

ACTIVATION SPECIFICATIONS

FOR T1-M-BT2 TANKER

M/V NODAWAY

PHASE V ACTIVATION

INDEX

PAGE	NO.	ITEM
4	100	GENERAL
4-6	105	GENERAL NOTES
7	109	DELIVERY OF SHIP
7	111	MOORING OF VESSEL
8-9	112	SHIPYARD MILESTONE SCHEDULE
9	116	LIVING AND WORK SPACES
9	120	OPEN ITEM
10-11	125	DOCK TRIALS AND SEA TRIALS
11	126	VESSEL DELIVERY
12	200	ENGINEERING
12	205	DIESEL ENGINES
13	215	STEERING GEAR
14-15	220	CENTRIFUGAL PUMPS - FRESH AND SALT WATER SERVICE
16	225	CARGO OIL PUMPS AND PIPING
17	230	FRESH, POTABLE, AND DRINKING WATER SYSTEMS
17	235	SALT WATER SYSTEMS
18	240	SANITARY, SOIL, AND DRAIN PIPING
18	245	MSD ACTIVATION
18	250	OPEN ITEM
18	255	AIR COMPRESSORS AND PIPING SYSTEM
19	260	BOILER
19	263	WATERMAKERS
20	265	STEAM HEATING AND CONDENSATE PIPING SYSTEMS
20	270	LUBE OIL PURIFIERS
21	280	OIL AND WATER SEPARATOR
21	282	OILY BALLAST MONITOR
21	285	OPEN ITEM
21	290	SHIP'S REFRIGERATION AND AIR CONDITIONING
22	300	ELECTRICAL
22	301	ELECTRICAL EQUIPMENT AND MOTOR ACTIVATION
22	305	CATHODIC SYSTEM
22-23	310	DEHUMIDIFICATION SYSTEM AND FLOODING ALARMS
24	320	SHIP'S LIGHTING SYSTEMS
24	322	CARGO, DEBARKATION, SIGNAL, AND SEARCH LIGHTS
24	325	CARGO PUMP REMOTE SHUT-DOWN SWITCHES
24	330	INSULATION (MEGGER) READINGS
18	360	GALLEY EQUIPMENT
19	370	BATTERIES
19	380	SHIP'S RADIO EQUIPMENT
19	385	NAVIGATION EQUIPMENT

INDEX

<u>PAGE</u>	<u>NO.</u>	<u>ITEM</u>
4	100	GENERAL
4-6	105	GENERAL NOTES
7	109	DELIVERY OF SHIP
7	111	MOORING OF VESSEL
8-9	112	SHIPYARD MILESTONE SCHEDULE
9	116	LIVING AND WORK SPACES
9	120	OPEN ITEM
10-11	125	DOCK TRIALS AND SEA TRIALS
11	126	VESSEL DELIVERY
12	200	ENGINEERING
12	207	DIESEL ENGINES
13	215	STEERING GEAR
14-15	220	CENTRIFUGAL PUMPS - FRESH AND SALT WATER SERVICE
16	225	CARGO OIL PUMPS AND PIPING
17	230	FRESH, POTABLE, AND DRINKING WATER SYSTEMS
17	235	SALT WATER SYSTEMS
18	240	SANITARY, SOIL, AND DRAIN PIPING
18	245	MSD ACTIVATION
18	250	OPEN ITEM
18	255	AIR COMPRESSORS AND PIPING SYSTEM
19	260	BOILER
19	263	WATERMAKERS
20	265	STEAM HEATING AND CONDENSATE PIPING SYSTEMS
20	270	LUBE OIL PURIFIERS
21	280	OIL AND WATER SEPARATOR
21	282	OILY BALLAST MONITOR
21	285	OPEN ITEM
21	290	SHIP'S REFRIGERATION AND AIR CONDITIONING
22	300	ELECTRICAL
22	301	ELECTRICAL EQUIPMENT AND MOTOR ACTIVATION
22	305	CATHODIC SYSTEM
22-23	310	DEHUMIDIFICATION SYSTEM AND FLOODING ALARMS
24	320	SHIP'S LIGHTING SYSTEMS
24	322	CARGO, DEBARKATION, SIGNAL, AND SEARCH LIGHTS
24	325	CARGO PUMP REMOTE SHUT-DOWN SWITCHES
24	330	INSULATION (MEGGER) READINGS
18	360	GALLEY EQUIPMENT
19	370	BATTERIES
19	380	SHIP'S RADIO EQUIPMENT
19	385	NAVIGATION EQUIPMENT

INDEX, CONTINUED

<u>PAGE</u>	<u>NO.</u>	<u>ITEM</u>
27	400	HULL
27	402	HULL BLANKS
28	403	PROPELLER CLEANING
28	405	LIFEBOATS, DAVITS, AND WINCHES
29	408	RING LIFE BUOYS
29	410	LIFERAFTS
30	415	FIRE FIGHTING EQUIPMENT
31	433	WEATHER DECK SCUPPERS AND DRAINS
31	435	HOSE GEAR
31	445	WATERTIGHT AND WEATHER-TIGHT CLOSURES
32	447	VENTILATION TERMINALS
32	490	NAME BOARDS

100 GENERAL

ITEM 105 GENERAL NOTES

The Contractor shall prepare a detailed activation schedule which includes labor by crafts, services, equipment and material divided into 4-hour increments. The schedule shall include each item of these specifications.

During the activation the Contractor shall provide the following services:

- 1 Services:
 - a. Fire Protection: provide three (3) fire stations located at the bow, amidships, and stern with 7bar (100 psig) pressurized manifolds and enough hose fitted with all-purpose type nozzles to reach all weather deck and internal locations on the vessel.
 - b. Electric Power: 250 amps, 440 volts AC, 3 phase, 60 hertz.

CAUTION Proper phasing shall be insured immediately upon connection to prevent damage to the equipment.

