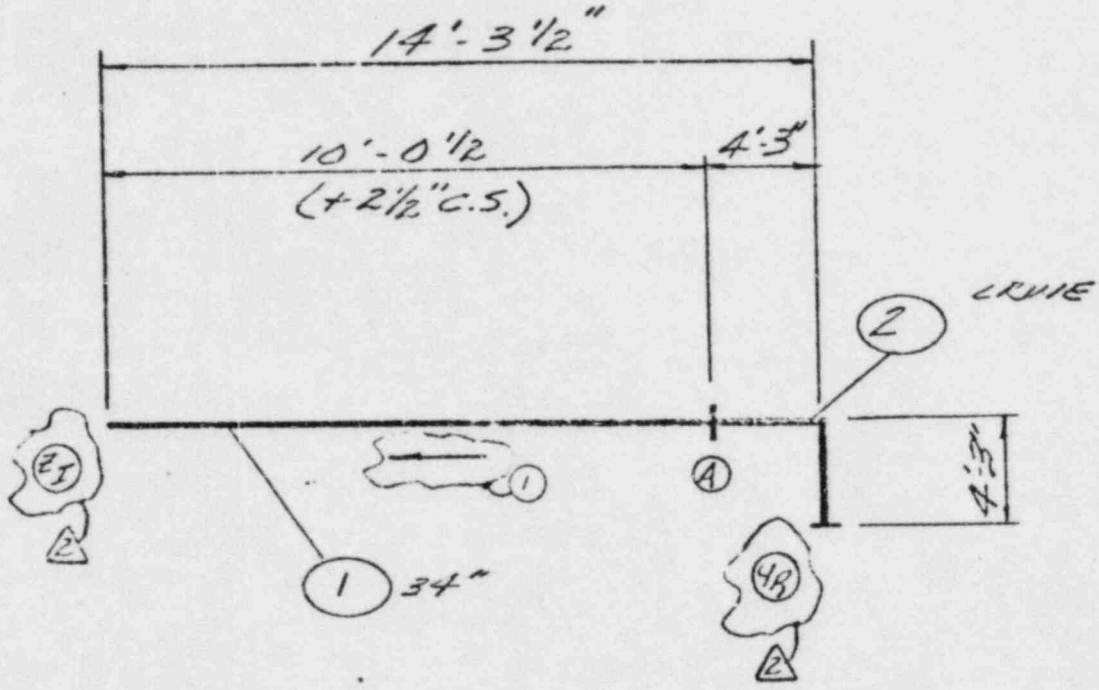
LOCATION CATAWBA UNIT #1
Charlotte N.C.
P.O. C12517

DRW'N A 3-17-78 CHK'D [illegible] 3-17-78

REV. _____ CHK'D _____

REV. _____ CHK'D _____

REV. _____ CHK'D _____



PIPE: SA-358 "ID X 1.750" WALL SA-106-C
FLG:
B. W. FITG: SA-234 WPB-W1 OR SA-234 WPC.
F. S. FITG:

PAINT FLOW ARROWS

MACHINE STUDS
PER SKETCH CT-D-2

QUALITY Control

Nuclear Safety Related

CLASS DUKE "B" LINE SPEC. PS 1500.5(01) APP. CODE Sec. III, CL 2 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 [illegible] FAB. SPECS. JS-113

REF. DRW'G NO. CH-1411-SH-1 REV 2 PRESS. 1125 PSI. TEM. 600 °F. WT 12[illegible] LBS.

PIECE MARK CT-SHD-6D (1) REGISTER [illegible]

GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE N.C.

FORM EN-102 REV 7/75
Q.A. FORM N2.1F

H.P

Register No. CT-01-36X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 3

Revision No. _____ Revision Date _____

DUKE POWER COMPANY
CATAWBA UNIT # 1

Piece Mark CT-SM-6D Job Name Shelton P.O. C12517 Contract No. 7127 Location _____

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
				HEAT NUMBER	DOCUMENT	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	PBCT CD* 3/4" x - x -	31.438" I.D X 1.750" MW. SML'S	10'-0½"					F			
	CT-01- 15-1	CS PIPE TO ASME. SA-106C									
2	LAAT C** 3/4" x - x -	31.438" I.D X 1.750" M.W. 90°	1					E			
	CT-01- 18-1	LRWE TO SA-234WPB-W									
		MADE FROM SA-515 GR.70									
		PLATE (70,000 PSI TENSILE), OR									
		TO SA-234WPC SML'S, ENDS									
		PER DET. CT-D-2.									
	3/4 x - x -	SP. END PROT. PERCT-EP-1	2					E			
	3/4 x - x -	SPIDER BRACING PER	2					E			
		CT-ES-1									

SHOP COPY LAYOUT

REVISION

Code Asme Sec. III, Cl 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS118 MFG. Code _____

FORM NPV-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 Ind. Piping, Inc. Kernersville Order No. 7128
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-Ex Prepared by ITT Grinnell Industrial Piping, Inc.

