

ORDER FOR SUPPLIES OR SERVICES

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 01/30/2009		2. CONTRACT NO. (If any) N033C055340		6. SHIP TO: Cecil Hedrick		
3. ORDER NO. MLL40P09011		4. REQUISITION/REFERENCE NO. PRWRSM09104		a. NAME OF CONSIGNEE DOT/Maritime Administration, WR Operations		
5. ISSUING OFFICE (Address correspondence to) DOT/Maritime Administration, WR Acquisition Office of Acquisition, MRG-4200 201 Mission Street, Suite 2200 San Francisco CA 94105-1905				b. STREET ADDRESS 201 Mission St Ste 1800		
7. TO:		c. CITY San Francisco		d. STATE CA	e. ZIP CODE 94105	
a. NAME OF CONTRACTOR Jerry Gerdes				f. SHIP VIA		
b. COMPANY NAME MAERSK LINE, LIMITED				8. TYPE OF ORDER		
c. STREET ADDRESS ONE COMMERCIAL PL 20TH FL				<input type="checkbox"/> a. PURCHASE REFERENCE YOUR: _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.		<input type="checkbox"/> b. DELIVERY - Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.
d. CITY NORFOLK		e. STATE VA	f. ZIP CODE 23510-2126			
9. ACCOUNTING AND APPROPRIATION DATA 2009 - - X4303 - RRF 933 - FS - ALGO - 0 - 00 - 0000 - 70 - 096133 - FS - ALGO - 25432				10. REQUISITIONING OFFICE DOT/Maritime Administration, Western Region		
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> g. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. EMERGING SMALL BUSINESS					12. F.O.B. POINT Destination	
13. PLACE OF		14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) 09/30/2009		16. DISCOUNT TERMS	
a. INSPECTION	b. ACCEPTANCE					

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	SEE LINE ITEM DETAIL					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT	19. GROSS SHIPPING WEIGHT	20. INVOICE NO.		17(h) TOT. (Cont. pages) 17(i) GRAND TOTAL \$636,707.00
	21. MAIL INVOICE TO: Susan Wong				
	a. NAME DOT/ Enterprise Services Center (ESC) OFO/FAA, Oklahoma City				
	b. STREET ADDRESS (or P.O. Box) MARAD A/P WR Invoices Branch, AMZ-150 PO Box 25710,				
	c. CITY Oklahoma City	d. STATE OK	e. ZIP CODE 73125		

22. UNITED STATES OF AMERICA BY (Signature) 		23. NAME (Typed) Debra K. Velmere TITLE: CONTRACTING/ORDERING OFFICER	
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**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 01/30/2009	CONTRACT NO. N033C055340	ORDER NO. MLL40P09011
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ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	<p><i>ALGOL FY09 M&R REPAIRS MLL ALG09 1005B PRWRSM09104</i></p> <p>Cost Reimbursable-Subcontract Over \$200K CLIN 2002AA; PROJECT NO. MLL ALG09 1005B</p> <p>FY09 M&R REPAIRS ACCOUNT NO. 010-005</p> <p>The purpose of this project is to accomplish MARAD approved specific work items on the ship's approved business plan, as identified below. All completed work shall be in compliance with applicable standards as set forth in the Ship Manager contract at Section J-34 TE-2, Compliance Documents, and subparagraphs thereto, at the time of acceptance.</p> <p>WO/SR 3600619 Starboard Boiler Superheater Repairs SEE ATTACHED SECTION B TASK ORDER ATTACHMENT and SECTION C STATEMENT OF WORK</p> <p><i>Delivery Date</i> 09/30/2009</p>	1.00	NTE	270,416.000	270,416.00	
0002	<p>Reference Requisition: PRWRSM09104</p> <p>Cost Reimbursement-Subcontract Under \$200K CLIN 2002AA; PROJECT NO. MLL ALG09 1005B</p> <p>FY09 M&R REPAIRS ACCOUNT NO. 010-005</p> <p>The purpose of this project is to accomplish MARAD approved specific work items on the ship's approved business plan, as identified below. All completed work shall be in compliance with applicable standards as set forth in the Ship Manager contract at Section J-34 TE-2, Compliance Documents, and subparagraphs thereto, at the time of acceptance.</p> <p>S/R 3600650 NDT Specialist for STBD Boiler Repairs SEE ATTACHED SECTION B TASK ORDER ATTACHMENT</p> <p>S/R 3001055 Assistant Port Engineer SEE ATTACHED SECTION B TASK ORDER ATTACHMENT</p> <p><i>Delivery Date</i> 09/30/2009</p>	1.00	NTE	160,000.000	160,000.00	
0003	<p>Cost Reimbursement-MLL Own Staff CLIN 2002AA; PROJECT NO. MLL ALG09 1005B</p> <p>FY09 M&R REPAIRS ACCOUNT NO. 010-005</p> <p>The purpose of this project is to accomplish MARAD approved specific work items on the ship's approved business plan, as identified below. All completed work shall be in compliance with applicable standards as set forth in the Ship Manager contract at Section J-34 TE-2, Compliance Documents, and subparagraphs thereto, at the time of acceptance.</p> <p>WO/SR 3600711 Crew OT SEE ATTACHED SECTION B TASK ORDER ATTACHMENT</p> <p><i>Delivery Date</i> 09/30/2009</p>	1.00	NTE	15,000.000	15,000.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17i) ➡ \$445,416.00

