Enclosure 1 - Work Item (WI) 519 Refrigeration Compressor Safety Valve Test (5YR)

T-AKE CLASS

MACHINERY, AUXILIARY SYSTEMS

ITEM NO. 519 **Category "A"**

1.0 ABSTRACT

This item describes replacement/repair, testing and certification of safety valves.

2.0 REFERENCES/ENCLOSURES

2.1 References

2.1.1 T9516-A8-MMC-01C; Technical Manual for Refrigeration Plant, Cargo for USNS AKE 1 Class

2.2 Enclosures

2.2.1 List of Safety Valves

3.0 ITEM LOCATION/DESCRIPTION

3.1 Location/Quantity

3.1.1 Location: See Enclosure 2.2.1

3.1.2 Quantity: Four (4) compressor, Twelve (12) total

3.2 Item Description/Manufacturer's Data: Leser Safety Valve

4.0 GOVERNMENT FURNISHED EQUIPMENT/MATERIAL/SERVICE: None

5.0 NOTES

5.1 The contractor and all subcontractors, regardless of tier must consult the General Technical Requirements (GTR) to determine applicability to this work item. In performance of this work item, the contractor and all subcontractors regardless of tier must comply with the requirements of all applicable GTR's including but not limited to GTR's 1 through 7, 22, 23, 24, 28, and 29.

5.2 The contractor and all subcontractors, regardless of tier are advised to review other work items under this contract,

including but not limited to Work Items XXX and XXX to determine their effect on the work required under this work item. Many of the definitions relating to performance of this work item are found in Work Item 001.

5.3 THIS SHIP CONTAINS HIGH VOLTAGE (HV) ELECTRICAL SYSTEMS. OBEY ALL POSTED AND VERBAL INSTRUCTIONS REGARDING SAFETY AND EXCLUSION FROM HIGH VOLTAGE AREAS. AT NO TIME APPROACH, WORK ON, OR ENTER A HIGH VOLTAGE AREA WITHOUT PROPER AUTHORIZATION.

5.4 THE T-AKE CLASS ELECTRICAL COLOR CODING DOES NOT FOLLOW CONSISTENT COLOR SCHEME. THE SHIP IS KNOWN TO HAVE CURRENT CARRYING CONDUCTORS COLORED GREEN, BLUE, BLACK, AND WHITE. ASSUME ALL ELECTRICAL CABLES ARE ENERGIZED UNTIL TESTED AND PROVEN OTHERWISE. TEST ALL ELECTRICAL CABLES TO ENSURE THEY ARE DE-ENERGIZED PRIOR TO WORKING ON THE ITEM.

6.0 QUALITY ASSURANCE REQUIREMENTS: None additional

7.0 STATEMENT OF WORK REQUIRED

7.1 With the assistance of ship's force, tag-out all required systems and equipment. Drain and dispose of any liquid in accordance with all federal, state, and local regulations.

7.2 Notify MSCREP before starting any work.

7.3 Provide the services of an ABS Qualified Valve Testing Facility, to perform the repair, testing, and certification of the cargo refrigeration system safety valves.

7.4 Prior to removal, each safety valve shall have a temporary metal identification tag installed, showing valve size, pressure setting, space, and frame location. Temporary tags shall remain attached to the valves until reinstallation.

7.5 Temporarily remove insulation and lagging in way of each safety valve. Retain for reuse. Identify areas that are soiled and deemed unfit for reuse.

7.6 Temporarily remove safety valves identified in

Enclosure 2.2.1 from location and temporarily plug/blank openings to prevent system contamination. Remove temporary plug/blank at time of valve reinstallation.

7.6.1 Retain, bag and tag fasteners for reuse. Mark bagged hardware to each safety valve location.

7.6.2 Inspect for damaged fasteners. Any damaged fasteners shall be renewed. For estimated bidding purposes, assume ten percent (10%) of fasteners shall be renewed.

7.7 Rig and convey safety valves from ship to shop, including new GFM valves.

7.8 Perform a preliminary pressure test of all safety valves. Valves shall lift at the proper pressure and shall re-seat fully when pressure is reduced below test pressure.

7.8.1 Make minor adjustments where required. Submit a condition report identifying valves that do not pass testing and identify required repairs. Repair recommendations will be the subject of a change order as deemed necessary by the MSCREP.

7.8.2 Upon completion of approved repairs, retest the repaired safety valves.

7.9 Accomplish final pressure test of all safety valves. Valves shall lift at the proper pressure and shall re-seat fully when pressure is reduced below test pressure.

7.9.1 Test shall be witnessed by MSCREP and ABS Surveyor.

7.10 Upon satisfactory completion of final acceptance testing, convey all safety valves from shop to ship.

7.11 Remove all temporary plugs/blanks. Reinstall valves in original locations. Replace and renew all removed and disturbed gaskets. Reuse existing fasteners.

7.11.1 For all high-pressure valves, renew Viton O-rings prior to reinstallation.

7.12 After reinstallation, provide and install a permanent stainless-steel metal tag identifying system, test date, pressure setting, and facility name used to conduct the testing. Metal tags shall be secured to valves using stainless-steel metal wire.

7.13 Clear all system tags. Energize systems and conduct an operational leak test. Each valve shall be checked with Ship's Force in attendance. No leakage allowed.

7.14 Reports

7.14.1 When inspection, service and testing reveal any deficiency a condition report is to be submitted to the MSCREP with recommended repairs and parts required. Submit three (3) typewritten copies and one (1) electronic copy in Portable Document Format (PDF).

7.14.2 Submit an "as released" condition report. Submit three (3) typewritten copies and one (1) electronic copy in Portable Document Format (PDF). The report is to include and identify the:

a. Safety valve

b. System and pressure setting

c. Test date

d. Facility name used in testing and repair of valves

e. The report is also to include an electronic Excel Spread Sheet of all safety valves tested. Spread sheet is to contain the following info:

1. System description
2. Valve number/designator
3. Location
4. Set pressure
5. Manufacturer
6. Model
7. Serial number
8. Size

9. Inlet outlet size
10. Date last tested
11. Test facility name used

7.14.3 All reports and checklists are to be completed and signed by the person who carried out the inspection and maintenance work and countersigned by the Company's representative.

7.15 Painting/Lagging

7.15.1 Prepare, prime, paint and restore all new, soiled, and disturbed surfaces to match surrounding surfaces.

7.16 Manufacturer's Representative

7.16.1 Provide the services of OEM authorized field service technical representative and labor to accomplish all work and testing on the safety valves identified in Enclosure 2.2.1 ensuring compliance with the manufacturer's standards and performance specifications.

7.17 Preparation of Drawings: None additional.

8.0 GENERAL REQUIREMENTS: None additional.

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Enclosure 2.2.1 – List of Safety Valves

Valve Number	Valve Identification	Valve Location
SAV01	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 1	Discharge Line
SAV02	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 1	Condenser
SAV03	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 1	Discharge Line
SAV04	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 1	Condenser
SAV01	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 2	Discharge Line
SAV02	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 2	Condenser
SAV03	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 2	Discharge Line
SAV04	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 2	Condenser
SAV01	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 3	Discharge Line
SAV02	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 3	Condenser
SAV03	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 3	Discharge Line
SAV04	CARGO REFRIGERATION (CHILL) COMPRESSOR UNIT NO. 3	Condenser