(b) National Board No. N/A

CT-SM-7A

6. The material, design, construction, and workmanship complies with ASME Code Section III, Class N-2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-7A
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 10-27-78 Signed ITT GRINNELL Ind. Piping, Inc. By [signature]
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 N. C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 10-30 1978, 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 Co.

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 10-30, 1978

[signature]
(Inspector)

Commissions N.C. - No. 878
National Board, State, Province and No.

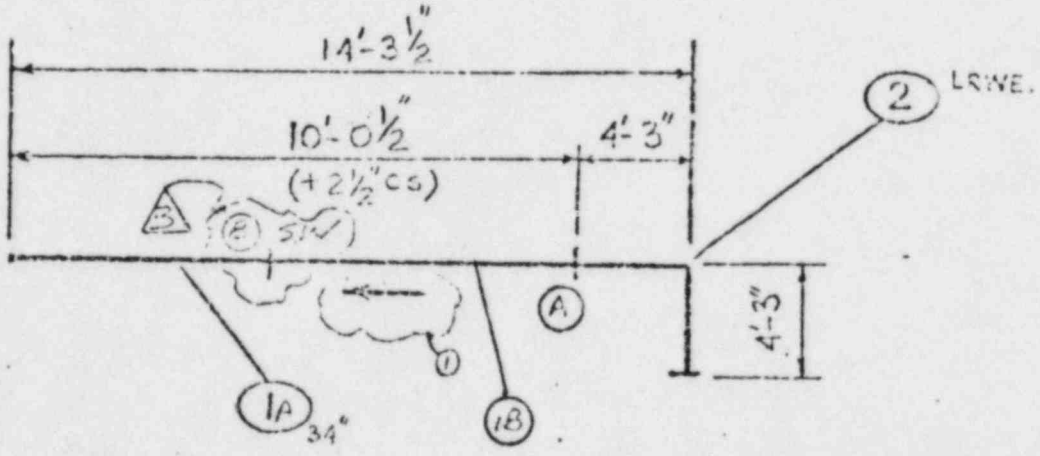
* Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1, 2 and 5 on this data report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 7, "Remarks".

ITT Grinnell Industrial Piping Inc.
BURLINGTON, N. C.

Sheet 2 of

ENG. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1
Charlotte, N. C.
P.O. C-12517

→ 7/ DRWN [illegible] CHK'D PG
REV. (1) 12-14-77 CHK'D
REV. (2) PC 3-29-78 CHK'D
REV. (3) 7/6/78 CHK'D



PIPE: 31-438 XH-750MW SA-106 C.
FLG:
D. W. FTG: SA-234WPB-W, OR SA-234WPC.
F. S. FTG:

PAINT FLOW ARROWS

MACHINE ENDS
PER SKETCH CT-D-2

QUALITY CONTROL

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5(01) APP. CODE Arts. Sec. III, Cl. 2 NO. REQ'D 1

Radiography (RT)	✓	Special Marking		Preheat	✓	Cert. of Compliance	
Mag. Particle (MT)	✓	Special Cleaning	✓	Heat Treat	✓	Mill Test Reports	✓
Penetrant (PT)		Painting	✓	Code Stamp	✓	Data Reports	✓

SYSTEM MAIN STEAM (SM) TAB SPOOL JSJ18
DRWG NO. CN-1491-SM003 (SHT 2) PRESS. 1185 psi TEMP. 600 °F WT. 2981 LBS
REMARKS CT-SM-7A REGISTER CT-01-8X

GRINNELL INDUSTRIAL PIPING, INC.

ITT GRINNELL IND. PIPING

KERNERSVILLE, N. C.

MATERIALS RECORD
PRODUCTION PLANNER

DUKE POWER COMPANY

Register No. CT- 01- 3X

Sheet 3 Of 3

Revision No. ______ Revision Date ______

Piece Mark CT- SM- 7A Job Name CATAWBA UNIT # 1 Charlotte, N.C. Contract No. 7127 Location ______