2. Office Space: provide separate dockside office space for CMS and MARAD representatives. Each office to have a minimum of 50 square meters of floor space, be adequately lighted, heated and air-conditioned. Each office is to be furnished with a minimum of two desks and chairs, one file cabinet, one book shelf, two steel hanging lockers, one meeting/service table with four chairs; 100 - 120 VAC, 50 to 60 Htz electrical power is to be supplied from a minimum of four, two plug jacks with ground; one each phone for overseas direct dialing, one local phone for domestic and international calls; Western Style male and separate female toilets and washing facilities shall be available close to the designated offices.
3. Meals and Accommodations and Transportation: Provide Western style rooms and meals (breakfast, lunch, and dinner) per the following schedule:
 - a. MARAD and CMS Representatives, total six each single rooms with private baths, for total 12 nights with option to hold two or more rooms for a period of 180 days following activation's of any one or all vessels. These rooms shall be equipped with a telephone capable of international calls by direct dialing and credit cards, one each computer modem connection to each phone, 24 hour satellite TV reception with at least one English news and separate movie/entertainment channel, and a small service refrigerator.
 - b. Total six ship's officers, single rooms with private baths for a total of eight nights. The rooms to include telephone for local and international calls, and local channel TV entertainment.

105 GENERAL NOTES, continued

- c. Eight crew (2 persons per room), estimated six nights with shared bath facilities. Telephones to be coded for local calls only. A TV for local channel entertainment shall be provided in each room.
 - d. Hotel services shall include daily bed and linen changing, daily room and bath cleaning, days; and transportation between accommodation to/from vessel for meals, morning midday and evening if the walking distance exceeds 1 kilometer one way. Charges for laundry, meals, telephone, room refrigerator drinks and snacks, and other miscellaneous hotel services shall be billed directly to each occupant.
- 4.. Vessel Telephones: provide 24 hour telephones: one (1) phone for ship's office, and one (1) Contractor/local phone for ship's quarter-deck. The ship's office phone shall be provided with International direct dialing service; these phones shall be available within 24 hours of the Notice of Activation.
 5. Garbage and Debris Removal: The Contractor shall provide garbage bins or dumpsters onboard the vessel for collection and removal on a daily basis. Where port regulations apply, additional collection bins shall be provided as required for separation and/or recycling. Written notice of the requirements, in English, shall be made available to the CMS Representative and ship's master at the beginning of each activation.
 6. Firewatch: required for all burning, welding, and heating operations. Firewatch shall be equipped with suitable Contractor furnished fire extinguisher and shall be aware of the location of the nearest fire hose. Access to the Contractor UHF radio system is highly desirable.
 7. Cleaning: the Contractor shall remove on a daily basis all dirt and debris generated as a result of work specified. Any and all damage to ship's paint, tile, structure, fixtures, equipment, and machinery occurring in Contractor's yard shall be restored per ship's painting specifications at the Contractor's expense.
 8. Crane Service: the Contractor shall provide crane and rigging service for handling stores and ship's equipage. The service shall consist of crane and operator and a 2-man rigging crew. A total of 40 hours crane and rigging service shall be used for estimating purposes (40 hours crane, 40 hours operator, 80 hours rigging). Hours and cost will be adjusted upward or downward, as appropriate, at end of the activation.
 9. Labor and Materials: the Contractor shall provide labor, materials and services to accomplish all work in these items unless otherwise specified. Hourly labor rates by category and material costs shall be as documented in the Contractor's contract with Crowley Marine Services, Inc.

105 GENERAL NOTES, continued

10. Government Furnished Material: the Contractor shall take delivery of all Government Furnished Material (GFM), whether stored on board ship or delivered to the Contractor's covered storage yard or warehouse, and shall store, preserve, and protect it as required. The Contractor shall provide, if required by the CMS Representative, a secure storage area for those items removed from the ship during activation, and operation to include hull and topside blanks; cathodic protection system; D/H system hoses and fittings; stack covers; and flooding alarm equipment.
11. Workmanship: all materials and workmanship shall be in accordance with good marine practice, regulatory requirements, and this specification.
12. Testing: the Contractor shall be responsible for pre-testing all work and for timely notification of the CMS Representative and cognizant ship's officer of all events that will require on-site inspection. Successful tests only will be accepted. Any pre-testing required shall be at Contractor's expense.
- 13.. Schedule: Contractor shall work ship on an around-the-clock seven-days-a-week basis. A tentative milestone schedule is attached. Note: the vessel must depart on 24-hour sea trials before the end of the ninth day, in adequate time for local area delivery to the Military Sealift Command (MSC) before the end of the tenth day. All activation work shall be completed by the time the ship departs for sea trials.
14. Deck Protection: Provide suitable temporary deck protection on interior passageways, master's office, chief engineer's office, crew mess, officers mess, and other high traffic areas as designated by the CMS Representative. A minimum of 7mil thick covering, securely taped to the deck shall be used. The covering shall be removed from the vessel prior to departing on sea trials.
15. Gas Free Certification: One the first day of activation a certified chemist shall inspect all ships cargo, void, tank, bilge, storerooms to ascertain that they are, or are not, safe for entry, including burning and welding. Results shall be posted at the ship's gangway, delivered to the MarAd and CMS Representatives, the vessel's master and chief engineer. Daily and frequent re-inspections shall be made of all suspect, sensitive and confined work areas of the vessel. Daily reports are to be distributed per the above. Please note the specific referrals to gas free certification in the following specifications.

ITEM 109 DELIVERY OF SHIP

Unless specifically requested by the Contractor, and agreed to by the MarAd and/or CMS Representatives, the vessel shall be activated at its assigned lay-berth.

1. In the event that it is agreed to move the vessel, the Contractor shall provide the following services:
 - a. Marine Safety Agency and local Harbor Master clearances;
 - b. Pilots, tugs, line handlers and riding crew;
 - c. Towing tugs, escort tugs, locally required lights, signals and other regulatory requirements.
 - d. Electricians and engineers to supervise shore connections and ships' generator utilization.

CAUTION Proper phasing shall be insured immediately upon connection to prevent damage to the equipment.

ITEM 111: MOORING OF VESSEL

1. At Minimum, the vessel shall have available three each braided or three-strand, minimum 8 inch circumference, synthetic mooring lines forward and aft, as necessary for safe and secure mooring. Additionally, for the purpose of nesting the tankers, two "Yokohama" type fenders are available on each vessel. The mooring berth shall provide adequate clearance under the keel for all stages of tide. Additional services and facilities shall include:
 - a. Salt or fresh water fire main under continuous pressure for emergency service at a minimum of 100 psi.
 - b. Commercial fresh or potable water service line.
 - c. Adequate lighting for night boarding and disembarking.
 - d. Adequate free and clear vehicle access to the vessel.
 - e. Telephone service line Per Item 105.4 above.
 - f. Electric power per Item 105.1 above.

