

FORM N-1 MANUFACTURER DATA REPORT FOR NUCLEAR VESSELS

As required by the Provisions of the ASME Code Rules P.O. # 18MF3555

1. Manufactured by RICHMOND ENGINEERING COMPANY, INC. BOX 25180, RICHMOND, VA 23260
(Name and address of Manufacturer)
2. Manufactured for WESTINGHOUSE ELECTRIC CORP. BOX 225, BUFFALO, N.Y. 14240
(Name and address of Purchaser)
3. Type HORIZ. Kind HEAT EX. Vessel No. (N-241240) (Serial or Vessel No.) (Type, Location, Heat Ex.) Nat'l No. 76150 Yr. Built 1978
(Serial No.) (Main No.)
- 3a. Applicable ASME Codes Section III, Edition 1977 Addenda date Summer '77 Case No.
Class I

Items 4-8 incl. to be completed for single end vessels, jackets of jacketed vessels, or shells of heat exchangers.

4. Shell Material T.S. Nominal Thickness in. Corrosion Allowance in. Dia. ft. in. Length ft. in.
(Kind & Spec. No.) (Min. of range specified)

5. Seams Long ILT R.T. Efficiency %
Circ. ILT R.T. No. of Courses

6. Heads (a) Material		(b) Material						
Location	Thickness	Crown Radius	Knurled Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. (Concave or Convex)
(a)								
(b)								

If removable, bolts used (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or attach sketch)

7. Jacket Closure (Describe as open & weld, hot, etc. If bar give dimensions, describe or sketch)
Drop Weight Pneumatic
8. Design Pressure psi at °F at temp. of °F Charpy Impact Hydrostatic or } Test
Combination Pressure psi

Items 9 and 10 to be completed for tube sections.

9. Tube Sheet: Stationary. Material SA-402-706 Dia. 25-1/2 in. Thickness in. Attachment WELDED
(Kind & Spec. No.) (Subject to press.) (Welded, Bolted)
Floating. Material Dia. in. Thickness in. Attachment
(Kind & Spec. No.)

10. Tubes: Material SA-111-706 Dia. 3/4 in. Thickness .049 inches Number 39 Type STRAIGHT
(Kind & Spec. No.) (Straight or U)

Items 11 to 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell Material SA-402-706 10,000 Nominal 1/2 Thickness in. Corrosion Allowance 0 in. Dia. 0 ft. 5-1/2 in. Length 2 ft. 3/4 in.
(Kind & Spec. No.) (Min. of range specified)

12. Seams Long BUTT WELD ILT R.T. NO Efficiency 70
(Welded, Bolted, Single) (Yes or No) R.T. No. of Courses
Circ. ILT R.T. No. of Courses

13. Heads (a) Material		(b) Material						
Location	Thickness	Crown Radius	Knurled Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. (Concave or Convex)
(a) <u>Top</u>	<u>3/4</u>							
(b) Channel								
(c) Floating								

If removable, bolts used (at) SA 193-B7-115,000 (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or attach sketch)

14. Design Pressure 150 psi at 500 °F Charpy Impact Hydrostatic or } Test
Combination Pressure 251 psi

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number _____ Size _____ Location _____

16. Nozzles: CONT. PAGE 2

Purpose (Inlet, Outlet, Drain)	Number	DI. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
INLET	1	1-1/2"	FLG	SA-402-706	3/16" PL	SA-285 C	WELDED
OUTLET	1	1-1/2"	FLG	SA-402-706	3/16" PL	SA-285 C	WELDED
DRAIN	2	3/4"	CPLG	SA-402-706	3000#	-----	WELDED

17. Inspection Manholes, No. _____ Size _____ Location _____
 Openings: Handholes, No. _____ Size _____ Location _____
 Threaded, No. _____ Size _____ Location _____

18. Supports: Skin _____ Legs _____ Other NONE _____ Attached _____
 (Yes or No) (Number) (Number) (Describe) (Where & How)

19. Remarks: HEAT EXCHANGER FOR A.C. MOTOR FRAMES

(Brief description of service for which vessel was designed)

CERTIFICATION OF DESIGN

Design information on file at RICHMOND ENGINEERING CO., INC.
 Stress analysis report on file at RICHMOND ENGINEERING CO., INC.
 Design specifications certified by RICHARD H. LEWIS Prof. Eng. State PEKY Reg. No. 22494-E
 Stress analysis report certified by N/A Prof. Eng. State _____ Reg. No. _____

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules of construction of the ASME Code, Section III.