**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

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ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0004	<p>Cost Reimbursement-Subcontract Growth CLIN 2002AA; PROJECT NO. MLL ALG09 1005B</p> <p>FY09 M&R REPAIRS ACCOUNT NO. 010-005</p> <p>The purpose of this project is to accomplish MARAD approved specific work items on the ship's approved business plan, as identified below. All completed work shall be in compliance with applicable standards as set forth in the Ship Manager contract at Section J-34 TE-2, Compliance Documents, and subparagraphs thereto, at the time of acceptance.</p> <p>WO/SR 3600723 Growth - Supplemental Labor SEE ATTACHED SECTION B TASK ORDER ATTACHMENT</p> <p><i>Delivery Date</i> 09/30/2009</p> <p><i>Distribution: C Hedrick, K Dwyer, S Wong, SM</i></p>	1.00	NTE	191,291.000	191,291.00	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17i) ⇒ \$191,291.00

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SECTION B -- SUPPLIES OR SERVICES AND PRICES

B.1 TASK ORDER ATTACHMENT

PRWRSM09104 ALGOL
PROJECT NO MLL ALG09 1005B

CLIN 0001 (individual subcontract valued over \$200,000)

SR# 3600619 - Starboard Boiler Superheater Repairs \$ 270,416
To provide labor and material to repair the Superheater on the Starboard Boiler on the SS Algol. This job includes all the necessary procedures and needed NDT to complete the job. The job is based upon a 7 day per week - 12 hour per day operation See attached CLIN 0001 Specification. contract. Verbal approval provided 1/16/2009.

CLIN 0002 (individual subcontracts valued at less then \$200,000)

SR# 3600650 - NDT Specialist for Starboard Boiler Repairs \$ 113,965
To provide labor and material to NDT the repairs on the Starboard Boiler Superheater on the SS Algol (CLIN 0001). Technician to be a Senior NDE Technician with a Level II, UTSW-MT-PT credentials and be capable of providing any type of needed NDT to complete the oversight and quality assurance of the repair job. The job is based upon a 7 day per week - 12 hour per day operation

SR# 3001055 - Assistant Port Engineer \$46,035
To provide labor and material to assist the Vessel Manager during the repairs to the SS Algol Starboard Boiler Superheater project. To act as a liason between the contractos, vessel manager, crew and MARAD surveyor. Job includes reports and problem analysis and solutions. The job is based upon a 7 day per week - 12 hour per day operation

CLIN 0003 Work Performed with Own Staff

SR# 3600711 - Crew OT \$ 15,000
To provide labor and material to assist the Contractors with the repairs to the Starboard Boiler Superheater. Crew is responsible for the safety and security of the ship and the support services to the contractor such as power and compressed air and other possible related services. COTR approval required.

CLIN 0004 Growth

SR# 3600723 - Growth - Supplemental Labor \$ 191,291
To provide labor and materials to complete the repairs to the SS Algol Starboard Boiler Superheater. This additional labor and material may be any form of related services or contractors associated with the jobs under CLIN 0001 and/or CLIN 0002.

