

**PURCHASE ORDER
MODIFICATION**

FORM PA-POMD-1 (3322160)

**NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA**

O.B.R.P. ☐ YES ☐ NO
VENDOR ORDER NO.

MODIFICATION NO. **5**
TO PURCHASE ORDER NUMBER

77240

H-573-635A-22

IMPORTANT - *See Note Below*

DATE OF ISSUE (BY PA)
February 3, 1964

INSPECTION BY
ABS and as noted herein

INSPECTION AT
Destination

TO: **The Terry Steam Turbine Company
The Hawkins-Hamilton Company, Inc., Repr.
P.O. Box 7128
Richmond 21, Virginia**

PLEASE MODIFY THIS PURCHASE ORDER AS SPECIFIED HEREIN. ALL TERMS AND CONDITIONS OF THE ORIGINAL PURCHASE ORDER AND APPENDICES ATTACHED THERETO REMAIN IN EFFECT UNLESS SPECIFICALLY ALTERED BY A MODIFICATION.

ACKNOWLEDGE RECEIPT OF THIS MODIFICATION IMMEDIATELY, ADVISING ITS EFFECT ON PRICE AND DELIVERY.

**L. B. PETERSON, MANAGER OF PURCHASES (OR)
W. K. WILLS, PURCHASING AGENT**

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
2		TURBINES: STEAM, for Deepwell Main Cargo Oil Pumps - Cancel (Special Tools) On Sheet 2, change the fourth paragraph from the bottom to read: The guaranteed water rate at the above rating shall be 28.4 lbs./H.P.-Hr. when supplied with desuperheated steam at 280 psig and 498°F. total temperature at the turbine inlet flange and operating with a 10 psig back pressure. Item 2 deleted per your letter of December 31, 1963. Change in steam conditions is per your letter of January 2, 1964.		

ARB
1/23
WJH-dm
FBB*

SHEET NO. 1 OF 1 SHEETS
MODIFICATION

*This Number MUST Appear On All
Correspondence, Invoices, Packages
And Shipping Papers.*

MODIFICATION NO. **5**
TO PURCHASE ORDER NUMBER
H-573-635A-22

**PURCHASE ORDER
MODIFICATION**

FORM PA-POMD-1 (3322160)

**NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA**

O.B.R.P. ☐ YES ☐ NO

VENDOR ORDER NO.

MODIFICATION NO. **4**
TO PURCHASE ORDER NUMBER

H-573-635A-22

IMPORTANT - *See Note Below*

DATE OF ISSUE (BY PA)
January 28, 1964

INSPECTION BY
ABS and as noted herein

INSPECTION AT
Destination

TO: **The Terry Steam Turbine Company
The Hawkins-Hamilton Co. Inc., Repr.
P.O. Box 7128
Richmond 21, Virginia**

77240

PLEASE MODIFY THIS PURCHASE ORDER AS SPECIFIED HEREIN. ALL TERMS AND CONDITIONS OF THE ORIGINAL PURCHASE ORDER AND APPENDICES ATTACHED THERETO REMAIN IN EFFECT UNLESS SPECIFICALLY ALTERED BY A MODIFICATION.

ACKNOWLEDGE RECEIPT OF THIS MODIFICATION IMMEDIATELY, ADVISING ITS EFFECT ON PRICE AND DELIVERY.

**L. B. PETERSON, MANAGER OF PURCHASES (OR)
W. K. WILLS, PURCHASING AGENT**

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		TURBINES: STEAM, for Deepwell Main Cargo Oil Pumps - GROUP 635-3 - For Humble Oil and Refining Co. Tankers - Change the "Title" to read as shown above. On Sheet 1, at top of the Quantity Column, add: <u>2 Ships</u> .		
1		Increase quantity from 4 to <u>8</u> .		
		Change item 2 to read as follows:		
2	2	Outfits of special tools in accordance with Appendix B, Section V, one outfit per ship.	included	
4		Increase quantity from 6 to <u>2</u> .	included	
		This modification exercises the option in the basic purchase order concerning purchase for a second vessel. Add shipment for second shipset of material July 2, 1964. Increase total price by \$18,940.00:		