P.O. C-12517

Part Number	Size	Description	Quan or Leng	Heat Number	Document No.	Q.C.	Status	Unit	Unit Price P.O.	Inv. Vendor	Net
		Bkp- Main Steam				9-21-7[illegible]					
PS-CT-D-[illegible] CT-01-HS-1	34"	31.438" I.D X 1.750" MW. SMLS	A	J6000	[illegible]	[illegible]	[illegible] 163	F	7-15-78	[illegible]	
		CS PIPE TO ASME SA-106C	B	L3274	8'4"	Q.C. [illegible]	Q.C. [illegible]	—	7-15-78	P 7[illegible]	
[illegible] CT-01-HS-1	34"	31.438" I.D X 1.750" M.W. 90°	1			[illegible]					
		LRWE TO SA-234WPB-W									
		MADE FROM SA-515 GR.70									
		PLATE (70,000 PSI TENSILE), OR									
		TO SA-234WPC SMLS ENDS									
		PER DET. CT-D-2.								See Attached Sheet	
	34	SP. END PROT. PER CT-EP-1	2					E			
	34	SPIDER BRACINGS PER	2					E			
		CT-ES-1									

Code Zone Sec. III, Cl. 2 Class DUKE 'B' Nuclear Safety Related

Job Supplement JS 118 MFG. Code ______

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

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

SHEET 1 OF 3

CT-SM-7B

1. Fabricated by ITT Grinnell Ind. Piping, Inc., Kernersville Order No. 7127
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-18X 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 N-2

Edition 1974, Addenda Date Winter 1974, 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 CT-SM-7B
(include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 5-17-78 Signed ITT GRINNELL Ind. Piping, Inc. By Thomas A. Smith
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 Maryland and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 5/18 19 78, 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 Co.

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 5/18, 1978

Richard L. Shockey (Inspector) Commissions Maryland - 94
(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".

This form (E62) is obtainable from the ASME, 345 E. 47th St., New York, N.Y. 10017

FORM EN-101 REV 1/76
Q.A. FORM N2.1C

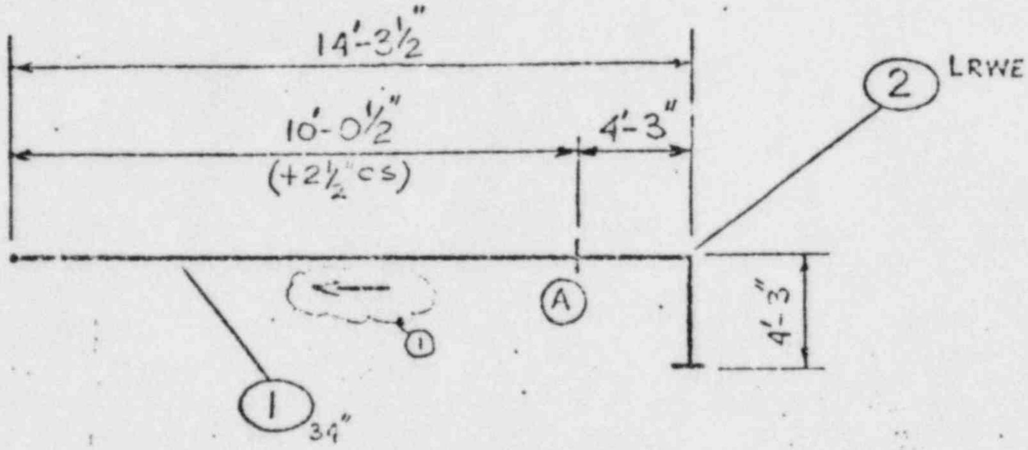
ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

sheet 2 of 3

CONT. NO. 7127
NAME DUKE POWER COMPANY
LOCATION CATAWBA UNIT #1
Charlotte, N.C.
C-12517

REDRW'N SM 10-25-77 CHK'D PG
REV. ① SM 12-14-77 CHK'D PG
REV. ② PG 2-23-78 CHK'D ZB 5-3-78
REV. ______ CHK'D ______



PIPE: 31-435 I.D. X 1.750 MW SA-106C
FLG:
B. W. FTTG: SA-234WPB-W OR SA-234WPC
F. S. FTTG:

PAINT FLOW ARROWS

MACHINE ENDS PER SKETCH CT-D-2

QUALITY CONTROL

REVISION

Nuclear Safety Related

CLASS DUKE 'B' LINE SPEC. PS 1500-5 (01) APP. CODE ASME Sec. III, Cl. 2 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 MAIN STEAM (SM) FAB. SPEC. JS 113
REF. DRW'G NO. CN-1491-SM002 PRESS. 1185 PSI. TEMP. 600 °F. WT. 12,081 LBS.
PIECE MARK CT-SM-7B ① REGISTER CT-01-18X

FORM EN-102 REV. 2/76
Q.A. FORM N2.1F

GRINNELL INDUSTRIAL PIPING, INC.

Kernersville, N.C.

