

**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 FABSCO SHELL & TUBE, LLC., 2410 INDUSTRIAL ROAD, SAPULPA, OK 74066  
(Name and address of Manufacturer)

2. Manufactured for SOUTHERN COMPANY GENERATION  
(Name and address of Purchaser)

3. Location of installation KEMPER COUNTY, MS  
(Name and address)

4. Type: HORIZ. HEAT EXCHANGER S11-10279-7  
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exh., etc.) (Mfg's serial No.)

N/A S11-10279-7-1 7538 2012  
(CRN) (Drawing No.) (Nat'l Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 2010 ED. N/A N/A  
(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): 1/1 (b) Overall length (ft & in.): 16'-5 3/8" / 1'-4 1/4"

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	18" O.D.	16'-5 3/8"	SA-312TP304L	1/4"	0"	S	NONE	0.85	1	FULL(RT-4)	1.0	N/A	N/A
1*	24" O.D.	1'-4 1/4"	SA-312TP304L	1/4"	0"	S	NONE	0.85	1	FULL(RT-4)	1.0	N/A	N/A
* ANNULAR DISTRIBUTOR													

7. Heads: (a) SA-240-304L (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	3/16	0"	NA	NA	2:1	NA	NA	NA	NA	X	S	NONE	1.00
(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 180 NA psi at max. temp. 290 NA °F Min. design metal temp. 10 °F at 180 psi.  
(internal) (external) (internal) (external)

10. Impact test NO, Exempt Per ug-20(f), ucs-66(a)(c), Fig ucs-66 Note(c) & ucs-67 at test temperature of NA °F.  
(Indicate yes or no and the component(s) impact tested)

11. Hydro. Test press. 234 Proof test NA

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-240-304L 19 1/8" 1 3/8" 0.1875" Bolted  
(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-213TP304L 1" 0.0910 THK avg 51 "U"  
(Mat'l Spec. No., Grade or Type) (O.D., in.) (Nom. thk., in. or gauge) (Number) (Type (Strait 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.): 1'-10"

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	18" O.D.	1'-10"	SA-312TP304L	1/4"	0"	S	NONE	0.85	1	FULL	1.00	N/A	N/A

15. Heads: (a) SA-240-304L (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	1 3/4"	0"	NA	NA	NA	NA	NA	22 5/8"	NA	NA	S	NONE	1.00
(b)														

If removable, bolts used (describe other fastening) (20)/7/8"Dia.&(20)/7/8"Dia.SA-193B7 Studs W/SA-194-2H Heavy Hex Nuts  
(Mat'l Spec. No., Grade, size, No.)

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16. MAWP 150 NA psi at max. temp. 200 NA °F Min. design metal temp. 10 °F at 150 psi.  
(internal) (external) (internal) (external)

17. Impact test NO, Exempt Per ucs-66, ucs-67 & ucs-68 NA °F.  
(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. Test pres: 195 Proof te: NA

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
INLET	1	6"-300#	RF-WN	SA-312TP304L	SA-182F304L	0.4320"	0"	NA	UW16.1	NONE, 0.7	NA
OUTLET	1	8"-300#	RF-WN	SA-312TP304L	SA-182F304L	0.5000"	0"	NA	UW16.1	NONE, 0.7	NA
INLET/OU	1	4"-150#	RF-WN	SA-312TP304L	SA-182F304L	0.2370"	0"	NA	UW16.1	NONE, 0.7	NA
INLET	1	4"-150#	RF-WN	SA-312TP304L	SA-182F304L	0.2370"	0"	NA	UW16.1	NONE, 0.7	NA
VENT	1	2"-150#	RF-WN	SA-312TP304L	SA-182F304L	0.2180"	0"	NA	UW16.1	NONE, 0.7	NA
DRAIN	1	2"-150#	RF-WN	SA-312TP304L	SA-182F304L	0.2180"	0"	NA	UW16.1	NONE, 0.7	NA
VENT	1	3/4"-6000#	CPLG	SA-182F304L	NA	6000#	0"	NA	UW16.1	NA	NA
DRAIN	1	3/4"-6000#	CPLG	SA-182F304L	NA	6000#	0"	NA	UW16.1	NA	NA

20. Supports: Skirt NO Lugs NONE Legs NONE Others (2) Saddles Attached Welded to Shell  
(Yes or no) (No.) (No.) (Describe) (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)

**SHELL, CHANNEL & NOZZLES, ITEM #6, #7, #14, #15, #19, J & M WELDING, LLC., SN: 93057.1, 93057.2**

22. Remarks: **SERVICE: AGR FLASH GAS COOLER** **ITEM NO.: HX1065**

**STRAIGHT TUBE LENGTH = 16'-0"**

## 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 Code for Pressure Vessels, Section VIII, Division 1.

U Certificate of Authorization No. 30112 Expires December 30, 2012

Date 9/27/12 Name FABSCO SHELL & TUBE, LLC. Signed Anthony Carls  
(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 LYNN, MA

have inspected the pressure vessel described in this Manufacturer's Data Report on 9/19/12, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME 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 9/27/12 Signed Mark Taught Commission NB 7935A OK657  
(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 Code, Section VIII, Division 1. U Certificate of Authorization No.

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 \_\_\_\_\_

of \_\_\_\_\_, have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data item \_\_\_\_\_ 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 Code, Section VIII, Division 1. The described vessel was inspected and subjected to hydrostatic 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 \_\_\_\_\_ Signed \_\_\_\_\_ Commission \_\_\_\_\_  
(Authorized Inspector) (Nat'l Board incl. endorsements, State, Province, and No.)