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SECTION C -- DESCRIPTIONS AND SPECIFICATIONS

C.1 CLIN 0001 STATEMENT OF WORK

MAERSK LINE LIMITED

MLL-08-F287-0036

SS ALGOL

REPAIR SPECIFICATION

FOR

STBD BOILER SUPERHEATER HEADER AND TUBES REPAIR AND BOILER SURVEY

NOV 21, 2008

SPECIFICATION INDEX

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GENERAL INFORMATION

1. The SS Algol is a Fast Sealift Ship (FSS) with 2 Foster Wheeler Boilers. The vessel is presently moored at the old Alameda Naval Air Station. The boiler work described in this specification is scheduled to be completed at this location.
Address: 1499 Ferry Point, Pier 2N, Alameda Point, Alameda, CA 94501
2. Contractor is responsible for all transportation, lodging and subsistence of the repair crew.
3. All work is scheduled on a "straight time" basis, 8 hours/day and 5 days/week.
4. Vessel Manager will appoint a Boiler Repair Consultant to oversee the repair effort.
5. Vessel Manager will appoint a certified NDT Technician to conduct the required NDT examinations.
6. Contractor shall appoint a lead person (foreman) from the repair crew who will be responsible to interface and report to the Vessel Manager and the Boiler Repair Consultant.
7. Contractor shall provide all tools required for the job, Cooper heat equipment for pre-heat, consumable materials such as welding rods, etc.
8. Vessel will provide compressed air, electrical power and water. Minor quantities of gases (oxygen & acetylene) can also be provided.
9. Contractor is responsible for maintaining a clean and safe work area. It is expected the disposal of all scrap is done at least weekly and the tidying up of the work area is carried out at the end of each working day.

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CONTRACTOR QUALIFICATIONS

1. Proof of Experience Repairing FSS Boiler Superheaters.

Contractor shall provide written documentation showing proof of having done repair and re-tubing projects on superheater headers and associated tubes on the Foster Wheeler boilers installed on the FSS (ex-SL7) vessels or similar plants.

2. Proof of Welder Experience Repairing and Installing New Tubes in FSS Boiler Superheaters - Possible requirement to prove capability to weld inside headers.

Contractor shall provide written documentation showing proof of having in their employ at least two (2) welders who were involved in a minimum of half of the jobs noted in item No. 1 above.

a) The welders must have the ability to perform the repairs outlined in these specifications and possess the proper "Qualifications" and "Certifications" to perform the repairs and new tube installation. Welders Certifications must comply with the ABS requirements for welding on High Pressure Steam Vessels.

b) One (1) of the two (2) welders will have to be available at all times for the entire duration of the welding repairs noted in these repair specifications. Exception for absence will be agreed upon between the Vessel Manager and/or the Boiler Repair Consultant and the Contractor at least one (1) week in advance.

c) ABS Welder Qualifications and Welding Procedures:

¢ Supply 4 copies of each Welder's qualifications (One copy to ABS)

¢ Supply 4 copies of Welding Procedure to be used for the Superheater Header repairs and Tube Welding procedures

3. Tools for Repairs and Tube Installation.

Contractor must have all the tools and equipment noted in these repair specifications and show proof to the Vessel Manager and the Boiler Repair Consultant of having the tools or having ordered the tools to be used for each of the procedures.

4. Documentation

Contractor must document all the repairs being done to the superheater header and associated tubes on agreed upon forms supplied by the Vessel Manager.

a) Each of the superheater header repairs will be documented by digital photo and identified by agreed upon documentation provided by the Vessel Manager. Specifically, the areas known as "ligaments" must be documented to show:

¢ Depth of the grinding necessary to safe end the crack found

¢ NDT used to show the completed cleanup of the safe ended crack

¢ Digital photo of the ground out area with NDT proof of safe ending of the crack

¢ Root pass plus necessary additional welds to fill the ground area and the confirmation that all slag and inclusions were removed between welds

¢ Final repair to be NDT'd and documented using digital photos

b) Each existing tube repair to be documented to show the following:

¢ Weld removal by grinding and final milling to show the tube end and "clean" arrangement of the tube end and adjacent bore holes on the header.

¢ Tube rolling that was done

¢ Tube ferrule insertion

¢ Root pass of the ferrule to tube to header

¢ NDT used to prove the Root Pass and Cover passes

¢ Final repair to be documented using digital photos

Note: This may be in some ways a duplication of step "a" above but is necessary to have so that the Vessel Manager is assured of an individual existing tube repair using a ferrule.

¢ At completion of the job, the documentation (three copies) to be provided to the MLL Vessel Manager in a file.