Register No. CT-01-18X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 Of 3

Revision No. _____ Revision Date _____

DUKE POWER COMPANY

Piece Mark CT-SM-7B Job Name CATAWBA UNIT #1 Contract No. 7127 Location _____

C-12517

Pipe - Main Steam

PART NUMBER			DESCRIPTION	QUAN OR LTNG	QUALITY CONTROL HEAT NUMBER	QUALITY CONTROL DOCUMENTATION	QUALITY CONTROL PROCESS	ACCOUNTING/MATERIAL STATUS	U/M	UNIT PRICE P.O.	DIS VENDOR	NET
PIPCT CT-01-	EP-1	3/4"	31.43B"I.D X 1.750"MW. SMLS		L3274			C	F			
			C.S. PIPE TO ASME SA-106C					141				
LAAT CT-01-	EP-1	3/4"	31.43B"I.D X 1.750"M.W. 90°	1	KCCH	BWF-10 SMD			F.			
			L.R.W.E. TO SA-234 WPB-W									
			MADE FROM SA-515 GR.70									
			PLATE (70,000 PSI TENSILE), OR									
			TO SA-234 WPC SMLS. ENDS									
			PER DET. CT-D-2.									
		3/4	SP. END PROT. PER CT-EP-1	2					E			
		3/4	SPIDER BRACING PER	2					E			
			CT-ES-1									

Code Nuc. Sec. III Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement TS 118 MFG. Code _____

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

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

SHEET 1 OF 5

CT-SM-7D

1. Fabricated by ITT Grinnell Ind. Piping, Inc., Kernersville (Name and Address of Fabricator) Order No. 7127

2. Fabricated for Duke Power Company, Charlotte, NC (Name and Address) Order No. C-12517

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification MAIN STEAM (Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-01-37K 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 N-2

Edition 1974, Addenda Date Winter 1974, 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 NA (Name of Part – Item number, Manufacturer's name, and Identifying stamp)

Supplemental Sheets 2 ----Drawings

3,4,5 ----Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected Piece Mark Number CT-SM-7D (include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 1-26-79 Signed ITT GRINNELL Ind. Piping, Inc. (Fabricator) By [signature]

Certificate of Authorization Expires 7-16-79 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 N. C. and employed by * of Hartford, CT. have inspected the piping described in this Data Report on 1-26 1979, 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 Co.

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 1-26 1979 Barry K Bobo (Inspector) Commissions N.C. - No. 878 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-EN-101 REV. 8/77
Q. A. FORM NO. 1C

SHEET 2 OF 5

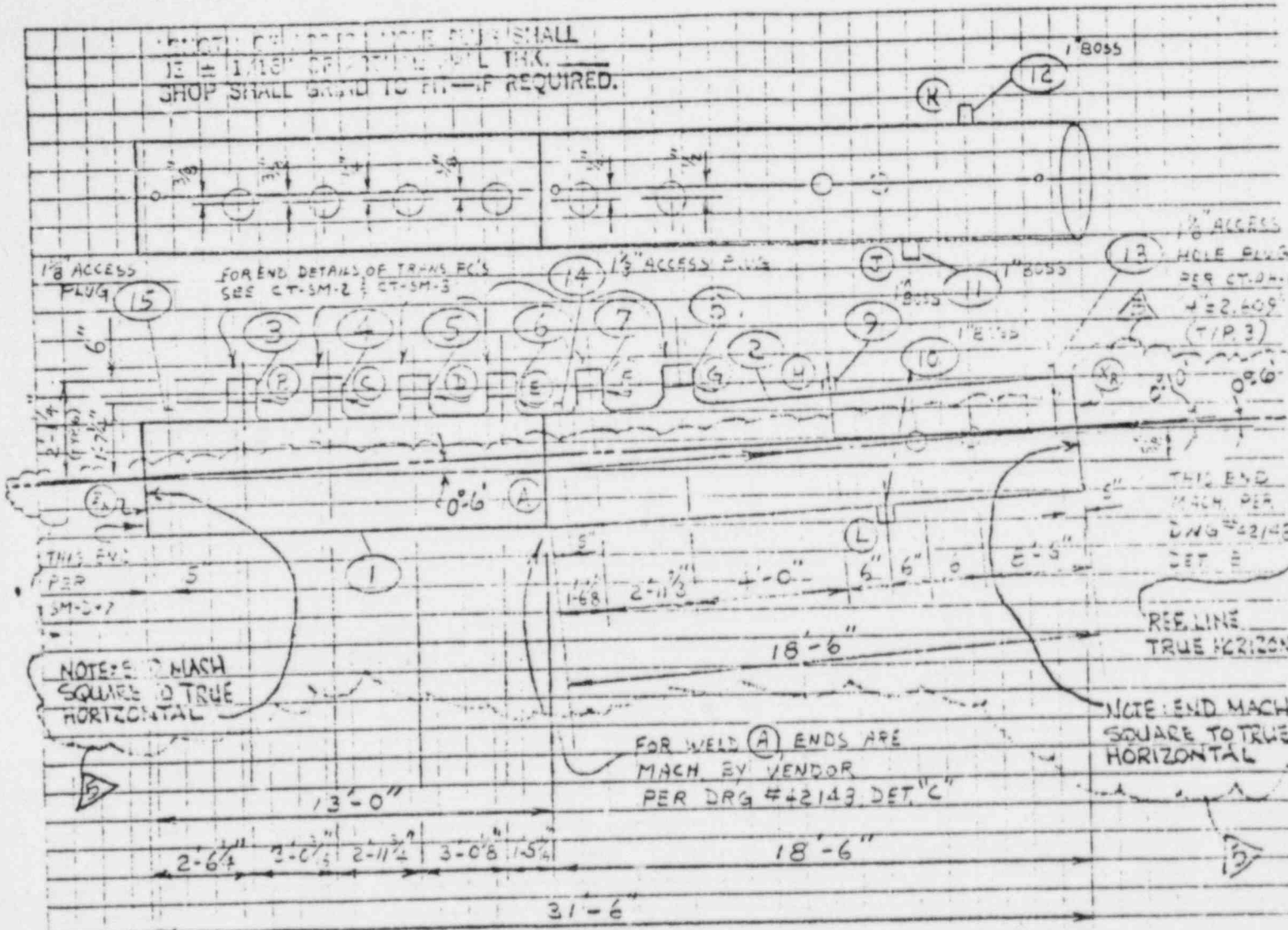
ITT Grinnell Industrial Piping Inc.