ARB
1/21
WJH-dm
FBB*

SHEET NO. 1 OF SHEETS
MODIFICATION

*This Number MUST Appear On All
Correspondence, Invoices, Packages
And Shipping Papers.*

MODIFICATION NO. **4**
TO PURCHASE ORDER NUMBER
H-573-635A-22

EXX-MOR-002462

**PURCHASE ORDER
MODIFICATION**

FORM PA-POMD-1 (3322160)

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY
NEWPORT NEWS, VIRGINIA

O.B.R.P. ☐ YES ☐ NO

VENDOR ORDER NO.

YES

MODIFICATION NO. **3**
TO PURCHASE ORDER NUMBER

H-573-635A-22

IMPORTANT - *See Note Below*

DATE OF ISSUE (BY PA)

January 22, 1964

INSPECTION BY
ABS and as noted herein

INSPECTION AT
Destination

TO: **The Terry Steam Turbine Company**
The Hawkins-Hamilton Co., Inc., Repr.
P.O. Box 7128
Richmond 21, Virginia

77240

PLEASE MODIFY THIS PURCHASE ORDER AS SPECIFIED HEREIN. ALL TERMS AND CONDITIONS OF THE ORIGINAL PURCHASE ORDER AND APPENDICES ATTACHED THERETO REMAIN IN EFFECT UNLESS SPECIFICALLY ALTERED BY A MODIFICATION.

ACKNOWLEDGE RECEIPT OF THIS MODIFICATION IMMEDIATELY, ADVISING ITS EFFECT ON PRICE AND DELIVERY.

L. B. PETERSON, MANAGER OF PURCHASES (OR)
W. K. WILLS, PURCHASING AGENT

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
		TURBINES: Steam for Deepwell Main Cargo Oil Pumps - Add the following: A connection shall be provided for determining steam chest pressure. The connection is to be a 1/2" extra heavy I.P.S. carbon steel nipple 4" long with plain end.		

ARB
1/8
WJH-br
FBB*

SHEET NO. 1 OF **1** SHEETS
MODIFICATION

*This Number MUST Appear On All
Correspondence, Invoices, Packages
And Shipping Papers.*

MODIFICATION NO. **3**
TO PURCHASE ORDER NUMBER
H-573-635A-22

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

PURCHASE ORDER NO.

DISTRIBUTION COPY

FORM PA-POD-2 (3322102)

Mod. 1

ITEM	QUANTITY	DESCRIPTION	77240	H-573-635A-22RECORDS
		The Terry Steam Turbine Company The Hawkins-Hamilton Company, Inc., Repr. P.O. Box 7128 Richmond 21, Virginia		October 15, 1963 ABS and as noted herein Destination
		TURBINES: Steam for Deepwell Main Cargo Oil Pumps - Change inspection to read as shown above. On sheet 2, delete the following: Fixed Vibrating Reed Tachometer. (12th line) High pump discharge trip. (21st line) On sheet 3, in the sixth paragraph delete the last sentence. Add the following: NOTE: Fixed mechanical tachometer (not vibrating reed type) will be provided by the shipyard.		

ARB
10/10
WJH-B
FBB*

1

SHEET NO.

DISTRIBUTION COPY

PURCHASE ORDER NO.

H-573-635A-22

EXX-MOR-002464

**PURCHASE ORDER
DISTRIBUTION COPY**

FORM PA-POD-1 (3322100)

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

LEAD YARD ORDER NO.

O.B.R.P. ☐ YES ☒ NO
VENDOR ORDER NO.

VENDOR

The Terry Steam Turbine Company
The Hawkins-Hamilton Co., Inc., Repr.
P.O. Box 7128
Richmond 21, Virginia

N.N. VENDOR NO.

77240

PURCHASE ORDER NUMBER

H-573-635A-22

YD. REQ. NO.