Note: Copies to include the following information:

¢ All information relevant to items "a" thru "c" above as applicable

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- ¢ All photos with identified location
- ¢ All documentation of repairs as noted in items "a" thru "c" above as applicable

5. Guarantee of Work Performed

Contractor to refer to "Warranty of Supplies and Services" as outlined in part IV "Contract Clauses, paragraph 11

6. Daily Log : Status / Progress report

- a) Contractor to keep a daily log noting Start and Finish dates and times
- b) All persons aboard working for the Contractor to be signed in with their individual hours
- c) Pertinent activity to be noted with identification of the tube area worked on for the day or other activity such as air test or hydro or new leaking tubes found
- d) Final log to be turned over to the Vessel Manager weekly and at the end of the job

CONTRACTOR JOB DESCRIPTION

1. Existing Conditions: Refer to MARAD Dwg: S51-502, Tube Identification Drawings.

- a) Stbd Boiler Superheater has approximately 160 tubes that are leaking. Leaks are most likely in the "ligament" area of the header and/or from poor welds that have "Slag Pockets". Vessel Manager has identified the locations of the known leaks identified during hydro testing to 900 psi and tabulated below:

Note: "L" Denotes Leakers

INLET /OUTLET HEADER

SUPERHEATER LOOP

SUPERHEATER ROW	1	2	3	4	5	6
ROW 1 L	L	L	L			
ROW 2 L	L	L	L			
ROW 3 L	L	L	L	L		
ROW 4 L	L	L	L	L		
ROW 5 L	L	L	L	L		
ROW 6 L	L	L	L	L		
ROW 7 L	L	L	L	L		
ROW 8 L	L	L	L	L		
ROW 9 L	L	L	L	L		
ROW 10L	L	L	L			
ROW 11L	L	L				
ROW 12	L	L				
ROW 13L	L					
ROW 14L	L					
ROW 15L	L					
ROW 16L	L	L	L			
ROW 22L	L			L	L	
ROW 37					L	
ROW 38				L	L	
ROW 39					L	
ROW 50L	L	L		L		
ROW 51L						
ROW 52	L					
ROW 53L	L	L	L		L	
ROW 54L	L	L	L			
ROW 55L	L	L	L			
ROW 56L						

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ROW 61			L
ROW 62		L	L
ROW 63		L	L
ROW 76L			
ROW 79	L		
ROW 80	L		
ROW 81	L		
ROW 86L	L		
ROW 87L			
ROW 93L			
ROW 96	L		
ROW 106	L	L	
ROW 107	L		
ROW 108	L	L	

INTERMEDIATE HEADER
SUPERHEATER LOOP

SUPERHEATER ROW	1	2	3	4	5	6
ROW 8 L						
ROW 9 L						
ROW 10L						
ROW 38L	L					
ROW 39L		L				
ROW 40L	L					
ROW 41L	L					
ROW 42L	L					
ROW 61			L			
ROW 72L	L	L				
ROW 73L	L		L			
ROW 74	L		L			
ROW 75L	L					
ROW 94L						
ROW 95L	L					
ROW 96L						
ROW 105		L				
ROW 106					L	
ROW 107			L	L	L	
ROW 108		L	L	L	L	
ROW 109		L	L	L	L	
ROW 110	L	L	L	L	L	

- b) Twenty (20) locations have been repaired by a previous contractor including three (3) plugged tubes - these have been proven by air test and hydro testing.
- c) The Superheater cavity doors are open. Closing these doors at the completion of the repairs will be the responsibility of the contractor.
- d) The Superheater cavity door frames are removed and shall be reinstalled after the completion of repairs.
- e) The Safety Valves are blanked off in preparation of the hydro to test the final repairs. Removing the blanks may be the contractor's responsibility. Contractor should price in time and material for this task.
- f) Some piping and obstructions have been removed to allow for access to the Superheater Headers. Contractor should make note of those items removed and make appropriate replacement at completion of the repairs.

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g) Pallets are sitting on the hand rails below the Superheater Headers to be used for access/staging to the areas to be repaired. Contractor will be required to remove these from the ship if they are not to be used or if other scaffolding is to be used. In any case, at completion of the job these pallets shall be removed from the ship and disposed of properly.

2. Initial start up and routine responsibilities of the job

CAUTION:

Contractor must get approval from the Chief Engineer of the SS Algol before beginning any work aboard the ship. All appropriate Lock Out-Tag Out procedures must be observed and witnessed by both the Chief Engineer and the Foreman for the Contractor before any work is begun on the boiler. The job will not be considered completed until the removal of the Lock Out-Tag Out postings are removed as witnessed by the Chief Engineer and a representative of the Contractor. The records for this process and all other safety procedures must be handed over to the Vessel Manager at the completion of the job.