ITEM 112 CONTRACTOR MILESTONE SCHEDULE

The following information is provided as a guideline only. The Contractor is to develop and follow a detailed schedule without regard for the arrival of CMS and MarAd personnel. The schedule shall be developed and submitted to CMS Representative within 15 days of contract award.

- Day 1: Ship at layberth. The Contractor provides temporary electrical power, fire and flooding protection, and necessary personnel for inspection and activation of machinery and equipment. Start equipment close-ups, D/H system, cathodic protection system and hull blank removals. Do initial gas free certification and commence daily re-inspections.
- Day 2: Remove D/H equipment and cathodic protection equipment. Continue removals, close ups, tests, and repairs. CMS Representative and staff, Master, Chief Officer, Chief Engineer, First Engineer, Bosun arrive at Contractor.
- Day 3: Clean quarters. Activate and test galley equipment. Start reefer machinery and commence reefer box cool down. Reassemble fixed CO₂ systems, manually test all remote actuators before connecting cylinder hoses. Lay-out and connect fire hoses for pressure testing if required. Ship's crew commences safety and fire fighting equipment inspection and deployment.
- Day 4: Activate potable water, sanitary and heating, ventilation and air conditioning equipment. Remove smoke stack covers and light off ship service generators. Start preliminary storing for Galley and Sanitary. Do life boat davit weight test if required. Test steering gear and controls. CMS contracted Radio and radar/electronic technicians on board. Activate all ship's communication and navigation electronics. Ship's crew assists USCG with safety and fire fighting equipment tests, inspections and inventory.
- Day 5: Complete work on cargo systems, test operate all pumps, valves and vents. Remove flooding alarms and secure onboard per ship's Chief Officer or the CMS Representative. Ship's crew and concerned inspectors (CMS, ABS, USCG) inspect cargo tanks preparatory to close up. Ship's crew moves onboard; loads sea trial ballast, receives provision order and stows onboard; continues USCG inspection of safety and fire fighting equipment; stows and secures lifeboats for sea.
- Day 6: Complete test of auxiliary machinery systems on shore power. Run main engine and test all pneumatic control systems for air and auxiliary machinery. Test emergency generator, boilers and evaporators. Accomplish preliminary cargo system tests. Purify lube and fuel oil prior to light off for dock and sea trials. Ship's crew continues USCG and ABS inspection support, vessel systems indoctrination. The crew attends a first aid and safety meeting. Receive fuel, lube, and balance of stores, set crew's gangway security watches.

M/V NODAWAY - PHASE V ACTIVATION

- Day 7: Remaining crew moves aboard and ship starts feeding. Test anchor windlass, deck winches, capstans preliminary to sea trial. Complete inspecting and storing lifeboats and inflatable rafts. Test boat davits and winches. Check out navigational equipment and lights. Test laundry services.
- Day 8: Dock trials. Final cleanup, securing of loose gear, and storing of ship. Prepare for sea. Complete outstanding ABS and USCG items other than sea trial items. All crew aboard and signed on. Set sailing board. Complete final adjustments and alignments all systems. Test navigational systems. Set sea watches. Test steering engine, evaporators, and vital auxiliary systems. Depart for 24-hour sea trials. The Contractor provides a pilot, two machinery engineers, two electrical engineers, one hull engineer during the sea trial. Accommodations, prepared meals and messroom services will be provided by the ship's crew.
- Day 9 & 10: Main engines will be run at full power for 16 hours to demonstrate satisfactory operation. Prove operational effectiveness of cargo pumps, fire pumps, fire main, alarms, evaporators, boiler, bilge and ballast pumps, emergency generator, etc. Test steering system by: turning circle maneuvers; astern and ahead steering; emergency steering; "Z" maneuvering test, and emergency ahead to astern tests. Speed runs and full power tests should be accomplished at normal operating draft. This can be accomplished by filling selected cargo tanks with fresh water and discharging the water at sea to prove the pumps and cargo system. Removal of water and drying of tanks will be required prior to loading cargo. Complete sea trials and return to port to complete required repairs, services and outfitting as required. Deliver the vessel to the Military Sealift Command for orders on completion of the above.

ITEM 116 LIVING AND WORK SPACES

1. Prior to crew moving aboard ship thoroughly clean all spaces throughout ship. Wash all surfaces using Contractor supplied cleaner and disinfectant. Remove debris, sweep out and thoroughly clean all staterooms, refrigerators, lockers, closets, cabinets, drawers, medicine cabinets heads, sinks and toilets, carpets in Master's and Chief Engineer's staterooms, washrooms, laundry's, recreation rooms, accommodation block passageways, pilot house, chart room, gyro room, radio room, offices, mess rooms, lounges, etc.

ITEM 120 OPEN ITEM

ITEM 125 DOCK TRIALS AND SEA TRIALS

125.1 Dock Trials

a. Dock trials shall be accomplished on or before the eighth day of availability. CMS will provide clean fuel oil, clean lube oil, filters, etc., necessary for the operation of main engine propulsion train and vital support systems. Contractor provides line handlers and necessary additional mooring lines to properly secure ship during trials. In conjunction with ship's engineers Contractor shall operate main engines at low speed in both forward and reverse modes. The main engine, auxiliary engines, evaporator and boiler shall be operated for four (4) continuous hours to assure that all controls operate satisfactorily.

b. CMS will supply fuel oil, lube and other oils for the trials. Fuel not consumed shall be left on board. Contractor shall supply potable water and shore power as required.

125.2 Sea Trials

a. The Contractor shall provide a pilot, two machinery engineers, two electrical engineers, one hull engineer during the 24-hour sea trial. Bunks with linen will be provided onboard. Prepared meals and messroom services will be provided by the ship's crew. The Contractor provided technicians shall make all adjustments necessary to prove all machinery and auxiliary systems in satisfactory operating condition.

b. During the sea trial the vessel's master assumes command on the behalf of the US Department of Transportation, Maritime Administration. The Contractor's pilot and engineers serve in the roll of advisors and technical consultants.

c. Sea trials shall be accomplished in accordance with the US Maritime Administration's published guide "Operational Performance - Sea Trials" appended to this item. Included in the sea trials are:

- Demonstration of Automation in All Modes
- 16-Hour Full Speed Ahead Endurance Test
- 5-Minute Astern Endurance Test
- Ahead Steering Test
- Quick Reversal - Ahead to Astern
- Quick Reversal - Astern to Ahead
- Anchor Windlass Test
- Distilling Plant Test
- Auxiliary Systems Test
- Navigation Equipment Test
- Communication Equipment Test
- Mooring Equipment Test
- Cargo Handling Equipment Test

d. Contractor shall supply marine safety and local harbor master clearance, pilots, and tugs.

