



Supplier Deviation Disposition Request



PROJECT: River Protection Project Waste Treatment Plant

ISSUED BY
RPP-WTP-PDC

JOB No.: 24590

FOR RPP-WTP USE			
RPP-WTP SDDR No. 24590-WTP-SDDR-MS-ID-00144	Rev. N/A	DATE RECEIVED 12/20/2010	
FOR SUPPLIER USE			
SUPPLIER SDDR No. 593-SDDR-004 Rev 0		DATE SUBMITTED 12-22-10	
1. Supplier Name S.A. Technology	Address 3985 S. Lincoln Ave. Suite 100	City & State Loveland, Colorado	Zip 80537
2. Supplier's Order No. 593	3. RPP-WTP P.O. or SC 24590-QL-POA-MEP0-00006		Rev 1
4. Deviation Description (Attach extra sheets, photographs, sketches, etc. as necessary and identify quantity and serial numbers as applicable) S.A. Technology is proposing to deviate from BNI Specification 24590-WTP-3PS-MEP0-T0001 "Plate and Frame Heat Exchangers" Section 3.2.3 "After pressing the minimum thickness of plates shall be 0.024 inch."			
4a. Was an NCR issued? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Number:			
5. Supplier's Proposed Disposition: <input type="checkbox"/> Use As-Is <input type="checkbox"/> Repair <input checked="" type="checkbox"/> Modify RPP-WTP Requirement			
6. Supplier's Estimated Cost Impact: \$0.00		7. Supplier's Estimated Schedule Impact: None	
8. Proposed Disposition and Technical Justification (plus Cost/Schedule if applicable): (Attach extra sheets, sketches, etc., as necessary.) S.A. Technology is proposing the following change: Section 3.2.3 "Before pressing the minimum plate thickness shall be 0.6mm / 0.0236 inch." Technical Justification There is no corrosion allowance for the plate side, per MDS 24590-HLW-MED-HOP-00031 Rev 0. For Plate Heat Exchangers (PHE) the MAWP is established through burst tests and not calculations. MAWP for welded PHE is based on a safety factor exceeding 5:1 against burst pressure. Attachment 1 is a copy of the burst test for the plates being used for these particular Heat Exchangers. Based on the max operating pressure in the MDS, 5psig and the MAWP results from Attachment 1, 65.26 bar g / 946 psig, the plate cassettes will have a safety factor of 189:1. There for using plates with a before pressing minimum plate thickness of 0.6mm should be acceptable for this application.			
9. Supplier's Authorized Representative Jennifer Sargent		Signature 	
Title Project Manager		Date 12/22/10	
10. RPP-WTP Engineering Action <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> See Below			

NOTES:

- 1. Complete instructions provided at end of form.
- 2. Items 1 through 9 and 17 to be completed by Supplier
- 3. Items 10 through 16 to be completed by RPP-WTP.

- 4. Non applicable items to be marked "N/A"
- 5. Attach additional information whenever necessary
- 6. RPP-WTP must be notified within 5 days after detection of deviation



Supplier Deviation Disposition Request Engineering Disposition

Page 2 of 11

PROJECT: River Protection Project Waste Treatment Plant JOB NO.: 24590 SDDR: 24590-WTP-SDDR-MS-10-00144 Rev. N/A

Distribution: Procurement & Subcontracts Construction _____

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

NOTES:

- 1. Complete instructions provided at end of form.
- 2. Items 1 through 9 and 17 to be completed by Supplier
- 3. Items 10 through 16 to be completed by RPP-WTP.

- 4. Non applicable items to be marked "N/A"
- 5. Attach additional information whenever necessary
- 6. RPP-WTP must be notified within 5 days after detection of deviation



Supplier Deviation Disposition Request Engineering Disposition

PROJECT: River Protection Project Waste Treatment Plant JOB NO.: 24590 SDDR: 24590-WTP-SDDR-MS-10-00144 Rev. N/A

Title of SDDR: Plate Thickness for HOP-HX-00002/4

11. (OPTIONAL) RPP-WTP Provisional Disposition Statement (Attach extra sheets, sketches, etc., as necessary).