Contractor must review with the Chief Engineer all the necessary safety requirements as stated by the Ship Manager - Maersk Line Limited prior to the time that the work is started.

Contractor will abide by rules and requirements that Chief Engineer requests to promote the overall safety of the job, the ship and its crew and the contractor's employees.

a) Access to perform the repairs and tube renewal

Provide labor and material to open all doors, brickwork, handholes and other access to perform the needed work to do repairs to the header and tubes in the Superheater on the Starboard Boiler. This includes both the furnace side and exterior doors.

b) Equipment for Job

Provide all necessary staging, lighting, welding machines, welding rod, hand tools, PPE, and other equipment necessary to be used during the duration of the repairs and subsequent acceptance tests. Contractor should have their own job box so that they can safely stow their gear during non-work periods.

c) Cleanliness

Contractor shall keep a clean work place and collect all debris weekly and dispose of same in a proper manner. Contractor will provide their own debris container and not use the ship's debris box for disposal purposes. Contractor will supply their workers with "butt" cans to properly dispose of cigarettes or other smoking materials and not discard them around the work area.

d) Ship Support

Contractor may use ship's power and compressed air. Ship will not supply any tools or lights or materials unless it is approved the Chief Engineer. It is expected that the Contractor be prepared for all eventualities and be properly geared up to do the job.

e) Job Coordination - Weekly Reports - Problem Notification

After the initial clearance by the Chief Engineer, the Contractor Foreman will meet with the Chief Engineer, Vessel Manager, Boiler Repair Consultant before beginning any work on the Algol Starboard Boiler Superheater.

The meeting will be chaired by the Vessel Manager and will set down specific guidelines how the job is to be conducted and will be based on these specifications. If any additional items develop during the time between when the job is awarded and when the job is to begin, it will be discussed at this time. This is also the time that the Contractor must confirm verbally that they are ready to do all parts of the job and if they are not ready, a notice in writing outlining a reasonable time frame as to when they might be ready to conduct parts of the job that are delayed.

The Boiler Repair Consultant will be the on-site coordinator for the job in its entirety. The Boiler Repair Consultant will report to the Vessel Manager. If there are any disputes regarding procedures or need for additional work items, the approval must come from the Vessel Manager.

The Contractor will supply the Boiler Repair Consultant with a weekly update and forecast of when parts or the whole job might be completed.

3. Superheater Header preparation and Superheater Header Repair

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- a) Header preparation, old weld removal and preparation of the tube seating area
- ¢ In the vicinity of the leaking tube, remove all excess ligament by grinding and round off sharp edges.
 - ¢ Using a fly cutter or multi tooth flat face milling tool, remove the entire seal weld between the header and the tube end and prepare the new seal weld groove.
 - ¢ If using a fly cutter, the final groove preparation shall be using a multi face cutter. Note: This milling tool to be a Wilson Model No: 72555-2623 or 73510-2623 or equivalent to leave a 2 +/- 1/8" inch diameter clean surface for the new root pass between the header and the tube end. Upon completion of this job, this tool will remain the property of the vessel.
 - ¢ Refer to the attached diagram for reference for correct preparation
- b) NDT process.
- ¢ Vessel manager will appoint an independent certified NDT technician to help with any flaw detection. The qualifications shall at a minimum be a Senior NDE Technician, Level II and experienced in PT, MT and UTSW.
 - ¢ After the tube and header is prepared the NDT technician will NDT the surfaces of the header to find any cracks in the tube or the adjacent ligament.
 - ¢ NDT process to be industry standard for this application to insure that all cracks are located and if located safe ended by the Contractor prior to seal welding.
 - ¢ NDT Technician shall document the final prepared area as to location with digital photo and as appropriate proven crack-removed area(s).
4. Welding guidelines for Header-Tube Repair
- a) Fabricate Chrome-Moly Ferrules beveled on one end for welding. Material shall be compatible with Header (Minimum of 1.25% Chrome). See Figure #1 and specifications. Ferrule does not have to be split but needs to have a chamfer to assist with the welding procedure between the tube and header.
- b) Install ferrule in the tube ID of the tube location to be rewelded.
- c) Preheat headers to 350 deg F and confirm with a temperature stick. Preheating shall be done with cooperheat blankets, on a minimum of one superheater pass, comprising about 20 rows. No localized heating shall done for repairs.
- d) Weld in root passes using appropriate rod and amperage.
- e) NDT all root passes before beginning cover passes.
- f) Weld in cover passes (2-3 passes) - See Figure #2.
- g) NDT cover passes.
- h) "Temper Bead" technique welding to be used on top of the cover passes, but not touching the base metal. This may be used in lieu of a post head process. This NAVSSES procedure can be found in section 5A-3.8.5.3 (page 5-90) with associated figure 5A-1 (page 5-99)
- i) Remove the ferrules by using a mill that is the equal to or less than (0.010") size tube ID of the superheater tubes and clean up same with a stone.
- j) The ligament between loop 1 and 2 as well as loop 5 and 6, shall be built up with 3/16" to 1/4" weld bead from the seal weld on loop 2 and loop 5 to the edge of the ligament on loop 1 and loop 6 respectively. This weld bead shall be in the axial direction of the header and span a minimum of 2 superheater rows
- k) Final NDT cover passes.
- l) Air test the completed job and prove to the Boiler Repair Consultant and/or Vessel Manager. Correct any leaking tubes.
- m) For those tubes that are cracked and not repairable, note same and bring to the attention of the Boiler Repair Consultant and/or Vessel Manager to be plugged.
- ¢ Plug the tubes on both Inlet-Outlet Header side and Intermediate side according to attached procedure. NDT each plugged area to make sure root welds and cover welds are sound and free of inclusions.
 - ¢ Document same by Digital Photo and location.
- c)n) Hydro to 1.25% of design pressure once the Air Test has been accepted. While at hydro pressure, all backing bolts for hand holds and manhole plates must be hardened up. Note: Hydro should have a minimum temperature of 70 degrees Fahrenheit and the test gage will have been calibrated with the last 30 days. The hydrostatic pump will be fitted with a relief