125.2 Sea Trials continued

e. CMS will provide vessels' master, officers and crew, fuel and lube oils, charts and navigation equipment for the sea trials.

ITEM 126 VESSEL DELIVERY

1. Delivery

During the vessel's activation, dock and sea trials a representative from the Military Sealift Command Pacific (MSCPAC) office in Oakland, California, or a representative from the Military Sealift Command Far East (MSCFE) office in Yokohama will be in attendance to witness each phase of the operation. With particular reference to the Sea Trial Check-Off List, the representative will approve the operation and performance of the vessel, the crew, specific and non-specific machinery items. On completion of the trial, depending on the vessel's operational assignment and the nature of its repair status, the ship will return to the Contractor to effect equipment repairs and other outstanding items noted. When satisfied that the vessel is in all respects ready for its assignment, the MSC or MSCFE representative will accept the vessel and dispatch it for voyage orders.

200 ENGINEERING

ITEM 205: DIESEL ENGINES - MAIN AND GENERATOR & EMERGENCY GENERATOR

DATA: Main Propulsion Engines: One (1).
Mfr.: Nordberg, 6 cyl., 2-cycle, 1400 hp., 18" x 25" bore and stroke

Generator Diesel Engines: Two (2)
Mfr.: Caterpillar Model: 3406B T; No. of cyl.: 6; 290 KW

Emergency Diesel Generator Engine: One (1)
Mfr.: Detroit Diesel Model: 6-71; No. of cyl.: 6, RPM: 1800, 150kW

TASK: Perform the following inspections, tests and maintenance to each engine:

- a. Check for proper lube oil level in the sump. Lubricate per the manufacturer's instruction.
- b. Check for proper coolant level. Using a hydrometer, check the concentration of antifreeze. A proper proportion of antifreeze should be maintained for the climate at the lay-up site.
- c. Check for adequate fuel supply. If necessary, refill day tank from settler using purifier.
- d. Remove and stow onboard per Chief Engineer diesel exhaust blanks.
- e. Verify that the battery and air starting systems are charged and ready for use.
- f. Test sound powered telephones and ship's telegraph before starting engines. Insure that bridge watch is maintained during the entire main engine operation
- g. Start up the diesels, idle until the cooling water comes up to temperature and operate the generator under load for at least 1/2 hour. (Caution: Do not parallel generators with emergency generators or shore power connections.)
- h. Check the proper operation of all gauges, sensors, and controls.

ITEM 215: STEERING GEAR

1. Remove and stow as directed the bolted steel blocks and securing wires from between ram cylinders and cross heads. Remove preservative from machined surfaces.
2. Pressure lubricate steering engine and controls in accordance with manufacturer's lubrication chart.
3. Check sumps and storage tanks and replenish to full capacity of hydraulic oil as necessary.
4. Check operation of failure alarms.
5. Prepare system and conduct an operational test during dock trial
6. Clean deck in way of any oil.

ITEM 220: CENTRIFUGAL PUMPS-FRESH AND SALT WATER SERVICE

- DATA:
1. Vacuum Pump: One each
Mfr: Nash Engineering
Mfr I.D.: BLA-270, Size 3/4" x 5/16"
 2. Evaporator Pumps
 - a. Feedwater Heater Drain: One each
Mfr: Deming Company
Type: Fig. 2895, Size 1, Duplex Double Acting
 - b. Brine Pump: One each
Mfr: Aqua-Chem Inc.
Mfr I.D.: 5SC, Size 2 x 2.5
Capacity: 386 GPM
 - c. Distillate Pump: One each
Mfr: Aqua-Chem Inc.
Mfr I.D.: 1SC, Size 1 x 1.25
Capacity: 5 GPM
 - d. Sea Water Feed and Vacuum Pump: One each
Mfr: Aqua-Chem Inc.
Mfr I.D.: 5SC, Size 2 x 2.5
Capacity: 184 GPM
 - e. 1ST Effect Condensate:
Mfr: Aurora Pump
Mfr I.D.: 4R - Single Stage
 3. Fire and General Service Pumps: Two each
Mfr: Aurora Pump
Mfr I.D.: Type 3 x 4 AD
Capacity: 450 GPM
 4. Fresh Water Circulating Pump: One each
Mfr: Allis-Chalmers Co.
Mfr I.D.: Type SHV, Size 4 x 4
Capacity: 350 GPM
 5. Fresh Water Circulating Stand By Pump: One each
Mfr: Pacific Pumps Inc.
Mfr I.D.: Type 4" VKMB, Single Stage, Double Suction
Capacity: 500 GPM
 6. Fresh Water and Salt Water Circulating to Ship's Service Diesel Engines: 4 each
Mfr: Weinman Pump Company
Mfr I.D.: Type KB, Single Stage, Single Suction Attached to Engines
Capacity: 185 GPM

ITEM 220: CENTRIFUGAL PUMPS-FRESH AND SALT WATER SERVICE

7. Fresh Water Drinking and Wash Water: Two each
Mfr: Fairbanks Morse and Company
Mfr I.D.: Size 1 1/4", Westco, Series "E", No. 146 Single
Suction, Single Stage Turbine
Capacity: 10 GPM
 8. Fresh Water Make Up Circulating: One each
Mfr: Fairbanks Morse and Company
Mfr I.D.: Size 1 1/4", Westco, Type SR-4R-13, Single
Suction, Single Stage Turbine
Capacity: 15 GPM
 9. Salt Water Circulation: One each
Mfr: Allis-Chalmers Company
Mfr I.D.: Type SH-V, Size 4" x 4"
Capacity: 350 GPM
 10. Salt Water Circulating Standby: One each
Mfr: Morris Machine Works
Mfr I.D.: Type DS 6-5-6 SAV
Capacity: 500 GPM
 11. Sanitary Pump: One each
Mfr: Frederick Iron and Steel Inc.
Mfr I.D.: Type DSV-"MB", Size 2 1/2"
Capacity: 250 GPM
 12. Bilge and Ballast: Two each
Mfr: Lombard Governor Corp.
Mfr I.D. Type 2 x 3 CMB
Capacity: 150 GPM
Location: One in forward pump room & one in engine room.
1. Inspect all centrifugal pumps located in engine room, fore and aft pump rooms, and midship space. Insure that all components are closed for service, and that exposed shafts are clear and free for rotation. Rotate shafts by hand and lubricate as necessary. Test operate and prove ready for service, tighten packing as necessary. A list of pumps follows.
 2. Rotate shafts by hand. Lubricate as necessary. Test operate and prove ready for service. Tighten packing as necessary. Pressure test sanitary and potable water with air to insure complete closure to prevent leakage in crew's spaces.

