

**FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
**As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1**

1. Manufactured and certified by ENERGY EXCHANGER COMPANY, 1844 NORTH GARNETT ROAD, TULSA, OK 74116  
(Name and address of Manufacturer)

2. Manufactured for SOUTHERN COMPANY SERVICES, INC. 42 INVERNESS CENTER PARKWAY BIRMINGHAM, AL 35242  
(Name and address of Purchaser)

3. Location of installation MISSISSIPPI POWER CO., DEKALB MS.  
(Name and address)

4. Type: HORIZ. HEAT EXCHANGER X-7938 A  
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exh., etc.) (Mfg's serial No.)

X-7938-A REV. 3 6057 2012  
(CRN) (Drawing No.) (Nat'l Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 2007 EDITION, '09 ADD.    
(Edition and Addenda (date)) (Code Case No.) (Special Service per UG-120(d))

Items 6-11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multichamber vessels.

6. Shell (a) No. of course(s): 2 (b) Overall length (ft & in.): 10'-5 1/8"

| Course(s) |               |                   | Material            |  | Thickness |       | Long. Joint (Cat. A) |                  |      | Circum. Joint (Cat. A, B, & C) |                  |      | Heat Treatment |      |
|-----------|---------------|-------------------|---------------------|--|-----------|-------|----------------------|------------------|------|--------------------------------|------------------|------|----------------|------|
| No.       | Diameter, in. | Length (ft & in.) | Spec./Grade or Type |  | Nom.      | Corr. | Type                 | Full, Spot, None | Eff. | Type                           | Full, Spot, None | Eff. | Temp.          | Time |
| 1         | 26" I.D.      | 6'-0"             | SA-516-70           |  | 3/8"      | 1/8"  | 1                    | SPOT             | 0.85 | 1 (1)                          | SPOT             | 0.85 | ---            | ---  |
| 1         | 26" I.D.      | 4'-5 1/8"         | SA-516-70           |  | 3/8"      | 1/8"  | 1                    | SPOT             | 0.85 | 1 (1)                          | SPOT             | 0.85 | ---            | ---  |
|           |               |                   |                     |  |           |       |                      |                  |      |                                |                  |      |                |      |

7. Heads: (a) SA-516-70 (b)   
(Mat'l Spec. No., Grade or Type) (H.T. - Time & Temp.) (Mat'l Spec. No., Grade or Type) (H.T. - Time & Temp.)

|     | Location (Top, Bottom, Ends) | Thickness |       | Radius |         | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure |         | Category A |                  |      |
|-----|------------------------------|-----------|-------|--------|---------|------------------|--------------------|----------------------|---------------|------------------|---------|------------|------------------|------|
|     |                              | Min.      | Corr. | Crown  | Knuckle |                  |                    |                      |               | Convex           | Concave | Type       | Full, Spot, None | Eff. |
| (a) | END                          | 5/16"     | 1/8"  |        |         | 2:1              |                    |                      |               |                  | X       | S          | NONE             | 0.85 |
| (b) |                              |           |       |        |         |                  |                    |                      |               |                  |         |            |                  |      |

If removable, bolts used (describe other fastening) NA  
(Mat'l Spec. No., Grade, size, No.)

8. Type of jacket NA Jacket closure NA  
(Describe as ogee & weld, bar, etc.)

If bar, give dimensions NA If bolted, describe or sketch.

9. MAWP 242 --- psi at max. temp. 145 --- °F Min. design metal temp. 10 °F at 242 psi.  
(internal) (external) (internal) (external)

10. Impact test NO, EXEMPT PER UG-20(f) at test temperature of NA °F.  
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. Test press. 315 P.S.I.G. Proof test NA

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-516-70N 26 1/4" 3 1/4" 1/4' Welded  
(Stationary (Mat'l Spec. No.)) (Dia., in. (subject to press.)) (Nom. thk., in.) (Corr. Allow., in.) (Attachment (welded or bolted))

NA NA NA NA NA  
(Floating (Mat'l Spec. No.)) (Dia., in.) (Nom. thk., in.) (Corr. Allow., in.) (Attachment)

13. Tubes: SA-179 3/4" 0.083" THK (MIN) 267 "U"  
(Mat'l Spec. No., Grade or Type) (O.D., in.) (Nom. thk., in. or gauge) (Number) (Type (Straight or U))

Items 14-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): 1 (b) Overall length (ft & in.): 2'-1 7/16"

| Course(s) |               |                   | Material            |  | Thickness |       | Long. Joint (Cat. A) |                  |      | Circum. Joint (Cat. A, B, & C) |                  |      | Heat Treatment |      |
|-----------|---------------|-------------------|---------------------|--|-----------|-------|----------------------|------------------|------|--------------------------------|------------------|------|----------------|------|
| No.       | Diameter, in. | Length (ft & in.) | Spec./Grade or Type |  | Nom.      | Corr. | Type                 | Full, Spot, None | Eff. | Type                           | Full, Spot, None | Eff. | Temp.          | Time |
| 1         | 26" I.D.      | 2'-1 7/16"        | SA-516-70           |  | 5/8"      | 1/8"  | 1                    | SPOT             | 0.85 | 1 (1)                          | SPOT             | 0.85 | ---            | ---  |
|           |               |                   |                     |  |           |       |                      |                  |      |                                |                  |      |                |      |

