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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 DAEKYUNG MACHINERY & ENGINEERING CO., LTD / 125-2, BUGOK-DONG, NAM-KU, ULSAN, 680-110, SOUTH KOREA.
2. Manufactured for C/O BANTREL TOWER 4TH FLOOR, 700-66TH AVENUE S.W CALGARY, ALBERTA CANADA
3. Location of installation VOYAGEYR / SUNCOR ENERGY INC. ALBERTA CANADA
4. Type: HORIZ. HEAT EXH. DK2007-231
5. ASME Code, Section VIII, Div. 1 2004 ED. & 2006 ADD. N/A N/A

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.

6. Shell (a) No. of course(s): 4 (b) Overall length (ft & in.): 22' & 1.08'

Table with columns: Course(s), Material, Thickness, Long. Joint (Cat. A), Circum. Joint (Cat. A, B, & C), Heat Treatment. Rows 1-4 showing vessel specifications.

7. Heads: (a) SA516-70 / 1Hr. 10Min. & 1150°F (b) N/A

Table with columns: Location (Top, Bottom, Ends), Thickness, Radius, Elliptical Ratio, Conical Apex Angle, Hemispherical Radius, Flat Diameter, Side to Pressure, Category A.

If removable, bolts used (describe other fastening) N/A

8. Type of jacket N/A Jacket closure N/A

9. MAWP 382 F.V psi at max. temp. 650 400 °F Min. design metal temp. -20 °F at 382(INT.)/F.V (EXT.) psi.

10. Impact test YES (TUBESHEET, FLOATING HEAD (COVER, FLANGE), BACKING DEVICE) at test temperature of -20 °F.

11. Hydro., pneum., or comb. test press. 506 PSI Proof test -

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA266-2 61.19' 8.5' 0.375' BOLTED
SA266-2 56.5' 8.5' 0.375' BOLTED

13. Tubes: SA179 1' 0.134' 1122 STRAIGHT

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.): 4' & 3.5'

Table with columns: Course(s), Material, Thickness, Long. Joint (Cat. A), Circum. Joint (Cat. A, B, & C), Heat Treatment. Rows 1-4 showing inner chamber specifications.

15. Heads: (a) SA266-2 (b) FLOATING HEAD; SA516-70 / 1Hr. 40Min. & 1150°F

Table with columns: Location (Top, Bottom, Ends), Thickness, Radius, Elliptical Ratio, Conical Apex Angle, Hemispherical Radius, Flat Diameter, Side to Pressure, Category A.

If removable, bolts used (describe other fastening) (a) SA193-B7M; 1 1/4-8UN x 1'8.92'L; 68sets (b) SA193-B7M; 1 1/8-8UN x 1'8.06'L; 64sets

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FORM U-1 (Back)

6. MAWP 297 (internal) F.V. (external) psi at max. temp. 650 (internal) 400 (external) °F. Min. design metal temp. -20 °F at 297(INT.)/F.V (EXT.)

7. Impact test YES(CHANNEL COVER FLANGE) at test temperature of -20 °F.  
(Indicate yes or no and the component(s) impact tested)

8. Hydro., pneu., or comb. test press. 396 psi Proof test N/A

9. Nozzles, inspection, and safety valve openings:

| Purpose<br>(Inlet, Outlet, Drain) | No. | Diameter<br>or Size | Flange<br>Type | Material |        | Nozzle Thickness |        | Reinforcement<br>Material | How Attached |        | Location<br>(Insp. Open.) |
|-----------------------------------|-----|---------------------|----------------|----------|--------|------------------|--------|---------------------------|--------------|--------|---------------------------|
|                                   |     |                     |                | Nozzle   | Flange | Norm.            | Corr.  |                           | Nozzle       | Flange |                           |
| SHELL SIDE INLET                  | 1   | 20"                 | C.L 300 WN     | SA516-70 | SA105  | 0.75"            | 0.25"  | SA516-70                  | *2           | *3     | -                         |
| SHELL SIDE INLET                  | 1   | 20"                 | C.L 300 WN     | SA516-70 | SA105  | 0.75"            | 0.25"  | SA516-70                  | *2           | *3     | -                         |
| SHELL SIDE OUTLET                 | 1   | 24"                 | C.L 300 WN     | SA516-70 | SA105  | 0.75"            | 0.25"  | SA516-70                  | *2           | *3     | -                         |
| TUBE SIDE INLET                   | 1   | 14"                 | C.L 300 WN     | SA106-B  | SA105  | 0.75"            | 0.125" | SA516-70                  | *2           | *3     | -                         |
| TUBE SIDE OUTLET                  | 1   | 14"                 | C.L 300 WN     | SA106-B  | SA105  | 0.42"            | 0.125" | SA516-70                  | *2           | *3     | -                         |
| SERVICE CONNECTION                | 3   | 2"                  | C.L 300 LWN    | -        | SA105  | 0.66"            | 0.25"  | -                         | -            | *1     | -                         |
| SERVICE CONNECTION                | 2   | 2"                  | C.L 300 LWN    | -        | SA105  | 0.66"            | 0.125" | -                         | -            | *1     | -                         |
| -                                 | -   | -                   | -              | -        | -      | -                | -      | -                         | -            | -      | -                         |
| -                                 | -   | -                   | -              | -        | -      | -                | -      | -                         | -            | -      | -                         |

