

FORM N-1 CERTIFICATE HOLDER'S DATA REPORT FOR NUCLEAR VESSELS*
As Required by the Provisions of the ASME Code, Section III, Division 1

1. Manufactured and certified by Joseph Oat Corporation / 2500 Broadway, Camden, New Jersey 08104
(name and address of N Certificate Holder)
2. Manufactured for TVA / 1270 Nuclear Plant Road, HWY 68, Spring City, TN 37381
(name and address of Purchaser)
3. Location of installation Watts Bar Unit 1 / 1270 Nuclear Plant Road, HWY 68, Spring City, TN 37381
(name and address)
4. Type Horizontal Heat Exchanger 2692-A --- D-12609.01/4 3606 2012
(horizontal or vertical) (tank, jacketed, heat ex.) (Certificate Holder's serial no.) (CRN) (drawing no.) (National Bd. no.) (year built)
5. ASME Code, Section III, Division 1 1974 None 3 ----
(edition) (Addenda (if applicable) (date)) (class) (Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell SA516-70 70 ksi .625" .402" 54.312" 13'-7.250"
(material spec. no.) (tensile strength) (nominal thickness) (minimum design thickness) (diameter ID) (length (overall))
7. Seams Double V No Spot 85 Double V No Spot 2
(long.) (HT¹) (RT) (eff. %) (girth) (HT¹) (RT) (no. of courses)
8. Heads SA516-70 70 ksi ---- ----
((a) material spec. no.) (tensile strength) ((b) material spec. no.) (tensile strength)

| | Location (top, bottom, ends) | Thickness | Corrosion Allowance | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure (convex or concave) |
|-----|------------------------------|-----------|---------------------|--------------|----------------|------------------|--------------------|----------------------|---------------|--------------------------------------|
| (a) | End | .547" | .125' | --- | --- | --- | --- | --- | --- | Concave |
| (b) | ---- | --- | --- | --- | --- | --- | --- | --- | --- | ---- |

If removable, bolts used ----- (material spec. no., size, quantity) Other fastening ----- (describe or attach sketch)

9. Jacket closure -----
(Describe as ogee & weld, bar, etc. If bar, give dimensions, describe, or sketch)
10. Design pressure² 150 psi at max. temp. 200 F. Min. pressure-test temp. 40 F. Pneu., hydro., or comb. test pressure 225 psi

Items 11 and 12 to be completed for tube sections.

11. Tubesheets SA240-304/304L 54.312" 3.812" Welded
(stationary, material spec. no.) (diameter (subject to press.)) (thickness) (attachment (welded, bolted))
- ---- ---- ----
(floating, material spec. no.) (diameter) (thickness) (attachment)
12. Tubes SA249-304/304L .750" .049" 1194 U
(material spec. no.) (OD) (thickness (inches or gage)) (no.) (type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell SA240-304/304L 75 ksi .500" .271" 55.312 1'-8"
(material spec. no.) (tensile strength) (nominal thickness) (minimum design thickness) (diameter ID) (length (overall))
14. Seams Double V No Spot 85 Double V No Spot 1
(long. (welded, dbl., single)) (HT¹ (yes or no)) (RT) (eff. %) (girth) (HT¹) (RT) (no. of courses)
15. Heads ---- ---- SA240-304/304L 75 ksi ---- ----
((a) material spec. no.) (tensile strength) ((b) material spec. no.) (tensile strength) ((c) material spec. no.) (tensile strength)

| | Location | Thickness | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure (convex or concave) |
|-----|-------------------|-----------|--------------|----------------|------------------|--------------------|----------------------|---------------|--------------------------------------|
| (a) | Top, bottom, ends | ---- | --- | --- | --- | ---- | ---- | --- | ---- |
| (b) | Channel | .430" | --- | --- | --- | ---- | ---- | --- | Concave |
| (c) | Floating | ---- | --- | --- | --- | ---- | ---- | --- | ---- |

If removable, bolts used ----- (material spec. no., size, quantity) Other fastening ----- (describe or attach sketch)

16. Design pressure² 150 psi at 200 F. Min. pressure-test temp. 40 F. Pneu., hydro., or comb. test pressure 225 psi

¹If postweld heat treated. ²List other internal or external pressure with coincident temperature when applicable.
* Supplemental information in the form of lists, sketches, or drawings may be used provided: (1) size is 8 1/2 x 11; (2) information in items 1 through 4 on this Data Report is included on each sheet; and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



17. Nozzles, inspection and safety valve openings

| Purpose (inlet, outlet, drain, etc.) | Quantity | Diameter or Size | Type | How Attached | Material | Thickness | Reinforcement Material | Location |
|--------------------------------------|----------|------------------|----------|--------------|----------|-----------|------------------------|-------------|
| Inlet/Outlet | 2 | 10" | WNRF | Welded | 304/304L | 150# | SA240-304/304L | ----- |
| Inlet/Outlet | 2 | 14" | Pipe | Welded | 106-B | .500" | SA516-70 | ----- |
| Vent/Drain | 4 | 3/4" | H Cplg. | Welded | 304/304L | 6000# | None | ----- |
| Vent/Drain | 2 | 3/4" | H. Cplg. | Welded | 234/105 | 6000# | None | ----- |
| Flush/Inspection | 5 | 4" | Stud Pad | Welded | 304/304L | 150# | None | Chan. Cover |
| Flush/Inspection | 4 | 4" | Stud Pad | Welded | 105 | 150# | None | Shell |

18. Supports: Skirt No (yes or no) Lugs 0 (quantity) Legs 0 (quantity) Other Saddles (2) (describe) Attached Shell, Welded (where and how)

19. Remarks:

| | | | |
|---|-------------------------|---|---|
| CERTIFICATION OF DESIGN | | | |
| Design specification certified by | <u>James C. Nygaard</u> | P.E. State | <u>KS</u> Reg. no. <u>11287</u> |
| Design report certified by | <u>Yingzong Bu</u> | P.E. State | <u>MD</u> Reg. no. <u>36775</u> |
| CERTIFICATE OF SHOP COMPLIANCE | | | |
| We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1. | | | |
| N Certificate of Authorization No. | <u>N-1488</u> | Expires | <u>08/04/2012</u> |
| Date | <u>7/20/12</u> | Name | <u>Joseph Oat Corporation</u> <small>(N Certificate Holder)</small> |
| | | Signed | <u>[Signature]</u> <small>(authorized representative)</small> |
| CERTIFICATE OF SHOP INSPECTION | | | |
| I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by <u>OneBeacon America Insurance Company</u> | | | |
| of <u>Lynn, MA</u> have inspected the component described in this Data Report on <u>07/20/2012</u> , and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1. | | | |
| By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component 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 | <u>07/20/2012</u> | Signed | <u>[Signature]</u> <small>(Authorized Nuclear Inspector)</small> |
| | | Commission | <u>NR9541N, NT786</u> <small>(National Board Number and Endorsement)</small> |
| 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 nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1. | | | |
| N Certificate of Authorization No. | | | Expires |
| Date | | | Signed |
| | | <small>(N Certificate Holder) (authorized representative)</small> | |
| CERTIFICATE OF FIELD ASSEMBLY INSPECTION | | | |
| I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by _____ | | | |
| of _____ have compared the statements in this Data Report with the described component and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me on _____ and that to the best of my knowledge and belief, the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1. | | | |
| By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component 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 | | | Signed |
| | | <small>(Authorized Nuclear Inspector) Commission</small> | |
| | | <small>(National Board Number and Endorsement)</small> | |

(07/11)