N/A

RPP-WTP Provisional Disposition Justification (Attach extra sheets, sketches, etc., as necessary).

N/A

ATS Number: 24590-WTP-ATS-QAIS- -

RPP-WTP Provisional Disposition Approval:

RE/Originator:	<u>N/A</u>	_____	_____	_____
		<i>Print/Type Name</i>	<i>Signature</i>	<i>Date</i>
E&NS Review (when required):	<u>N/A</u>	_____	_____	_____
		<i>Print/Type Name</i>	<i>Signature</i>	<i>Date</i>
Approver:	<u>N/A</u>	_____	_____	_____
		<i>Print/Type Name</i>	<i>Signature</i>	<i>Date</i>

12. RPP-WTP Procurement & Subcontracts Action: Commercial Terms Impact:

- Yes *This SDDR grants relief from requirements or changes the requirements and; check each (consideration) item that applies:*
- Modifications to governing terms are required and/or;
 - An increase in price is requested by Seller and/or;
 - A price credit from the Supplier is due and/or;
 - An increase/decrease in the Seller promise delivery date is required.
 - Cost impact, if any is subject to a separate approval process as required by the changes clause.
- No *This SDDR grants relief from requirements or changes the requirements and all of the following apply:*
- No commercial impact (No modification of governing commercial terms is required) and;
 - No increase in price is requested by Seller and;
 - No decrease in price is anticipated or required by Buyer and;
 - No extension of promised shipment is required

NOTES:

1. Complete instructions provided at end of form.
2. Items 1 through 9 and 17 to be completed by Supplier
3. Items 10 through 16 to be completed by RPP-WTP.
4. Non applicable items to be marked "N/A"
5. Attach additional information whenever necessary
6. RPP-WTP must be notified within 5 days after detection of deviation



Supplier Deviation Disposition Request Engineering Disposition

PROJECT: River Protection Project Waste Treatment Plant JOB NO.: 24590 SDDR: 24590-WTP-SDDR-MS-10-00144 Rev. N/A

Title of SDDR: Plate Thickness for HOP-HX-00002/4

13. Part of DCP?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	DCP Number: N/A	Rev
14. ACA Needed?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	ACA Number: N/A	Rev

15. RPP-WTP Final Disposition Statement (Attach extra sheets, sketches, etc., as necessary).
See provisional disposition above. Is the final disposition the same as the provisional disposition? Yes No N/A

Approved
 Exception is granted from 24590-WTP-3PS-MEP0-T0001, Section 3.2.3. Specifically, the plates used for HOP-HX-00002 & HOP-HX-00004 may be constructed from 0.6 mm (0.0236 in.) thick plates.

RPP-WTP Justification (Attach extra sheets, sketches, etc., as necessary).
 Attachment I, *Burst Test for 0.6mm HX Plates*, indicates that the 0.6 mm plate achieves a burst pressure of 427 bar (6193 psi) with a corresponding MAWP of 65.26 bar (946 psi). This MAWP is greater than the Design Pressure specified on MDS 24590-HLW-MED-HOP-00031 of 5 psig.

REQUIREMENTS REVIEW

Client Approval Required*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	E&NS Screening Required	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Interface Resolution Required*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			

*Address these "yes" answers in the RPP-WTP Disposition Statement (above).