Date JUL 13 1978 19 _____ Signed Richmond Engr. Co. *[Signature]*
 (Handwritten)

Certificate of authorization Expires (EXT Aug. 16, 1978) 6/16/78 Certificate of Authorization No. 1158

CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY RICHMOND ENGINEERING CO., INC. at RICHMOND, VA

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and for the State of OHIO/PA and employed by ROYAL INDENTITY CO. of NEW YORK, NY

have inspected the pressure vessel described in this Manufacturer's Data Report on JUL 12 1978 and state that to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel 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 pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date JUL 13 1978 19 _____ NR# 5240 PA# WG1870 OHIO
 Inspector's Signature _____ Commission _____ National Board, State, Province and No. _____

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and for the State of _____ and employed by _____ of _____

have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____ included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed and assembled this pressure vessel in accordance with the ASME Code, Section III. The described vessel was inspected and subjected to a hydrostatic test and/or pneumatic test of _____ psi.

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

Date _____ 19 _____
 Inspector's Signature _____ National Board, State, Province and No. _____

FORUMS MANUFACTURERS DATA REPORT FOR NUCLEAR VESSELS

An required by the Provisions of the ASME Code Rules P.O. # 18MF3556

1. Manufactured by RICHMOND ENGINEERING COMPANY, INC. BOX 25189, RICHMOND, VA 23260
(Name and address of Manufacturer)
2. Manufactured for WESTINGHOUSE ELECTRIC CORP. BOX 225, BUFFALO, N.Y. 14240
(Name and address of Purchaser)
3. Type HORIZ. Kind HEAT EX. Vessel No. (N-241210) () Nat'l Bd. No. 76147 Yr. Built 1978
(Horiz. or Vert.) (Tank, Jacketed, Heat Ex.) (Mfrs. Serial No.) (Serial & Model No.)
- 3a. Applicable ASME Codes Section III, Edition 1977 Addenda date Summer '77 Class 3 Cont. No.

Items 1-8 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

4. Shell Material T.S. Nominal Thickness in. Corrosion Allowance in. Dia. in. Length in.
(Kind & Spec. No.) (Min. of range specified)
5. Seams: Long H.T. R.T. Efficiency %
Girth H.T. R.T. No. of Courses
6. Heads (a) Material T.S. (b) Material T.S.
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Central Apex Angle Hemispherical Radius Flat Diameter Side to Press. (Concave or Convex)
(a)
(b)

If removable, bolts used (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or attach sketch)

7. Jacket Closure (Describe as gage & weld, etc. If bar give dimensions, describe or sketch)
Drop Weight Pneumatic
Charpy Impact Hydrostatic or Test Pressure psi
8. Design Pressure? psi at °F at temp. of °F. Combination

Items 9 and 10 to be completed for tube sections.

9. Tube Sheet Stationary. Material SB-402-706 Dia. 26-1/2 in. Thickness in. Attachment WELDED
(Kind & Spec. No.) (Subject to press.) (Welded, U Bolt)
10. Tubes: Material SB-111-706 3/4 in. Thickness .049 inches Number 39 Type STRAIGHT
(Kind & Spec. No.) (Straight or C)

Items 11 to 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material SB-402-706 40,000 Nominal 1/2 Thickness in. Corrosion Allowance 0 in. Dia. 0 in. Length 2 ft. 3/4 in.
(Kind & Spec. No.) (Min. of range specified)
12. Seams: Long BUTT WELD H.T. R.T. NO Efficiency 70 %
(Welded, Bolt, Single) (Yes or No)
13. Heads (a) Material SA515-70 70,000 (b) Material T.S. (c) Material T.S.
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Central Apex Angle Hemispherical Radius Flat Diameter Side to Press. (Concave or Convex)
(a) XXXXXX 3/4" 7"x26-1/2"
(b) Channel
(c) Floating

SA 193-B7-115,000
If removable, bolts used (H0) 7/16" x 5" LG
Material, Spec. No., T.S., Size, Number
Drop weight Pneumatic
Charpy Impact Hydrostatic or Test Pressure psi
14. Design Pressure? 150 psi at 300 °F at temp. of °F. Combination

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number _____ Size _____ Location _____

16. Nipples: CONT. PAGE 2

Where (Inlet, Outlet, Drain)	Number	Size	Type	Material	Thickness	Reference Material	How Attached
INLET	1	1-1/2"	FLG	SB102-706	3/16" PL	SA-285 C	WELDED
OUTLET	1	1-1/2"	FLG	SB-402-706	3/16" PL	SA-285 C	WELDED
DRAIN	2	3/4"	CPLG	SB-402-706	30000	-----	WELDED

17. Inspection Manholes, No. _____ Size _____ Location _____

Opening: Manholes, No. _____ Size _____ Location _____

Threaded, No. _____ Size _____ Location _____

18. Supports: Skin _____ Lugs _____ Legs _____ Other: NOSE _____ Attached _____ (Where & How)

(Yes or No) (Number) (Number) (Describe)

19. Remarks: HEAT EXCHANGER FOR A.C. MOTOR FRAMES

(Brief description of service for which vessel was designed)

CERTIFICATION OF DESIGN

Design information on file at RICHMOND ENGINEERING CO., INC.