IMPORTANT-

See Note Below

DATE OF ISSUE (BY PA)

September 25, 1963

INSPECTION BY

Owners

INSPECTION AT

Destination

See below

APPLICABLE
APPENDIX

BUYER	PLACEMENT	COMMODITY	AMOUNT	DATE SHIPMENT WANTED	DATE SHIPMENT PROMISED
3	10	100		March 2, 1964	
F.O.B. Hartford, Conn.		TERMS Net 30 Days		CHARGE NO. 635	STOP NO.

ITEM	QUANTITY	DESCRIPTION	IDENT. NO.	UNIT PRICE	TOTAL PRICE
		See notes on last sheet.	19		
		TURBINES: Steam for Deepwell Main Cargo Oil Pumps - Group 635-3 - For Humble Oil and Refining Co. Tanker			
		One print of our Drawing No. 198350 Rev. 5 forms part of this purchase order.			
1	4	Horizontal Marine Turbines, Terry Type GAT.			
2	1	Outfit of special tools in accordance with Appendix B, Section V.			
3	See Appendix	Drawings.			
3-a	See Appendix	Drawings for preliminary and/or foundation information, in accordance with Appendix B, Section IIIA.			
3-b	See Appendix	Drawings for approval, in accordance with Appendix B, Section IIIB.			

PURCHASE ORDER NO.

H-573-635A-22

SHEET 1 OF 5 SHEETS

DISTRIBUTION COPY

This Number MUST Appear On All Correspondence, Invoices, Packages And Shipping Papers.

EXX-MOR-002465

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

TURBINES: Steam for Deepwell Main
Cargo Oil Pumps -

PURCHASE ORDER NO.

DISTRIBUTION COPY

H-573-635A-22

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
4	6	Instruction books in accordance with Appendix B, Section IV. The turbines are to be for non-condensing operation and are to drive self-priming deepwell pumps through a short extension shaft and right angle reduction gears. The extension shaft, turbine half flexible coupling, and foundation will be provided by the Shipyard. All equipment must be suitable for installation in an unheated enclosure on the weather deck of the vessel. The turbines shall be equipped with the following: Fixed Vibrating Reed Tachometer. Ring oil lubrication system complete with auxiliary gear pump (to aid circulation at high RPM) and sight oil level indicator. Overspeed trip (set at not over 115% rated speed). Constant speed governor (adjustable to 80% speed). Throttle valve. Steam strainer. High back pressure trip (set at 25 psig). High pump discharge trip (set at 150 psig). Sentinel valve on casing. Emergency trip (suitable for operation by Shipyard furnished pushbutton stations). Each turbine is to be capable of delivering 900 H.P. at not over 4110 R.P.M. The guaranteed water rate at the above rating shall be 27.5 lbs./HP-Hr. when supplied with desuperheated steam at 300 psig and 500°F. total temperature at the turbine inlet flange and operating with a 10 psig back pressure. The turbine shall normally operate with steam at 280 psig 498°F. and 10 psig back pressure. Manufacturer to advise the water rates at 75%, 50%, and 25% load. The turbines must be of ample strength to withstand steam at 330 psig.	Included

SHEET NO. 2

DISTRIBUTION COPY

PURCHASE ORDER NO.

H-573-635A-22

EXX-MOR-002466

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

TURBINES: Steam for Deepwell Main
Cargo Oil Pumps -

PURCHASE ORDER NO.

DISTRIBUTION COPY

H-573-635A-22

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
		The lubrication system is to assure adequate lubrication at all speeds up to and including the overspeed trip setting. The vendor is to advise the Shipyard immediately if water cooling is required. If cooling is required, the cooling medium provided will be salt water. Materials in contact with the cooling medium must be suitable for use with salt water and designed to withstand a maximum pressure of 80 psig. The necessary boring information, etc. for the shaft couplings is to be forwarded to the Shipyard as soon as available. Rotation is to be counterclockwise when viewing the turbine from shaft coupling end. Due to the self-priming feature of the deep well pumps (Bingham Pump Company) the turbines will be subjected to rapidly fluxuating load conditions and the constant speed governor system must be suitable to prevent undue acceleration or trip out of the turbine due to overspeed. All solenoids and switches are to be explosion proof. The solenoids must be suitable to be continuously energized during operation and arranged to trip the turbine when de-energized. The same solenoid employed for the high pump discharge trip is to be used with the remote emergency trip push-button stations. Electrical equipment is to be suitable for 115 volt, 60 cycle alternating current. The turbines shall be tested by the manufacturer for satisfactory operation, alignment, etc. Further tests will be conducted at the Shipyard to insure satisfactory operation with the pumps and gears after installation on board the ship. After completion of shop tests at Vendor's plant any packing liable to cause corrosion by remaining in place during shipping or storage of the equipment is to be removed, stowed separately, and carefully marked so as to assist in its reinstallation. Rods or shafts, in way of the packing, are to be properly protected from corrosion during shipment or storage of the equipment.	
SHEET NO. 3		PURCHASE ORDER NO.	
DISTRIBUTION COPY		H-573-635A-22	