Affected RPP-WTP Documents:

Document Number	Rev	Remarks	Specification Retroactive?		Incorporation by	
			Yes	No	Design Change	Reference
24590-WTP-3PS-MEP0-T0001	0	Section 3.2.3 affected by reference	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Affected Supplier Submittals:

Document Number	Rev	Document Number	Rev
N/A			

NOTES:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Complete instructions provided at end of form. 2. Items 1 through 9 and 17 to be completed by Supplier 3. Items 10 through 16 to be completed by RPP-WTP. | <ol style="list-style-type: none"> 4. Non applicable items to be marked "N/A" 5. Attach additional information whenever necessary 6. RPP-WTP must be notified within 5 days after detection of deviation |
|--|---|



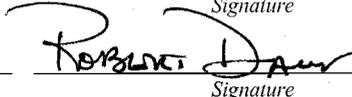
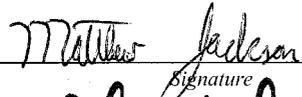
Supplier Deviation Disposition Request Engineering Disposition

PROJECT: River Protection Project Waste Treatment Plant JOB NO.: 24590 SDDR: 24590-WTP-SDDR-MS-10-00144 Rev. N/A

Title of SDDR: Plate Thickness for HOP-HX-00002/4

Reference Documents:			
Document Number	Rev	Document Number	Rev
N/A			

16. RPP-WTP Disposition Approval:

RE/Originator:	<u>Jake Brumfield</u> <i>Print/Type Name</i>	<u></u> <i>Signature</i>	<u>01/06/2011</u> <i>Date</i>
Checker:	<u>Mike Seed</u> <i>Print/Type Name</i>	<u></u> <i>Signature</i>	<u>1/6/11</u> <i>Date</i>
Reviewer(s):	<u>MET</u> <i>Print/Type Name</i>	<u></u> <i>Signature</i>	<u>1/11/2011</u> <i>Date</i>
E&NS Review (when required):	<u>N/A</u> <i>Print/Type Name</i>		
Procurement & Subcontracts Representative:	<u>Matt Jackson</u> <i>Print/Type Name</i>	<u></u> <i>Signature</i>	<u>1/6/11</u> <i>Date</i>
Approver(s):	<u>John Julyk</u> <i>Print/Type Name</i>	<u></u> <i>Signature</i>	<u>1/11/11</u> <i>Date</i>

NOTES:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Complete instructions provided at end of form. 2. Items 1 through 9 and 17 to be completed by Supplier 3. Items 10 through 16 to be completed by RPP-WTP. | <ol style="list-style-type: none"> 4. Non applicable items to be marked "N/A" 5. Attach additional information whenever necessary 6. RPP-WTP must be notified within 5 days after detection of deviation |
|--|---|



Supplier Deviation Disposition Request Engineering Disposition

PROJECT: River Protection Project Waste Treatment Plant JOB NO.: 24590 SDDR: 24590-WTP-SDDR-MS-10-00144 Rev. N/A

Title of SDDR: Plate Thickness for HOP-HX-00002/4

Supplier Acknowledgement:

The Supplier accepts the RPP-WTP's disposition herein and agrees to implement the RPP-WTP's disposition accordingly. Return the signed SDDR to the RPP-WTP Project Document Control (PDC).

17. Supplier	<hr/>	<hr/>	<hr/>
	<i>Print/Type Supplier Representative Name and Position</i>	<i>Signature</i>	<i>Date</i>

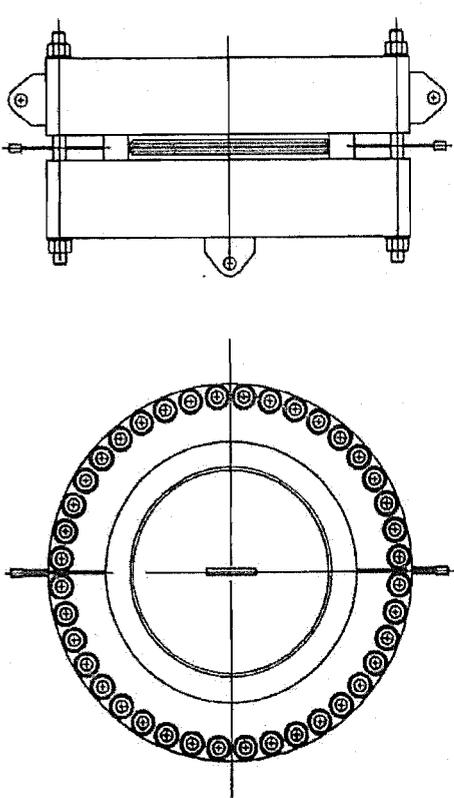
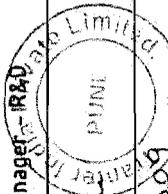
NOTES:

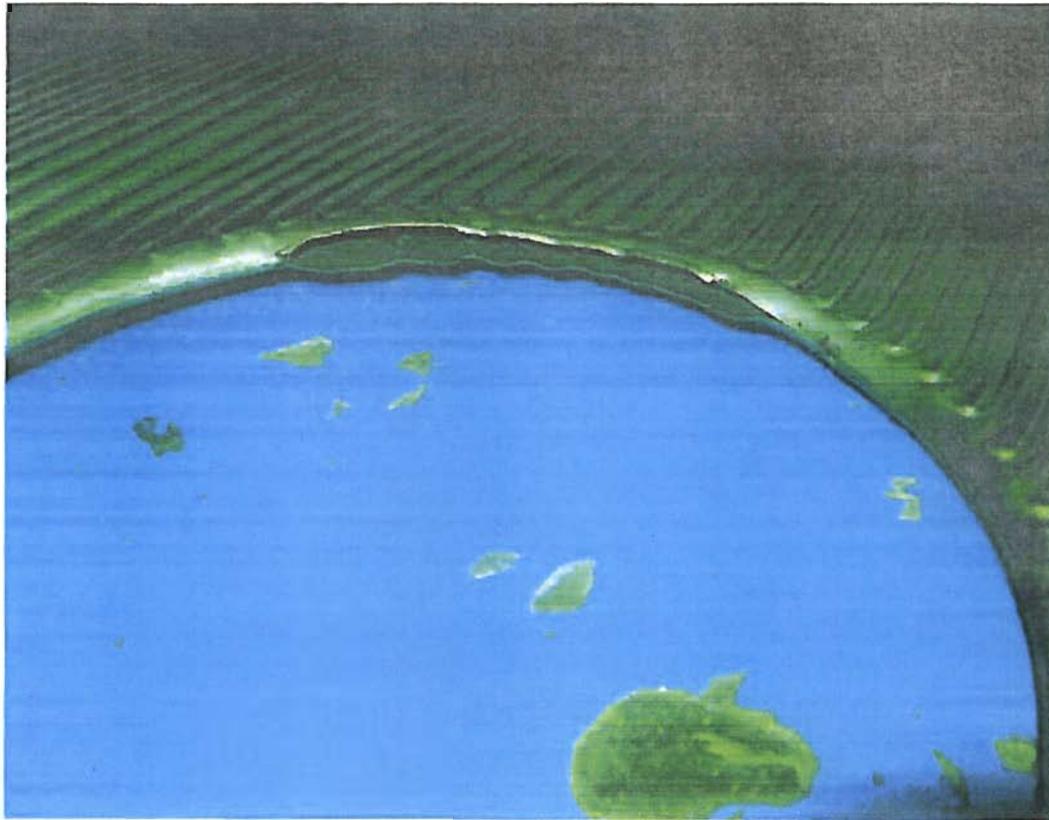
- | | |
|--|---|
| <ul style="list-style-type: none"> 1. Complete instructions provided at end of form. 2. Items 1 through 9 and 17 to be completed by Supplier 3. Items 10 through 16 to be completed by RPP-WTP. | <ul style="list-style-type: none"> 4. Non applicable items to be marked "N/A" 5. Attach additional information whenever necessary 6. RPP-WTP must be notified within 5 days after detection of deviation |
|--|---|