Stress analysis report on file at RICHMOND ENGINEERING CO., INC.

Design specifications certified by RICHARD H. LEIDON Prof. Eng. State PENN Reg. No. 77624-E

Stress analysis report certified by N/A Prof. Eng. State _____ Reg. No. _____

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules of construction of the ASME Code, Section III.

Date JUL 13 1978 Signed Richmond Engr. Co., Inc. (Manufacturer)

Certificate of authorization Expires (EXT. Aug 16, 1978) 6/16/78 Certificate of Authorization No. 1138

CERTIFICATE OF SHIP INSPECTION

VESSEL MADE BY RICHMOND ENGINEERING CO., INC. at RICHMOND, VA

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 OHIO/PA and employed by ROYAL INDEMNITY CO. NEW YORK, NY

have inspected the pressure vessel described in this Manufacturer's Data Report on JUL 13 1978 and state that to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel 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 pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date JUL 13 1978 NB# 5240 - PA# WC1870 - OHIO

Inspector's Signature _____ Commissioner _____ National Board, State, Province and No. _____

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of _____ and employed by _____

have inspected the pressure vessel described in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as not included in the certificate of ship inspection have been inspected by me and that to the best of my knowledge and belief the Manufacturer has constructed and assembled this pressure vessel in accordance with the ASME Code, Section III. The described vessel was inspected and subjected to a hydrostatic test and/or Pneumatic Test of _____

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

Date _____ Inspector's Signature _____ Commissioner _____ National Board, State, Province and No. _____

FORM N-1 MANUFACTURER'S DATA REPORT FOR NUCLEAR VESSELS As required by the Provisions of the ASME Code Rules P.O. # 18MF3556

1. Manufactured by RICHMOND ENGINEERING COMPANY, INC. BOX 25189, RICHMOND, VA 23260
(Name and address of Manufacturer)
2. Manufactured for WESTINGHOUSE ELECTRIC CORP. BOX 225, BUFFALO, N.Y. 14240
(Name and address of Purchaser)
3. Type HORIZ. Kind HEAT EX. Vessel No. (N-24) 920 Serial No. 76148 Date 1978
(Serial or Vess.) (Type, Jacketed, Heat Ex.) (Mfg. Serial No.) (Date of Build No.)
3a. Applicable ASME Codes: Section III, Edition 1977 Addenda date Summer '77 Case No. 3
Class 3

Items 4-8 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

4. Shell Material T.S. Kind Steel Thickness in. Allowance in. Dia. in. Length ft. in.
(Kind & Spec. No.) (Min. of range specified)

5. Seams Long H.T. R.T. Efficiency 70
Girth H.T. R.T. No. of Courses 1

6. Heads (a) Material T.S. (b) Material T.S.
Location Thickness Crown Radius Elliptical Radius Conical Apex Angle Hemispherical Radius Flat Diameter Size to Press. (Cover or Concourse)
(a) Top, bottom, ends
(b) None

If removable, bolts used (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or attach sketch)

7. Jacket Closure (Describe or attach sketch)
Deep Sight Pneumatic
Cherry Impact Hydrostatic or Test Pressure psi
8. Design Pressure psi or °F at temp. of °F Combination Test Pressure psi

Items 9 and 10 to be completed for tube sections.

9. Tube Sheet Stationary Material SA-402-706 Dia. 26-1/2 in. Thickness 1 in. Attachment WELDED
(Kind & Spec. No.) (Union to press) (Welded, Bolted)
Flanging Material SA-402-706 Dia. 26-1/2 in. Thickness 1 in. Attachment WELDED
(Kind & Spec. No.)