ITEM 225 CARGO OIL PUMPS AND PIPING

1. Activate the cargo oil/ballast system consisting three Waterous main pumps, two eductor systems and associated piping and valves. Inspect all strainer baskets, remove and dispose of all debris. Re-install strainer baskets and close strainer covers using clean gaskets, new nuts and bolts as required. Replace pump and strainer drain plugs, close strainer drain valves. Test all pump bleeder valves and pipes to insure they are clear and operate correctly.
2. Rotate pumps by hand to insure rotor freedom. Lubricate all fittings with high pressure grease-guns. Inspect through-bulkhead shaft drive explosive seal to insure it seals properly and the shaft rotates freely. Megger test all pump motors.
3. Conduct a valve-to-valve 150 psi hydro-test of all cargo/ballast piping to insure system integrity and proper individual valve sealant, freedom of manual operation without utilization of valve wrenches or spanners. Provide the CMS Representative with a written report on system test findings and required repairs immediately following the hydro-test.
4. Check all pressure gauges to insure operation and that all tubing is clear.
5. Attend system during activation and sea trial ballasting operations by ship's crew. Set each stripping ballast pump pressure relief valve to 125 psi using ballast water. Test operate the system at the direction of the CMS Representative.

ITEM 230 FRESH, POTABLE AND DRINKING WATER SYSTEMS

1. Reinstall any piping sections, valves, valve bonnets, and drain plugs removed during deactivation. Pressure test all systems to 50 psi. Check all faucets to insure operation and tight seal. Flush all lines and pumps with potable water treated with one US Gallon of Contractor-furnished chlorine bleach per five barrels of potable water (super-chlorinated water from water tank cleaning item may be used), then flush with fresh potable water. Pipe flushing shall be done in conjunction with tank flushing per the following.
2. Remove expanded metal screens from man hole openings of port and starboard potable water tanks located at 1-29-1 and 1-29-2 in the midship space. Retain screens for later use. Remove the welded 3-inch steel blanks from vents. Clean tanks as necessary. Fill potable water tanks with chlorine treated potable water per the above. Flush tanks and pipe lines at least one time, more if required. Fill tanks with fresh potable water to accommodate flushing the tanks and pipe lines. Refill tanks to 95% full with fresh potable water. Estimate a total of 720 barrels of potable water will be required for the full flushing and refill cycle.
3. After completion of super-chlorinating and flushing, take a sample of water from the faucet at the galley sink and send it to a laboratory for certification that the ship's water is free of fecal coliform bacteria, and that it is potable and safe to drink.

ITEM 235 SALTWATER SYSTEMS

1. Reinstall any piping, valves, valve bonnets, strainers, drain plugs, etc., removed to facilitate drying and circulation of D/H air, or to permit operation of the engines during Phase IV maintenance. Stow temporary cooling water hoses, piping as directed. Piping services involved are fire mains, sanitary systems, bilge and ballast system, and diesel engine lube oil and jacket-water coolers. Thoroughly flush piping to remove rust and scale from systems. Clean strainers removing all scale and sludge.
2. The ship's fire mains, pumps and valves shall be pressure tested to a minimum of 100 psi to insure integrity. Exceptions are to be immediately documented and brought to the attention of the CMS Representative for corrective action approvals.
3. After pumps are activated in Item 220 of these specs, conduct operational tests. Individual systems shall be pressure tested to the shut-off head of each respective pump. Exceptions are to be immediately documented and brought to the attention of the CMS Representative for corrective action approvals.

NOTE: This is a USCG item. USCG must witness tests of pressures.

M/V NODAWAY - PHASE V ACTIVATION

ITEM 240 SANITARY, SOIL AND DRAIN PIPING

1. Reinstall any piping removals, and reassemble valve bonnets, traps, strainers, drain plugs, and manifold bonnets which were removed/disassembled to facilitate drying and air circulation
2. Charge sanitary system with water and check all systems for leaks.
3. Flush piping until clear rust-free water appears from drain valves at each toilet, DO NOT USE TOILET FLUSH VALVES TO FLUSH PIPING. Reassemble flush valves and prove proper operation following system flushing.
4. Adjust and test all flush valves. Replace any defective flush valves with owner's supplied spares.
5. Insure all drain lines are clear.

ITEM 245 MSD ACTIVATION

1. Activate the MSD system per the manufacturer's instructions.
2. Rotate pumps by hand. Conduct operational test of system PRIOR TO USE OF TOILETS.
3. Test level controls on collection tank.

ITEM 250 OPEN ITEM

ITEM 255 AIR COMPRESSORS AND PIPING SYSTEMS

1. Check oil levels before operating.
2. Test operate compressors and check systems for leaks. Check relief valves for proper settings for USCG and ABS. Pressurize starting air tanks to prepare for diesel engine operation.

NOTE: This is a USCG item. USCG must witness tests of relief valve settings.

ITEM 260 BOILER

Mfr.: VA Power
Model:
Type: 35 psi Automatic-Oil Fired

1. Accomplish the following to the boiler:
 - a. Pressure check mountings, set safety valves, and hydro test boiler to be witnessed by USCG & ABS.
 - b. Reassemble components.
 - c. Furnish enough boiler feed water for continued operation until evaporator is operational.
 - d. Conduct complete operational test to the satisfaction of CMS, USCG, and ABS.

NOTE: Proper boiler water treatment is crucial to the longevity of the steam coil! Inadequate or incorrect treatment will quickly result in a burned up coil.

ITEM 263: WATERMAKER

1. Close up any open piping on the two (2) reverse osmosis watermakers. Line up water systems. Activate and test operate per the manufacturer's instructions.
2. Prove operation of controls and salinity indicator/dump.

ITEM 265: STEAM HEATING AND CONDENSATE PIPING SYSTEMS

1. Close up systems by reinstalling any removed piping, valves, traps, condensers, man hole covers, and inspection plates. Do Not Install access paneling in the quarters area until after systems are tested satisfactorily.
2. Air test the entire steam heating and condensate return systems to 2.5bar (37 psig) to the satisfaction of the CMS Representative.
3. A list of re-heaters, pre-heaters, convection heaters, galley steam equipment, engine room equipment, and miscellaneous tanks and heat exchangers follows.