KERNERSVILLE, N. C.

NOTE: SEE NCR #IP-1720

CONT. NO. 7127
NAME DUKE POWER CO. CHARLOTTE, NC.
LOCATION CATAWBA #1
ORDER #C-12517

REDRW'N (4) SL 12-28-78 CHK'D FB 12/27/78
REV. (5) PG 1-22-79 CHK'D FB 1-22-79
REV. _____ CHK'D _____
REV. _____ CHK'D _____



PAINT FLOW ARROWS
MACH ENDS
PER SKETCH SM-D-7
(EXCEPT AS NOTED)

PIPE: 31.5 ID X 2.375 W.W. SM-104-C
ES CTT'G: TRANS PC 13" OD X 1.5" W.T. SM-105
H.H PLUG'S & BOSS SM-105

NUCLEAR SAFETY RELATED

CLASS DUKE 'B' LINE SPEC. PS 1500.5 (01) APP. CODE ASME SEC III CL 2 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 MAINSTEAM (SM) FAB. SPECS. JS 11A

REF. DRW'G NO. CN-1491-SM004 PRESS. 1135 PSI. TEMP. 600 °F. WT. 14201 LBS.

PIECE MARK CT-SM-7D REGISTER C|T | 101 | | | 217X

FORM EN-102 REV 7/78
Q.A. FORM N2.1F

H-P

GRINNELL INDUSTRIAL PIPING, INC.

KERNERSVILLE, N.C.

MATERIALS RECORD
PRODUCTION PLANNER

Register No. CT-01-37X Sheet 3 Of 35

System: Main Steam Revision No. 2 SM Revision Date 5-10-78

Piece Mark CT-SM-7D Job Name DUKE POWER COMPANY CHARLOTTE, N.C. CATAWBA UNIT #1 Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL			ACCOUNTING/MATERIAL				
				HEAT NUMBER	DOCUMENTATION	IN PROCESS	STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
1	XXXXXXXX 3L5-2.317 CT-01-111 SC #26905 HT #XAAD PE #5910	31.5" NOM. I.D X 2.375" NW.X 13'-0" LONG SAFETY VALVE HEADER MANIFOLD W/4 - 10" O.D X 1½" NOM.W. OUTLETS ALL OUTLETS AND HEADER ENDS I.D MACHINED PER (DRG. # 42148)	1	Sa Attached				E			
2	XXXXXXXX 3L5-2.317 CT-01-113 SC #26911 HT B.T.C.EN PE #5860	— — DITTO — EXCEPT MANIFOLD WILL BE 18'-6" LONG W/2 - 10" O.D X 1½" NW. OUTLETS.	1					E			
3	XXXXXXXX CT-20 05-1	10"X6" O.D. FORGED CS TRANSITION PC; MATERIAL TO ASME SA-105 HT. (1. = LENGTH = 6") (PER DET. CT-SM-2)	1					F			

Code Asme Sec III, Cl 2 Class DUKE 'B' Nuclear Safety Related

Job Supplement T.S. 113 MFG. Code

GRINNELL INDUSTRIAL PIPING, INC.