10. Tubes Material SA-111-706 3/4 in. Thickness .049 inches Number 9 Type STRAIGHT
(Kind & Spec. No.) (Straight or U)

Items 11 to 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell Material SA-402-706 40,000 Nominal 1/2 Corrosion 0 in. Dia. 0 ft. 5-1/2 Length 2 ft. 3/4
(Kind & Spec. No.) (Min. of range specified)

12. Seams Long BUTT WELD H.T. NO Efficiency 70
(Welds, Bolt, Single) (Type of Seal)
Girth H.T. R.T. No. of Courses 1

13. Heads (a) Material SA-111-706 70,000 (b) Material T.S. (c) Material T.S.
Location Thickness Crown Radius Elliptical Radius Conical Apex Angle Hemispherical Radius Flat Diameter Size to Press. (Cover or Concourse)
(a) Top, bottom, ends 3/4 in. 7' x 26.3/2"
(b) Channel
(c) Flanging

If removable, bolts used in SA 193-B7-115,000 (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or attach sketch)
Deep Sight Pneumatic
Cherry Impact Hydrostatic or Test Pressure 251 psi

14. Design pressure 150 psi at 300 °F at temp. of °F Combination Test Pressure 251 psi

15. Attach Heat Treatment. 1. Test when intended as a steam pressure vessel with a maximum temperature above applicable ASME Code limits. 2. Test when intended as a steam pressure vessel with a maximum temperature above applicable ASME Code limits. 3. Test when intended as a steam pressure vessel with a maximum temperature above applicable ASME Code limits.

Items below to be completed for all vessels where applicable.

13. Safety Valve Outlets: Number _____ Size _____ Location _____

14. Nozzles: CONT. PAGE 2

Purpose (Inlet, Outlet, Drain)	Number	Size	Type	Material	Thickness	Brin. Treatment	How Attached
INLET	1	1-1/2"	FLG	SA-402-706	3/16" PL	SA-285 C	WELDED
OUTLET	1	1-1/2"	FLG	SA-402-706	3/16" PL	SA-285 C	WELDED
DRAIN	2	3/4"	CPLG	SA-402-706	3000F	-----	WELDED

17. Inspection Manholes, No. _____ Size _____ Location _____
Openings: Handholes, No. _____ Size _____ Location _____
Threaded, No. _____ Size _____ Location _____

18. Supports: Skin _____ Legs _____ Other: NONE Attached _____
(Yes or No) (Number) (Describe) (Where & How)

19. Remarks: HEAT EXCHANGER FOR A.C. MOTOR FRAMES

(Brief description of service for which vessel was designed)

CERTIFICATION OF DESIGN	
Design information on file at	RICHMOND ENGINEERING CO., INC.
Stress analysis report on file at	RICHMOND ENGINEERING CO., INC.
Design specifications certified by	RICHARD H. LEMMON
Stress analysis report certified by	N/A
Prof. Eng. Name	PERCY Reg. No. 22496-E
Prof. Eng. Date	Reg. No. _____

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules of construction of the ASME Code, Section III.

Date JUL 13 1978 19 _____ Sign: _____ Richmond Engr. Co., Inc. (Manufacturer)

Certificate of authorization Expires (EXT. Aug. 16, 1978) 6/16/78 Certificate of Authorization No. 1132

CERTIFICATE OF SHOP INSPECTION	
WELDED MADE BY	RICHMOND ENGINEERING CO., INC. at RICHMOND, VA
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	OHIO/PA and employed by
ROYAL INDemnITY CO. NEW YORK, NY	
I have inspected the pressure vessel described in this Manufacturer's Data Report on	JUL 13 1978
and state that to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel 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 pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.	
Date	JUL 13 1978
Inspector's Signature	NB# 5240 - PA# WC1870 - OHIO
Commission	National Board, State, Province and No.

CERTIFICATE OF FIELD ASSEMBLY 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	and employed by
I have observed the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to in this Data Report	not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the Manufacturer has constructed and assembled this pressure vessel in accordance with the ASME Code, Section III. The described vessel was inspected and subjected to a hydrostatic test and/or Fracture Test of
psi.	
By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.	
Date	
Inspector's Signature	Commission
	National Board, State, Province and No.

1. Manufacturer: **PIDGENT ENGINEERING ASSOCIATES, INC.** BOX 2149, ALBANY, N.Y. 12212

2. Manufactured for: **WESTINGHOUSE ELECTRIC CORP.** BOX 223, BUFFALO, N.Y. 14240

3. Type: **HORIZ.** Kind: **HEAT EX.** Vessel No.: **(H-2412-39)** Nat'l. Bd. No.: **76149** Vs. Buil.: **1975**

3a. Applicable ASME Code: Section III, Edition: **1977** Addenda date: **Summer '77** Case No.:
Class: **3**