<u>Heater Number</u>	<u>Location</u>
02-44-1	Passage, 02-44-1
02-45-1	Passage, 02-45-1
02-49-1	Fan Rm., 02-48-1
02-50-1	Fan Rm., 02-48-1
02-51-1	Fan Rm., 02-48-1
02-51-2	Emer. D/G Rm., 02-45-2
02-52-1	Fan Rm., 02-48-1
02-57-1	Fan Plenum, 02-54-1

<u>Radiator</u>	<u>Location</u>
02-30-1	Wheel House, 02-30-0
02-30-2	Wheel House, 02-30-0
01-67-1	Hospital T/S, 01-67-2

<u>Unit Heater</u>	<u>Location</u>
1-79-1	Steering Eng. R., 1-79-0
L.O. Purifier Heater	Eng. Rm.
Heating Sys. Drain Cooler	Eng. Rm.
Boiler Feed Tank	Eng. Rm.
Heating Sys. Drain Cooler	Eng. Rm.

ITEM 270: LUBE OIL PURIFIERS

1. Open up to insure disks are clean, and proper number are installed.
2. Rotate bowl unit to insure free rotation of bowl and motor.
3. Test unit for proper operation.

ITEM 280 OIL AND WATER SEPARATOR

1. Reinstall removed sections of piping and drain plugs in the oily water separator system. Install new cartridge. Close up.
2. Activate the bilge pump overboard line monitor and control system. Conduct a simulated test of the probe. Reassemble unit.
3. Reinstall Jabsco pump impellers, rotate by hand and lubricate if required.
4. Activate system and conduct operational test during dock trial.

NOTE: This is a USCG Inspection item.

ITEM 282 OILY BALLAST MONITOR

Activate oily ballast monitor system.

1. Reassemble any sample lines opened up for lay up.
2. Prove system is operational.

ITEM 285: OPEN ITEM

ITEM 290: SHIP'S REFRIGERATION AND AIR CONDITIONING SYSTEMS

1. Reinstall all removed piping sections, valves, etc., which were removed for D/H air circulation. Lube oil level will have been left above the top of the crankshaft seals per the deactivation specifications. Drain lube oil from the compressor sumps to lower the oil to the proper operating levels. Check systems for refrigerant charge and recharge as needed with Contractor furnished refrigerant.
2. Remove blocks from under refrigeration box doors. Close doors. and chalk test for proper fit. Test safety releases.
3. Activate all systems. Bring box temperatures down to proper temperature range and prepare for loading. Check refrigerator efficiency and ability to freeze water in freeze section of unit.

300 ELECTRICAL

ITEM 301: ELECTRICAL EQUIPMENT AND MOTOR ACTIVATION

1. Remove paper from commutators of motors and reinstall brushes and brush rigging. Remove sealing compound from weather deck motors. A list of equipment and motors covered in this item is available as Item 330, Maintenance Procedures, Phase IV.

ITEM 305 CATHODIC SYSTEM

1. Remove all electrical cable leads to and including anodes of the cathodic protection system. Thoroughly clean anodes, anode protective covers, wires and rope of all sea growth. Tag each item for identification to facilitate reinstallation at a later date. Stow onboard per chief officer or CMS Representative's instruction. Remove all non-explosion proof wiring in midship space leaving the master unit in place for future operation.
2. Remove all overboard anode hanging brackets, tag each bracket for future installation and store onboard per chief officer or CMS Representative. Restore all disturbed coatings with Owner's supplied paint per paint specifications.

ITEM 310 DEHUMIDIFICATION SYSTEM AND FLOODING ALARMS

1. Remove all components of the dehumidification system (with the exception of dehumidification machinery) and the flooding alarm system. Tag each piece with identification and location to facilitate later reinstallation. Coordinate storage aboard with the chief officer or CMS Representative. Restore all disturbed coatings with Owner's supplied paint per paint specifications.
 - a. Four D/H Portable Machines located in forepeak space and bridge deck
 - b. Grilled Horn, 4-inch diameter, Edward Model 876-NS.
 - c. Automatic Humidistat, 4 each, Honeywell H-46E1013.
 - d. Thermostat, 160°-260°F, Honeywell T7-675A1532.
 - e. Circuit Breaker, 450 VAC, 3 pole 50 amp.
 - f. Transformer, 3 KVA, 480 VAC primary, 120 VAC secondary, 3 each
 - g. Junction Box, 3 terminal, 6 wire, 600 V.
 - h. Circuit Breaker, 440 VAC, 25 amp.
 - i. Power Distribution Panel, 120 VAC, 4 Circuits.
 - j. Light Fixture, Watertight with Clear Lens.
 - k. Light Fixture, Watertight with Red Lens.
 - l. Siren, Nunn-Royal A-120 V.
 - m. Mounting Brackets for Light Fixtures, 2 each.
 - n. Toggle Switches for Indicator Panel, 5 each.
 - o. Indicator Light - Red, 5 each.
 - p. Float Switches, Grainger No. 1P504, 14 each.
 - q. Humidity Indicator, Air Guide 605, 4 each.
 - r. Miscellaneous Electrical Cable.

ITEM 310 DEHUMIDIFICATION SYSTEM AND FLOODING ALARMS continued

- s. Circuit Breaker, 15 amp, 450 VAC, 2 each.
- t. Transformer, 5 KVA, 440 VAC Primary, 120 VAC secondary, Single Phase.
- u. Miscellaneous Label Plates.