Kernersville, N.C.

FORM EN P-2 REV. 7/76
Q.A. FORM N-2.11
11-P

REVISION

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 24 Of 35

Register No. CT-01-37X

System: Main Steam

DUKE POWER COMPANY CHARLOTTE, N.C.
CATAWBA UNIT # 1

Revision No. A 15 Revision Date 4-6-78

Piece Mark CT-SM-7D Job Name Cook C-1517 Contract No. 7127 Location

ITEM	PART NUMBER	DESCRIPTION	QTY OR LENG	QUALITY CONTROL: HEAT NUMBER	QUALITY CONTROL: DOCUMENTATION	QUALITY CONTROL: IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS VENDOR	NET
4	CT-2095-2	10"XB-75O.D. FORGED C.S TRANSITION PC; MATERIAL TO ASME SA-105 HT. (L = LENGTH = 6") (PER DET. CT-SM-3)	1	See Attached Sheets				E			
5	CT-2095-2	——— DITTO ———	1					E			
6	CT-2095-2	——— DITTO ———	1					E			
7	CT-2095-2	——— DITTO ———	1					E			
8	CT-2095-2	——— DITTO ———	1					E			
9	CT-3002-2	1" (3) HCS SP. WELD BOSS TO SA-105, PER DET. SK-CT-WB-1	1					E			
10	CT-3002-2	——— DITTO ———	1					E			
11	CT-3002-2	——— DITTO ———	1					E			
12	CT-3002-2	——— DITTO ———	1					E			

Code Asme Sec. III, Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS 118 MFG. Code

FORM GN-102 REV. 7-78
Q.A. FORM N2.1F

GRINNELL INDUSTRIAL PIPING, INC.

Kernersville, N.C.

MATERIALS RECORD — Sheet 35 of 35

Register No. CT-01-37X — Revision No. A-SM — Revision Date 5-10-78

System: Main Steam — DUKE POWER COMPANY CHARLOTTE, N.C.

Piece Mark CT-SM-7D — Job Name CATAWBA UNIT #1 — Contract No. 7127 — Location

Class # C-12517

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL: HEAT NUMBER	DOCUMENTATION	IN PROCESS	ACCOUNTING/MATERIAL: STATUS	U/M	UNIT PRICE P.O.	DIS. VENDOR	NET
13	CT-4012-3	1 1/8" ACCESS HOLE PLUG PER SK. CT-AH-1, TO ASME, SA-105, H=2.609"	1					E			
		DITTO	1					E			
14	CT-4012-3	DITTO	1					E			
15	CT-4012-3	35" O.D SP. END PROT. PER SK.# CT-EP-1	2					E			
		8.750 O.D. BEVEL END PROT.	5					E			
		6" PIPE SIZE B.E. PROT.	1					E			
		35" SPIDER BRACING PER CT-ES-1	2					E			

Nuclear Safety Related

Code Asme Sec. III, Cl. 2 — Class DUKE 'B'

Job Supervisor JS 118 — MFG. Code

CT-SM-7C

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

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

ICES

1. Fabricated by ITT Grinnell Ind. Piping, Inc. Kernersville Order No. 7128
(Name and Address of Fabricator)

2. Fabricated for Duke Power Company, Charlotte, NC Order No. C-12517
(Name and Address)

3. Owner Duke Power Company 4. Location of Plant Newport, SC

5. Piping System Identification Main Steam
(Brief description of intended use, main coolant etc.)

(a) Drawing No. CT-1 [illegible] 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 N-2

Edition 1974, Addenda Date Winter 1974, 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
3,4,5 ----Bill (s) of Material

7. Shop Hydrostatic Test Field psi.

8. Description of piping inspected: Piece Mark Number CT-SM-7C
(Include – mark no. – material spec. – nom. pipe size – schedule or thickness – length – fittings – flanges, etc.)

See Attached Sheets

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 10-30-78 Signed ITT GRINNELL Ind. Piping, Inc. By [signature]
(Fabricator)

Certificate of Authorization Expires 7-16-79 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 [illegible] and employed by * of Hartford, CT. have inspected the piping described in this Data Report on [illegible], 19[illegible], 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 Co.

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 [illegible], 19[illegible]

[signature] Commissions [illegible]
(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".

ITT Grimnell Industrial Piping Inc.

KERNERSVILLE, N. C.

CONT. NO. 7127

NAME DUKE POWER COMPANY

LOCATION CATAWBA UNIT #1
Charlotte, N.C.
C-12517

REDRW'N ... 10-28-77 CHK'D ...