Items 4-8 incl. to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

4. Shell Material: T.S. Nominal Thickness: **in.** Corrosion Allowance: **in.** Dia.: **in.** Length: **ft.** in.

5. Seams: Long: **H.T.** R.T. Efficiency: **%**

Circle: **H.T.** R.T. No. of Courses:

6. Heads (a) Material: T.S. (b) Material: T.S.
Location: Thickness: Crown Radius: Elliptical Ratio: Conical Apex Angle: Hemispherical Radius: Flat Diameter: Side to Profile: (Concave or Convex)

If removable, bolts used: (Material, type, size, etc., show, number) Other fastening: (Describe or attach sketch)

7. Jacket Closure: (Describe as above & weld, bolt, etc. If not give dimensions, describe in sketch)

8. Design Pressure: **psi** or **%** at temp. of **°F.** Combination: **Test Pressure: psi**

Items 9 and 10 to be completed for tube sections.

9. Tube Sheets: Stationary. Material: **SA-402-706** Dia.: **26-1/2** in. Thickness: **in.** Attachment: **WELDED**

Flange: Material: Dia.: Thickness: Attachment:

10. Tubes: Material: **SA-111-706** Dia.: **3/4** in. Thickness: **.049** inches Number: **39** Type: **STRAIGHT**

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material: **SA-402-706** Dia.: **5-1/2** in. Thickness: **1/2** in. Corrosion Allowance: **0** in. Length: **3** ft. **3/4** in.

12. Seams: Long: **BUTT WELD** H.T. R.T. Efficiency: **70**

Circle: **H.T.** R.T. No. of Courses:

13. Heads (a) Material: **SA-515-70** Dia.: **70.000** (b) Material: T.S. (c) Material: T.S.

Location: Thickness: Crown Radius: Elliptical Ratio: Conical Apex Angle: Hemispherical Radius: Flat Diameter: Side to Profile: (Concave or Convex)

SA 103-B7-115,000

If removable, bolts used for: (Material, type, size, etc., show, number) Other fastening: (Describe or attach sketch)

14. Design pressure: **150** psi at **300** °F. Test Pressure: **251** psi

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number _____ Size _____ Location _____
 16. Nozzles: CONT. PAGE 2

Purpose (Inlet, Outlet, Drain)	Number	Size	Type	Material	Thickness	Reinforcement Material	How Attached
INLET	1	1-1/2"	FLG	SA-402-706	3/16" PL	SA-285 C	WELDED
OUTLET	1	1-1/2"	FLG	SA-402-706	3/16" PL	SA-285 C	WELDED
DRAIN	2	3/4"	CPLG	SA-402-706	30R02	-----	WELDED

17. Inspection Manholes, No. _____ Size _____ Location _____
 Openings: Handholes, No. _____ Size _____ Location _____
 Threaded, No. _____ Size _____ Location _____

18. Supports: Skirt _____ Legs _____ Legs _____ Other NONE _____ Attached _____
 (Type or No.) (Number) (Number) (Describe) (Where & How)

19. Remarks: HEAT EXCHANGER FOR A.C. MOTOR FRAMES

(Brief description of vessel for which vessel was designed)

CERTIFICATION OF DESIGN			
Design Information on file at	RICHMOND ENGINEERING CO., INC.		
Stress analysis report on file at	RICHMOND ENGINEERING CO., INC.		
Design specifications verified by	RICHARD H. LEMMON	Prof. Eng. State	PENNY Reg. No. 2219A-E
Stress analysis report certified by	N/A	Prof. Eng. State	Reg. No. _____

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules of construction of the ASME Code, Section III.

Date JUL 13 1978 19 Signed Richmond Engr. Co., Inc. C. H. Messenger, Jr. (Manufacturer)

Certificate of authorization Expires (EXT. Aug 16, 1978) 6/16/78 Certificate of Authorization No. 1738

CERTIFICATE OF SHOP INSPECTION	
VESSEL MADE BY	RICHMOND ENGINEERING CO., INC. of RICHMOND, VA
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 OHIO/PA and employed by ROYAL INDEMNITY CO. of NEW YORK, NY	
have inspected the pressure vessel described in this Manufacturer's Data Report on JUL 13 1978 19, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel 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 pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.	
Date JUL 13 1978 19 Signed T. J. Pincus (Inspector's Signature)	NR# 5240 - PA# WC1870 - OHIO (National Board, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY 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 _____ and employed by _____ of _____	
have reviewed the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to in this report _____ not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed and assembled this pressure vessel in accordance with the ASME Code, Section III. The described vessel was inspected and subjected to a hydrostatic test and _____ (Hydrostatic Test of) _____	
By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.	
Date _____ Signed _____ (Inspector's Signature)	