1. Remove all flexible aluminum distribution ducting, and store onboard per Chief Officer or CMS Representative.
2. Reinstall removed sections of ship's ducting in Radio Officer's SR Shower, Fan Room 02-34-2, Gyro Room - Radio Room bulkhead section and bell mouth in Radio Room. Reinstall removed bulkhead mounted lighting fixtures.
2. Restore all ventilation and piping systems to original by reinstallation of removed ducting, piping, valves, strainers, drain plugs, valve bonnets, etc. Install flush inserts welded both sides in way of door and bulkhead penetrations. Restore all disturbed coatings with Owner's supplied paint per paint specifications.
3. Reactivate doors and hatches throughout ship, lubricate hinges, dogs, and latches to insure freedom of operation. Inspect door and hatch gaskets to insure water-tight adequacy. List all exceptions and present to the CMS Representative for repair and/or replacement.
4. Remove expanded metal manhole covers from fore and after peak tanks, and port and starboard chain lockers. Reinstall all manhole covers throughout the vessel. List defective gaskets, bolts, nuts and studs and present to the CMS Representative for repair and/or replacement. On completion of closing all manholes the Chief Officer or CMS Representative shall inspect and approve the closures. Tag and store removed expanded metal covers per the chief officer or CMS Representative for later utilization. Manholes are located as follows:

<u>Each</u>	<u>Compartment</u>	<u>Each</u>	<u>Compartment</u>
1	1-B-0	1	2-7-0
1	4-10-1	1	4-10-2
1	3-12-1	1	4-22-0
1	1-24-1	1	1-24-2
1	1-30-1	1	3-12-2
1	1-30-0	1	1-30-2
1	1-33-1	1	1-33-2
1	1-42-0	1	2-83-0
1	1-S-0		

ITEM 320 SHIP'S LIGHTING SYSTEMS

1. Install lights, energize circuits, and test all the circuits including running lights, debarkation lights, range lights, gangway lights, flood lights, search lights, mast lights, signal lights, stern lights, deck cargo lights, main and emergency lighting.
2. Open all fore and aft mast light fixtures. Inspect and service as required. Replace defective bulbs and sockets. Close fixtures, provide new gaskets if required. Demonstrate operation of all lights to chief officer or CMS Representative on completion.

ITEM 322 CARGO, DEBARKATION, SIGNAL, AND SEARCH LIGHTS

1. Using new bolts, nuts and lock-washer where applies, install the following weather deck lights. Restore electrical connections. Demonstrate light operation to CMS Representative on completion of installation. Restore all disturbed coatings, prime and coat new bolts and fittings per the paint specifications with Owners supplied paint. Each light is tagged with its location:
 - a. Two 18-inch searchlights
 - b. One signal light
 - c. Eight cargo and debarkation lights

ITEM 325 CARGO PUMP REMOTE SHUT-DOWN SWITCHES

1. On completion of ITEM 225 (Cargo Oil/Ballast pumps and piping), and on completion cargo, stripping and ballast pump closure and testing, test all pump remote shut-down switches located on the aft bulkhead of the forward house on the main deck.

ITEM 330 INSULATION (MEGGER) READINGS

1. Obtain and record 500 volt megger readings of every power, lighting, and intercommunication circuits throughout ship if more than 3 months since last test. Compare with readings taken during deactivation and during retention period.
2. Provide a written report of all readings to the CMS Representative.

ITEM 360 GALLEY EQUIPMENT

1. Activate the following equipment located in the Ship's galley:
 - a. General Electric Oven - Model CN63
 - b. Deep fat fryer - Lang Model LG 36M-1
 - c. Marine Range - GE Model MR144
2. Test operate for a minimum of 60 minutes and check all operating characteristics, such as temperatures, amps, voltage, etc., against manufacturer's instruction books.
3. In addition, service, test, and activate the domestic refrigerators and ice makers located in ship's galley, officer and crew messes, lounges and pantries. Check out refrigerators in officer and crew Staterooms for proper operation.

ITEM 370 BATTERIES

Install, connect, and service in place batteries, or those procured in various battery lockers and racks per the following:

- a. General Alarm and Internal Communications: Eight each, 6 volt, 100 amp. hrs., 02-104-2.
- b. Emergency Radio: Two each, 6 volt, 500 AMP. HRS., 02-104-2.
- c. Data Logger: 12 volt, 4 SAW, Gel-Cell located inside Data Logger in Aux. Machinery Space.
- d. Fire Detection System: Five each, 6 volt, 8 AMP. HRS., Power Sonic Model.
- e. Emergency Diesel Starting: 2 6V 8D

Demonstrate battery charging systems are operational after batteries are installed.

ITEM 380 SHIP'S RADIO EQUIPMENT

1. Furnish a qualified marine technical service representative to activate the ship's radio equipment to include: HF, MF, SSB, RDF, COMSAT, SITOR, EMERGENCY and lifeboat radios. Test auto-alarms, antenna, weather fax and associated equipment. Test VHF and ship-to-ship communications equipment. . Demonstrate operation of all systems to the ship's master and CMS Representative.
2. The technician shall also attend the ship's maneuvers and the commencement of sea trials to provide a deviation table for the RDF. The work should be accomplished at the same time as magnetic compass deviation is established during initial sea trials.
3. Conduct an inspection of equipment including the capability to transmit and receive. The technician shall provide a letter confirming operation of all communications equipment and demonstrate operation of all systems to the ship's master and CMS Representative.

Note: The vessel's Safety Radiotelegraphy Certificate is issued annually by ABS. The ABS inspector must attend a demonstration of the above equipment for certification purposes.

ITEM 385 NAVIGATION EQUIPMENT

1. Reinstall magnetic compasses (stored in pilot house) on the flying bridge and connect electrical lighting circuits.
2. Provide services of a qualified compass adjuster to service the master and steering magnetic compasses and to calibrate (adjust compensating magnets) and provide a deviation chart for each compass at the beginning of sea trials. This work should be accomplished during the ship maneuvers needed to accommodate calibration of the ship's radio direction finder.
3. Provide services of a marine gyro compass service agent to service entire gyro system including MG set, relays, repeaters, course recorder, and auto pilot. . Demonstrate operation of all systems to the ship's master and CMS Representative.
4. Provide qualified service technicians to activate and service radar's, RDF, depth finder and Loran, Satellite Navigator, and Doppler Speed Log. . Demonstrate operation of all systems to the ship's master and CMS Representative.
3. Reinstall rudder angle indicator on 01 level aft.

NOTE: This is a USCG inspection item.

400 HULLITEM 402: HULL BLANKS

1. Furnish services of divers to remove all hull and sea chest blanks listed below. Retain all blanks, nuts, bolts and gaskets for storage onboard the vessel in area designated by the Chief Mate or CMS Representative. Prior to stowing on board, all items must be pressure washed to remove all sea growth. All plates, flanges and gaskets shall be marked with their location and arrows indicating up and aft for reinstallation. Bolts and nuts shall be wired to each plate and gaskets. The Contractor shall confirm the removal of each blank plate or flange and indicate missing or lost nuts and bolts, defective gaskets to CMS Representative for later replacement.