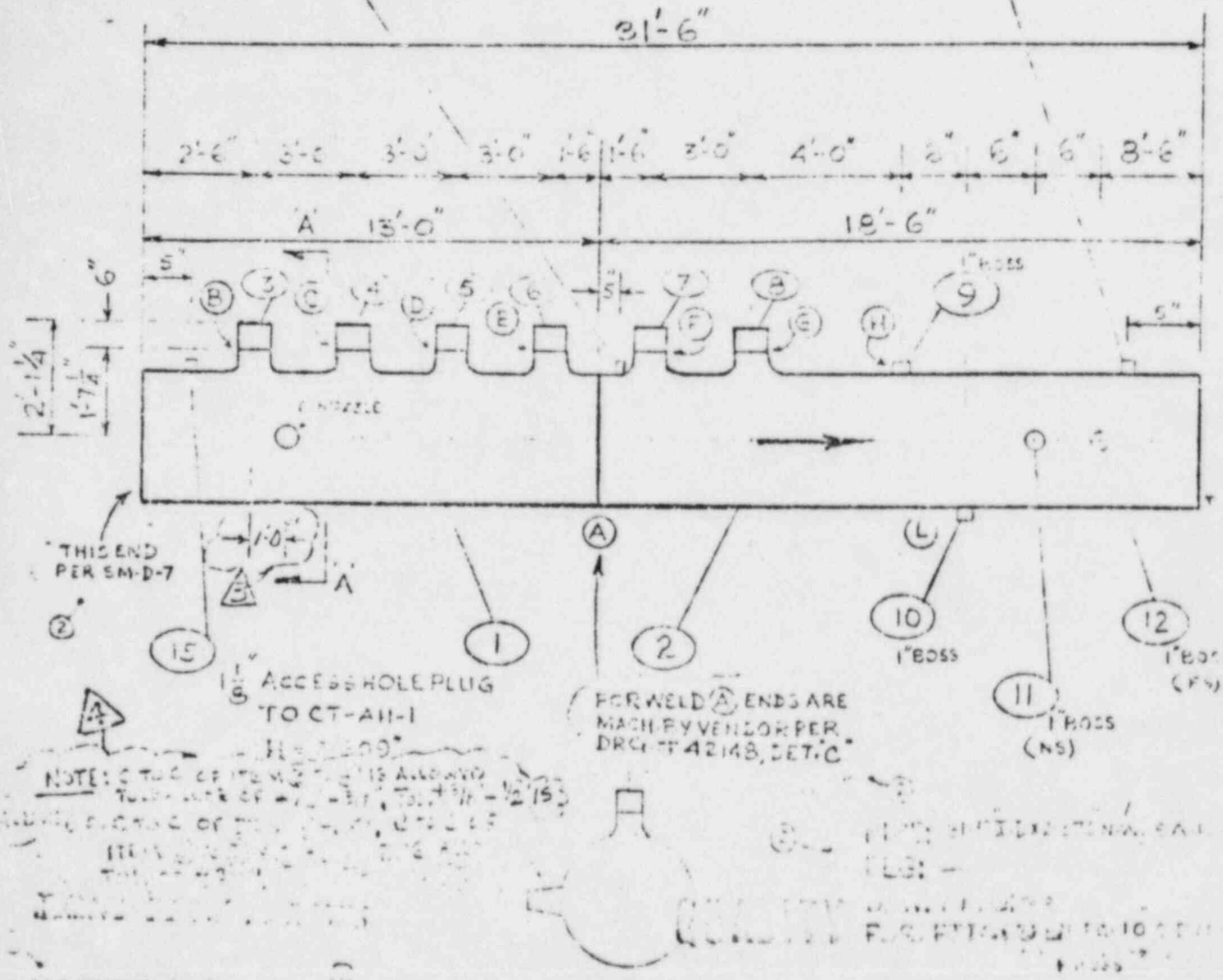
REV. ... 12-14-77 CHK'D ...

REV. ... CHK'D ...

REV. ... CHK'D ...

1½" ACCESS HOLE PLUG TO CT-AH-1 H=2.609"

1⅛" ACCESS HOLE PLUG TO CT-AH-1 H=2.609"



Nuclear Safety Related

CLASS "B" LINE SPEC. ... APP. CODE ... NO. REQ'D

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 ... FAB. SPECS. ...

REF. DRW'G NO. ... PRESS. ... PSI. TEMP. ... °F. WT. ... LBS.

PIECE MARK CT-SM-7C REGISTER CT-01-2

GRINNELL INDUSTRIAL PIPING, INC. 111 GRINNELL WAY, PHILA.