# FORM U-2 MANUFACTURER'S PARTIAL DATA REPORT

A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer  
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

- Manufactured and certified by J&M Welding, LLC 7862 South Regency Drive, Tulsa, OK 74131  
(Name and address of Manufacturer)
- Manufactured for Fabscos, LLC P.O. Box 988, Sapulpa, OK 74067  
(Name and address of Purchaser)
- Location of installation "unknown"  
(Name and address)
- Type: HORIZONTAL SHELL, CHANNEL & NOZZLES 93057.1,2 (CRN)  
[Description of vessel part (shell, two piece head, tube bundle)] (Mfg's serial No.)  
S11-10279-7/8-1 REV.4 FABSCO, LLC 2012  
(National Board number) (Drawing number) (Drawing prepared by) (Year built)
- ASME Code Section VIII Div 1 2010 [Edition and Addenda (date)] (Code Case number) [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 multi-chamber vessels.

- Shell (a) Number of course (s): 1 (b) Overall Length : 16' 5-3/8"

Course(s)			Material	Thickness		Long. Joint (Cat A)			Circum. Joint (Cat. A, B, & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	1' 6" Od	16' 5-3/8"	SA312TP304L	.25"	0"	S	NONE	0	1	FULL	100		

7. Heads: (a) <u>SA-965-F304L</u> (b) <u>SA-240-304L</u>										(Material spec. number, 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)	L.END	3.9375"	0			2:1			22.625"			S	NONE	100
(b)	R.END	.1875"	0								X	S	NONE	100

If removable, bolts used (describe other fastenings) N/A  
(Material spec. number, grade, size, number)

- Type of jacket Jacket closure (Describe as ogee & weld bar, etc.)  
If bar, give dimensions If bolted, describe or sketch

- MAWP 180PSI at max temp. 290°F Min. design metal temp. 10°F at 180 psi  
(Internal) (External) (Internal) (External)

- Impact Test NONE : test temperature of   
[Indicate yes or no and the component(s) impact tested]

- Hydro., pneu., or comb. test press. NONE Proof Test

Items 12 and 13 to be completed for tube sections.

- Tubesheet  
[Stationary (material spec. no.)] N/A [Diameter, (subject to pressure)]  [Nominal thickness]  [Corr. Allow.]  [Attachment (welded or bolted)]   
[Floating (material spec. no.)]  [Diameter]  [Nominal thickness]  [Corr. Allow.]  [Attachment]
- Tubes  
(Material spec. no., grade or type)  (O.D.)  (Nominal thickness)  (Number)  [Type (straight or U)]

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

- Shell (a) No. of course(s): 1 (b) Overall length: 1' 10"

Courses			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B, & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	1' 6" Od	1' 10"	SA312TP304L	.25"	0"	S	NONE	100	1	FULL	100	-	-

# Form U-2 (Back)

15. Heads: (a) SA965-F304L (b) \_\_\_\_\_  
 (Material spec. number, grade or type) (H.T. - time & temp) (Material spec. number, 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)	(2) ENDS	3.9375"	0"						22.625"			S	NONE	100

If removable, bolts used (describe other fastenings) N/A  
 (Material spec. number, grade, size, number)

16. MAWP 150 psi at max temp. 200°F Min. design metal temp. 10°F at 150 psi  
 (Internal) (External) (Internal) (External)

17. Impact test NONE at test temperature of \_\_\_\_\_  
 [Indicate yes or no and the component(s) impact tested]

18. Hydro., pneu., or comb. test press. \_\_\_\_\_ Proof Test \_\_\_\_\_

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
INLET	1	6"-300#	RFWN	SA-312TP304L	SA182F304L	.4320"	0"		UW16.1(c)	TYPE 1	SHELL
OUTLET	1	8"-300#	RFWN	SA-312TP304L	SA182F304L	.5"	0"		UW16.1(c)	TYPE 1	SHELL
INLET	1	4"-150#	RFWN	SA-312TP304L	SA182F304L	.237"	0"		UW16.1(c)	TYPE 1	CHNL
OUTLET	1	4"-150#	RFWN	SA-312TP304L	SA182F304L	.237"	0"		UW16.1(c)	TYPE 1	CHNL
Vent/drain	2	2"-300#	RFLWN		SA182F304L		0"		UW16.1(c)	FLT	CHNL

20. Identification of Parts:

Name of Part	Quantity	Line No.	Mfr's Identification No.	Mfr's Drawing No.	CRN	National Board No.	Year Built
N/A							

21. Supports: Skirt NO Lugs - Legs - Others - Attached -  
 (Yes or No) (No.) (No.) (Describe) (Where and how)

22. Remarks AGR FLASH COOLER. PO# MPC17901. ITEM # HX1065/2065.  
SAFETY VALVE(S) SUPPLIED BY OTHERS PER UG-125(a).  
NO DESIGN BY J&M WELDING, LLC  
WPS QUALIFIED WITH AND WITHOUT PWHT.

**CERTIFICATE OF SHOP/FIELD COMPLIANCE**

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

U Certificate of Authorization Number 41,929 Expires 07/18/2014

Date 8/30/12 Name J&M Welding, LLC Signed [Signature]  
 (Manufacturer) (Representative)

**CERTIFICATE OF SHOP/FIELD 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 part described in this Manufacturer's Data Report on 8/30/12 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel part described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her 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 8/30/12 Signed Michael R. Pope Commissions NB9265-A  
 (Authorized Inspector) [National Board (incl endorsements) State, Province and number]