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

TURBINES: Steam for Deepwell Main
Cargo Oil Pumps -

PURCHASE ORDER NO.

DISTRIBUTION COPY

H-573-635A-22

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
		Lagging clips shall be welded or otherwise attached to each unit, in proper location, to permit attachment of insulation. They are to be located close to bolted joints where fixed insulation will terminate. The joint will be covered with portable pad. Connections are to be ASA Standard in accordance with the applicable pressure temperature rating. The raised faces of flanges over 150 pounds working pressure are to be machined in accordance with Drawing Number 198350 Rev. 5. Connections for Shipbuilders' piping shall be suitable for withstanding loads imposed upon them due to normal expansion and contraction of the piping attached thereto in accordance with good Marine practice. All turbine lagging, structural base foundation and pressure and vacuum gauges not otherwise noted will be furnished by the Shipyard, but all attached gland sealing and lubrication piping is to be furnished with the turbines. The equipment must meet all the applicable requirements of Appendix B-573. The material furnished for each item shall be substantially tagged or clearly marked for identification with the item and purchase order number thereof. For identification purposes during installation, the following electrical components are to have the following symbol numbers plainly marked thereon, or have a durable tag bearing these numbers securely attached thereto: Solenoid 5091 Pressure 5092 Switch <u>Applicable Appendices</u> A-573 B-573 Rev. A, dated June 26, 1963	

SHEET NO. 4

DISTRIBUTION COPY

PURCHASE ORDER NO.

H-573-635A-22

EXX-MOR-002468

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

TURBINES: Steam for Deepwell Main
Cargo Oil Pumps -

PURCHASE ORDER NO.

DISTRIBUTION COPY

H-573-635A-22

FORM PA-POD-2 (3322102)

ITEM	QUANTITY	DESCRIPTION	RECORDS
		Vendor's plans were due in Newport News prior to the placement of this order. Your prompt forwarding of plans will be appreciated. Manufacturing Authorization: Release to manufacture is withheld pending approval of vendor's drawings. Any work done prior to approval of the drawings and authorization to proceed with work, except by specific written instructions from this Company, will be at the vendor's own risk. Release to manufacture will be given by a letter. Option: In the event the Owners, by February 15, 1964, contract with the Purchaser for the construction of a tanker essentially duplicating that for which the equipment specified herein is to be used, the Vendor agrees to furnish to the Purchaser equipment duplicating that specified herein at a price of: In the event the Owners, within eighteen months, contract with the Purchaser for the construction of a third and/or fourth vessel of the same design, the Vendor agrees to furnish to the purchaser a third and/or fourth set of equipment duplicating that specified herein at the price of the second shipset of equipment escalated in accordance with The Bureau of Labor Statistics Index for Metal and Metal Products, but not to exceed 10%. Advise price to apply for the addition of Tachometer. Total Price: <u>FOR NEWPORT NEWS INFORMATION ONLY:</u> Schd. Req'd. Date 3-23-64 Wanted 3-23-64. This order should have been placed by 7-1-63 in order to meet the "required in yard" date, when using average lead time.	

ARB
WJH-HMP-oc

FBB*

JTT

SHG

JLW

HJC

GWB

TEL

RLS

9/14

SHEET NO. 5

DISTRIBUTION COPY

PURCHASE ORDER NO.

H-573-635A-22

EXX-MOR-002469