15. Heads: (a) SA-516-70N (b) NA  
(Mat'l Spec. No., Grade or Type) (H.T. - Time & Temp.) (Mat'l Spec. No., Grade or Type) (H.T. - Time & Temp.)

|     | Location (Top, Bottom, Ends) | Thickness |       | Radius |         | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure |         | Category A |                  |      |
|-----|------------------------------|-----------|-------|--------|---------|------------------|--------------------|----------------------|---------------|------------------|---------|------------|------------------|------|
|     |                              | Min.      | Corr. | Crown  | Knuckle |                  |                    |                      |               | Convex           | Concave | Type       | Full, Spot, None | Eff. |
| (a) | END                          | 3 3/8"    | 3/16" |        |         |                  |                    |                      | 27 1/8"       |                  |         |            |                  |      |
| (b) |                              |           |       |        |         |                  |                    |                      |               |                  |         |            |                  |      |

If removable, bolts used (describe other fastening) (a) SA-193B7, 1 1/8" DIA, 28  
(Mat'l Spec. No., Grade, size, No.)

# FORM U-1 (Back)

16. MAWP 610 (internal) --- (external) psi at max. temp. 265 (internal) --- (external) °F Min. design metal temp. 10 °F at 610 psi.
17. Impact test NO, EXEMPT PER UG-20(f). at test temperature of NA °F.  
(Indicate yes or no and the component(s) impact tested)
18. Hydro., pneu., or comb. Test press. 795 P.S.I.G. Proof test NA
19. Nozzles, inspection, and safety valve openings:

| Purpose<br>(Inlet, Outlet, Drain, etc.) | No. | Diameter<br>or Size | Flange<br>Type | Material |        | Nozzle Thickness |       | Reinforcement<br>Material | How Attached |        | Location<br>(Insp. Open.) |
|---|-----|---------------------|----------------|----------|--------|------------------|-------|---------------------------|--------------|--------|---------------------------|
|   |     |                     |                | Nozzle   | Flange | Nom.             | Corr. |                           | Nozzle       | Flange |                           |
| INLET/OUTLET                            | 1/1 | 6"-150#             | FF-WN          | SA-106B  | SA-105 | 0.4320"          | 1/8"  | WELD                      | WELDED       | WELDED | SHELL                     |
| INLET                                   | 1   | 10"-300#            | RF-WN          | SA-106B  | SA-105 | 0.5940"          | 1/8"  | SA-516-70                 | WELDED       | WELDED | CHANNEL                   |
| OUTLET                                  | 1   | 10"-300#            | RF-WN          | SA-106B  | SA-105 | 0.5940"          | 1/8"  | SA-516-70                 | WELDED       | WELDED | CHANNEL                   |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |
|   |     |                     |                |          |        |                  |       |                           |              |        |                           |

20. Supports: Skirt NO Lugs --- (No.) Legs --- (No.) Others --- (Describe) (2) Saddles Attached WELDED TO SHELL (Where and how)
21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:  
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: SERVICE: RECYCLE GAS COMPRESSOR KICKBACK COOLER ITEM NO.: HX1032  
P.O. NO.:17497-0001, SIZE:26-120, TYPE:NFU, TUBES DESIGNED W/ 0" C.A., SAFETY RELIEF DEVICES BY OTHERS  
LINES 14-18 INCLUDES (1) 33" O.D. X 26" I.D. X 4 3/4" THK., SA-266-4N RING  
(1) Tubesheet to cylinder circumferential seams are type 7 joints with efficiency of .85.

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate Authorization No. 12370 Expires SEPTEMBER 27, 20 13

Date 7-30-12 Name ENERGY EXCHANGER COMPANY Signed [Signature]  
(Manufacturer) (Representative)

## 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 OKLAHOMA and employed by ONEBEACON AMERICA INSURANCE COMPANY of LYNN, MA have inspected the pressure vessel described in this Manufacturer's Data Report on 7-30-2012, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. 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 7-30-12 Signed [Signature] Commissions N.B.#12064 A OKLA.# 7  
(Authorized Inspector) (Nat'l Board incl. endorsements, State, Province, and No.)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that field assembly construction of all parts of this vessel conforms with the requirements of ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. U Certificate of Authorization No. --- Expires ---, 20 ---

Date --- Name --- Signed ---  
(Assembler) (Representative)

## 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 compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items ---, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. The described vessel was inspected and: --- 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 --- Signed --- Commissions ---  
(Authorized Inspector) (Nat'l Board incl. endorsements, State, Province, and No.)