10. Supports: Skirt NO (Yes or no) Lugs N/A (No.) Legs N/A (No.) Other SADDLE (Describe) Attached SHELL & WELDED (Where and how)

11. 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)

N/A

12. Remarks:

- 1) OVER PRESSURE PROTECTION DEVICE WILL BE INSTALLED IN THE SYSTEM.
- 2) THE MARK(\*) OF ABOVE ITEM 19 IS AS FOLLOWS : \*1 : FIG. UW-16.1 (c) \*2 : FIG. UW-16.1 (d)  
 \*3: SNGL., BUTT, RT - FULL

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made 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. 22,056 Expires JUNE. 24, 2009

Date 08 Dec. 2008 Name DAEKYUNG MACHINERY & ENGINEERING CO., LTD. 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 OHIO and employed by HSBCT OF HARTFORD CT have inspected the component described in this Manufacturer's Data Report on DEC. 8th, 2008 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 DEC. 8th, 2008 [Signature] Commissions 12295(A)  
(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 the 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. \_\_\_\_\_ Expires \_\_\_\_\_

Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(Manufacturer) (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 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 Code, Section VIII, Division 1. The described vessel was inspected and subjected to a 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 \_\_\_\_\_ Commissions \_\_\_\_\_  
(Authorized Inspector) (Nat'l Board Incl. endorsements, State, Province and No.)

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**FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET**  
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified DAEKYUNG MACHINERY & ENGINEERING CO., LTD / 125-2, BUGOK-DONG, NAM-KU, ULSAN, 680-110. SOUTH KOREA.  
(Name and address of Manufacturer)

2. Manufactured for C/O BANTREL TOWER 4<sup>TH</sup> FLOOR, 700-6<sup>TH</sup> AVENUE S.W CALGARY, ALBERTA CANADA  
(Name and address of Purchaser)

3. Location of installation VOYAGEUR / SUNOCR ENERGY INC. ALBERTA CANADA  
(Name and address)

4. Type: HORIZ HEAT EXH. DK2007-231  
(Horiz., vert., or sphere) (Tank, separator, heat exch., etc) (Wjgs, serial No)

U5052.2 DK2007-231-001 REV.5 2480 2008  
(CRN) (Drawing No) (Mat. Bd. No) (Year built)

| Data Report Item Number | Remarks |
|-------------------------|---------|
|-------------------------|---------|

22. Remarks: 3) DEVIATIONS BETWEEN ABSA REGISTERED DRAWINGS AND FINAL 'AS BUILT' DRAWINGS.

| DWG. NO. & PART NO. | REV. NO. | DESCRIPTION   |   | REASON OF CHANGE  |
|---------------------|----------|---|---|-------------------|
|                     |          | FROM (ABSA REGISTERED DRAWING)  | TO (FINAL 'AS BUILT' DRAWING)   |                   |
| DK2007-231-001      | 5        | Location of name plate : NOT Specified on the drawing Rev.3   | Location of name plate : Specified as 8'-11 5/32"[2721.8]   | DKME MODIFICATION |
| DK2007-231-003      | 4        | 1) Material of item #1,3,22 : SA516-70+N+S3(HIC)<br>2) Jack bolt size (item #17,20) : 1-6UNC                              | 1) Material of item #1,3,22 : SA516-70+N+S3(SOUR)<br>2) Jack bolt size (item #17,20) : 3/4-10UNC                            | DKME MODIFICATION |
| DK2007-231-005      | 4        | Thk of seal strip (item#9-13) : 11/4"[6.4]  | Thk of seal strip (item#9-13) : 15/16"[8]   | DKME MODIFICATION |
| DK2007-231-006      | 5        | 1) Material of item #2,3,8,9: SA516-70+N+S3(HIC)<br>2) Stud bolt length of nozzle flange (item #17,21,25) : 3 47/64"[95]L | 1) Material of item #2,3,8,9: SA516-70+N+S3(SOUR)<br>2) Stud bolt length of nozzle flange (item #17,21,25) : 3 15/16"[100]L | DKME MODIFICATION |
| DK2007-231-007      | 4        | Material of item #4: SA516-70+N+S3(HIC)   | Material of item #4: SA516-70+N+S3(SOUR)  | DKME MODIFICATION |
| DK2007-231-009      | 4        | 1) CRN NO. on manufacturer name plate : blank<br>2) THK of name plate bracket (item #3) : 11/4"[6.4]                      | 1) CRN NO. on manufacturer name plate : U5052.2<br>2) THK of name plate bracket (item #3) : 123/64"[9]                      | DKME MODIFICATION |

Certificate of Authorization: Type U No. 22,056 Expires JUNE, 24, 2009

Date 08 Dec 2008 DAEKYUNG MACHINERY & ENGINEERING CO., LTD. Signed [Signature]  
(Manufacturer) (Representative)

Date DEC, 24, 2008 Name [Signature] Commission 12295(A)  
(Authorized Inspector) (Mat Board Incl. Endorsement, State, Province and No.)