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valve to prevent damage to the boiler by overpressure. The relief valve must have a seal to prevent tampering with same. Refer to the figure below.

o)

p)

q)o) If preliminary hydro is successful, hydro for the ABS to 1.25%

Notes:

1. Contractor shall be prepared to show the ABS the procedures being used for this repair and have all the proper procedures, welders qualifications and support materials certifications available for their inspection or the Vessel Manager or Boiler Repair Consultant.

2. Contractor is responsible for the welding in root passes and cover passes. If a weld is found faulty then it is the responsibility of the Contractor to fix the deficiency without charging the ship for the time and material to make the repair.

5. Cleanup of the boiler internals and work area prior to testing

Contractor shall remove all unnecessary staging and work equipment prior to the time the final testing after the repairs are completed. This is to include both the boiler internals and the exterior accesses to the Superheater Headers and the Furnace side of the Port Boiler.

Contractor shall provide staging, ladders, lighting, and any other equipment necessary for inspection of the final repairs. If slag or old material has been forced into the Superheater Tubes, use compressed air or other methods to make sure each tube pass is free of foreign materials. Be prepared to show the Vessel Manager and/or Boiler Repair Consultant the cleanliness of the job.

6. Testing of the Repairs and Tube Plugging

a) Air Testing

Contractor to air test the repairs to prove the welds and repairs are tight. Final test to be witnessed by Boiler Repair Consultant, Vessel Manager, Chief Engineer.

b) Hydro to 1.25%

Contractor to provide all the labor and material to conduct a 1.25% hydro including but not limited to:

¢ Blanking the safety valves.

¢ Hooking up the water and filling the boiler.

¢ Supplying and hooking up the hydro pump.

¢ Emptying the boiler water after the hydro to an appropriate Environmental Tank - no water to go over the side of the vessel.

¢ Once hydro is completed, return the safety valves and all piping to normal or as found before the job was started.

¢ Replacing gaskets after hydro is completed.

7. Final Cleanup after the job is completed

a) Walk the work area with the Vessel Manager to make sure any part of the Engine Room that was used is clean and that all Contractor tools and materials are removed from the ship.

b) Return all tools borrowed to the ship's Chief Engineer and replace any tools that were damaged or lost.

c) Turn over any weld/ferrule removal tools that were purchased for the job such as noted in sections "3-a" and "4-i" of the Contractor Job Description.

8. Documentation and Job sign-off

a) Job will not be considered completed until the records have been turned over to the Vessel Manager - logs, digital photos, reports, etc.

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b) Final Change Orders and time to be discussed and agreed upon based upon the records kept by the Boiler Repair Consultant.

9. Cost Breakdown requirements

Contractor shall breakdown costs in the bid documents according to Appendix B