KERNERSVILLE, N. C.

Register No. CT-01-28X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 3 of 5

DUKE POWER COMPANY
CATAWBA UNIT # 1
Charlotte, N.C.

Revision No. Revision Date

Piece Mark CT-SM-7C Job Name C-12517 Contract No 71[illegible] Location

PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL HEAT NUMBER	DOCUMENTATION	MAT'L	ACCOUNTING MATERIAL U/M	UNIT PRICE P.O.	DIS %	NET
CT-SM-2	S/S- MAIN STEAM								
3"I.S.-2.3/7	3"I.S. NOM. I.D. X 2.375" NW X	1				E			
	13'-0" LG. SAFETY VALVE								
	HEADER MANIFOLD W/4-10"								
	O.D. X 1½" NW OUTLETS AND								
	1-6" SCH 80 OUTLET. (NS)								
	(PER DRG # 42148)								
3"I.S.-2.3/7	—— DITTO — EXCEPT	1				E			
	MANIFOLD WILL BE 18'-6" LG								
	W/2-10" O.D. X 1½" NW OUTLETS								
	(3)								
CT-209S-1	(10"X6.625"40) FORGED CC	1				E			
	TRANSITION PC. MATERIAL								
	TO ASME SA-105 H.T. (2)						L		
	(L=LENGTH=6")								
	(PER DET. CT-SM-2)								

Code Nuc. Sec. III. Cl. 2 Class DUKE 'B'

Nuclear Safety Related

Job Supplement JS 118 MFG. Code

GRINNELL INDUSTRIAL PIPING, INC. ITT GRINNELL IND. PIPING

KERNERSVILLE, N. C.

Register No. CT-01-28X

MATERIALS RECORD
PRODUCTION PLANNER

Sheet 4 of 5

DUKE POWER COMPANY
CATAWBA UNIT #1
Charlotte, N.C.
P.O. C-12517

Revision No. Revision Date

Piece Mark CT-SM-7C Job Name SYS-MAIN STEAM Contract No. 7121 Location

ITEM	PART NUMBER	DESCRIPTION	QUAN OR LENG	QUALITY CONTROL HEAT NUMBER	DOCUMENTATION	IN PROCESS	ACCOUNTING-MATERIAL STATUS	U/M	UNIT PRICE P.O.	DIS. LINDOR	NET
1	CT-2005-2	10"x8"-0" O.D. FORGED C.S TRANSITION PC. MATERIAL TO ASME SA-105 HT. (L = LENGTH = 6") (PER DET. CT-SM-3)	1					E			
2	CT-2005-2	——— DITTO ———	1					E			
3	CT-2005-2	——— DITTO ———	1					E			
4	CT-2005-2	——— DITTO ———	1					E			
5	CT-2005-2	——— DITTO ———	1					E			
6	CT-3002-2	1" [illegible] C.S. SW WELD BOSS TO SA-105 PER DET SK-CT-WB-1	1					E			
7	CT-3002-2	——— DITTO ———	1					E			
8	CT-3002-2	——— DITTO ———	1					E			
9	CT-3002-2	——— DITTO ———	1					E			

Code Nuc. Sec. III, Cl. 2 Class DUKE 'B' Nuclear Safety Related

Job Supplement JS 118 MFG. Code

GILBERT/COMMONWEALTH ... INDUSTRIAL PIPING, INC. KERNERSVILLE, N. C.

MATERIALS RECORD
PRODUCTION PLANNER

Register No. CT-01-28X

Sheet 5 of 5

Revision No. [illegible] Revision Date

Piece Mark CT-SM-7C Job Name DUKE POWER COMPANY CATAWBA UNIT #1 Charlotte, N.C. P.O.-C12517 Contract No. 712[illegible] Location

Item	Part Number SVS - Main Steam		Description	Quan or Leng.	Quality Control: Heat Number	Document	In Proc.	Status	U/M	Accounting/Material: Unit Price P.O.	Dis. Vendor	Net
13	CT-4012-3	L142	1 1/8" ACCESS HOLE PLUG PER SK: CT-AH-1, TO ASME SA-105, H=2.609"	1					E			
14	CT-4012-3	L112	DITTO	1					E			
15	CT-4012-3	L112	DITTO	1					E			
			35" O.D. SP. END PROT. PER SK.# CT-EP-1	2					E			
			8.75" O.D. BEVEL END PROT.	5					E			
			6" PIPE SIZE B.E. PROT.	1					E			
			35" SPIDER BRACING PER CT-ES-1	2					E			

Nuclear Safety Related

Code ASME Sec. III, Cl. 2 Class DUKE 'B'

Job Supplement IS 118 MFG. Code