24590-WTP-SDDR-MS-10-00144

Page 7 of 11

Attachment 1
Burst Test for 0.6mm HX Plates

<p>Model - SPW-100 Thickness - 0.6mm Material : SA 240 TYPE 316L</p> <p>Burst Pressure obtained - 1427 bar g</p>		<p>Note</p> <p>1) Proof test is valid for all Tranter Locations worldwide</p> <p>2) During Proof test medium used is hydraulic oil (Sp. Gr. of the medium - 0.865), however for determining actual thickness for the job, the designers have to consider actual fluid head in the calculations.</p>										
<p>Tranter India Private Limited (Witnessed by)</p> <p>Name - Dr. N. Srihari</p> <p>Designation - Divisional Manager - R&D</p> <p>Signature - <i>[Signature]</i></p> <p>Date - Aug 19, 2009</p>		<p>OneBeacon America Insurance Company (Witnessed by)</p> <p>Name - Uday B. Naik (A.I.)</p> <p>Signature - <i>[Signature]</i></p> <p>Date - Aug 19, 2009</p>										
 <p>Tranter India Private Limited</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>SCALE</td> <td></td> </tr> <tr> <td>DRAWN BY</td> <td>US</td> </tr> <tr> <td>CHECKED BY</td> <td>SN</td> </tr> <tr> <td>APPD. BY</td> <td>SN</td> </tr> <tr> <td>DATE</td> <td>27.07.09</td> </tr> </table> <p>Drawing No. - SPW-100/06 Rev.0</p> <p>PROOF TEST ARRANGEMENT DRAWING MODEL - SPW-100/0.6mm</p>	SCALE		DRAWN BY	US	CHECKED BY	SN	APPD. BY	SN	DATE	27.07.09
SCALE												
DRAWN BY	US											
CHECKED BY	SN											
APPD. BY	SN											
DATE	27.07.09											



BURST CASSETTE : SPW-100/0.6



2459D-WTP-SDDR-MS-10-00144

Proof Test Report to Establish MAWP

Page 10 of 11

As per -
ASME Section VIII Division 1 Edition 2007, Addenda 2008, UG-101

Work Instruction : TIPL/GPT/01-Rev.No.: 0
Drawing No. : SPW-100/06 Rev.0
Date of the Proof Test : 19th August 2009
Location : Tranter India Private Limited, Pune - India
Welded Plate Heat Exchanger : SPW-100 with 0.6 mm plate thickness
Inner Port Seam Weld Joint : Plasma Arc Welding (PAW)
Material : Embossing SA 240 TYPE 316L 0.6 mm thickness
Corrosion allowance = 0
Hydraulic oil used for the test : ENERPAC Hydraulic oil
Specification of the oil : Viscosity @ 40 °C = 29 cP
Sp. Gravity = 0.865
Flash Point = 200 °C
Room Temperature : 30 °C
Duration for the test : 35 minutes

Actual tensile strength of the samples with H. No: 827788

S. No.	Sample width (mm)	Sample Thickness (mm)	Ultimate Load (N)	Ultimate Tensile Strength (MPa)
1	12.46	0.60	4600	615.30
2	12.54	0.60	4800	637.96
3	12.55	0.60	4900	650.73
Average	12.52	0.60	4766.67	634.66



24590-WTP-SDDR-MS-10-00144

Proof test calculations for Stainless Steel @ room temperature

Burst pressure obtained from the proof test experiment,
(The rupture observed at the port seam weld joint of the cassette)

$$B = 427 \text{ bar g.}$$

Specified minimum tensile strength at room temperature,

$$S_{\mu} = 485 \text{ MPa}$$

Avg. actual tensile strength of the test specimen,

$$S_{\mu, \text{avg}} = 634.66 \text{ MPa}$$

Weld joint efficiency,

$$E = 0.8$$

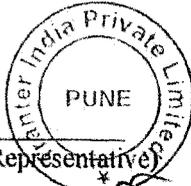
Maximum Allowable Working Pressure (MAWP),

$$P = \frac{B S_{\mu} E}{4 S_{\mu, \text{avg}}}$$

$$= 65.26 \text{ bar g.}$$

By:

(Company Representative)



Date:

Aug 19, 2009

Reviewed By:

(ASME-AI)

Date:

Aug 19, 2009