NOTE: All hull blanks are weld marked with the plate size and side.

Item	Location	Blank Size	P/S	Frame No.
1	Fwd. Pumproom Suction	20-1/2"	P	23
2	Aft Pumproom Seachest	28"	P	43
3	Aft Pumproom Seachest	28"	S	43
4	Main Engine High Suction	24"	S	47
5	Main Engine Low Suction	24"	S	48
6	No. 2 Diesel Generator & Sanitary Suction	24"	S	51
7	Main Engine Overboard	13-1/2"	S	54
8	No. 2 Diesel Generator Overboard	15"	P	55
9	Diesel Generator Service Pump Overboard	15"	P	61
10	Fire Pump Seachest	24"	P	61
11	No. 1 Diesel Generator Seachest	20"	S	61
12	Watermaker Suction	18"	S	61
13	Unused - Blanked Internally	18"	S	62
14	Former Evaporator Suction	16"	P	62
15	Diesel Generator Service Pump Suction	24"	P	65
16	Unused - Blanked Internally	16"	P	66
17	Bilge & Ballast Overboard	15"	P	67
18	Bilge & Ballast Suction	21"	P	68
19	Reduction Gear Cooling Overboard	20"	S	68
20	Oily Water Separator Overboard	13-1/2"	P	69
21	Reefer Cooler Overboard	13-1/2"	S	73

NOTE: This item is to be done as soon as possible after notification of activation.

ITEM 403 PROPELLER CLEANING

During the hull blank removal (Item 402) arrange to have the propeller, blades and hub, fully mechanically cleaned to remove all sea growth and related fouling. During the operation the divers are to inspect the propeller and exposed shaft to insure that they are clear of fish lines, rope and other obstructions. The divers shall submit pictures, covering the forward and aft profiles of the cleaned propeller on completion.

ITEM 405 LIFEBOATS, DAVITS, AND WINCHES

1. Lifeboats:

Remove lifeboat covers and wooden support frames from two 35-person motor lifeboats. Refill engines with lube oil from ship's stores if required. Fill fuel tank with marine gas oil (Diesel No. 2) as required. Test run engines. Reinstall rubber balls in automatic drain plug. Ship's crew will lay out and provisions and stores for boats for USCG inspection. After approval by USCG, ship's crew will stow all equipment in the respective lifeboat.

2. Gravity Davits:

Grease davit arm rollers, blocks, sheaves, wire, Rottmer releasing gear, and winches requiring lubrication. Lower boats a minimum of three times to rails edge to insure free operation prior to USCG inspection.

3. USCG Testing:

a. Provide 3,015 kg of Contractor supplied weights per boat. Position weights in boats to provide for equal distribution. Breast ship off the dock as required by slacking appropriate lines and utilizing one harbor tug. Test lifeboat davits by lowering both boats to water using winch brakes to control rate of drop.

b. When the lifeboat touches the water the ship's crew will board and start the lifeboat engine, release lifeboat from the boat falls, and operate boat in ahead and astern positions for 15 minutes. The crew will connect lifeboat to falls and disembark. Hoist both boats aboard, for securing in davit rests by the ship's crew. Turn over boat covers to ship's Chief Mate for stowage onboard.

NOTE: This is a USCG inspection item.

ITEM 408: RING LIFE BUOYS

1. The ship's crew will remove 12 life buoys from stowage and display for USCG inspection. The ring life buoys install in racks at following locations:

<u>Size</u>	<u>Location</u>	<u>Type</u>
30"	03-43-1	Unlighted with line
30"	03-43-2	Unlighted with line
30"	02-32-1	Lighted and smoke
30"	02-32-2	Lighted and smoke
30"	01-24-1	Unlighted with line
30"	01-24-2	Unlighted with line
30"	01-33-1	Lighted no line
30"	01-33-2	Lighted no line
30"	01-40-1	Unlighted with line
30"	01-40-2	Lighted with line
30"	01-70-1	Lighted with line
30"	01-70-2	Unlighted with line

2. The ship's crew will inspect lights and smoke flares. Replace defective or missing batteries, bulbs, flares, etc., with owner's-furnished equipment.

ITEM 410 LIFE RAFTS

1. The two C.J. Hendry 25-person inflatable life rafts are stowed onboard, in their racks. The ship's crew will install the hydro-static releases for USCG inspection. In the event that the life raft inspection dates are not acceptable, the CMS Representative will make arrangements for replacement or servicing by an approved facility in Kobe or Yokohama. If necessary, assist the crew by rigging the rafts ashore for servicing and returning to their racks after servicing. If necessary, assist the ship's crew by rigging the rafts ashore for servicing, and back aboard on completion of servicing.

NOTE: This is a USCG inspection item.

ITEM 415 FIRE FIGHTING EQUIPMENT

1. CO₂ Fixed Systems:

The CMS Representative will provide a USCG approved technician to reactivate the CO₂ located compartments:

<u>No.</u>	<u>Size</u>	<u>Location</u>	<u>Compartment</u>
37	50#	CO ₂ Room	1-33-1
5	50#	Fwd. CO ₂ Room	1-10-1
2	50#	Emergency Diesel Room	02-45-2
4	50#	Engineroom Hose Reel	2-60-1
<u>4</u>	50#	Engineroom Spare	2-60-1
52	TOTAL		

Test all operating levers to insure freedom of movement and remote operation. Replace broken glass operating lever covers as required with ship's spares. Test all alarms for delay and audio level. Test all remote valves to insure free operation. Connect controls, flexible piping and remove locking pins from operating levers.

2. Portable Fire Extinguishers:

The ship's crew will inventory and position all Dry-Powder and CO₂ portable fire extinguishers as required. Weighing is only required if 6 months has elapsed since last service (annual requirement) as indicated on the inspection tags. If required, the Shipyard shall arrange for the USCG Approved service technician to conduct weight tests and equipment serviceability survey in conjunction with servicing the fixed CO₂ system above.

3. Fire stations:

Assist the ship's crew in collecting fire hoses from storage areas, interior and exterior fire stations. Check each hose for serviceable gaskets, connect the hoses in an end-for-end loop for pressure testing. The Shipyard is to provide dock or sea water pressure to 125 psi for hydro-testing all hoses. Assist the ship's crew as required in disconnecting, draining and stenciling each hose with the test date. The ship's crew will collect and install at fire stations throughout ship. Hydro testing is required if 6-months has elapsed since last USCG inspection (annual requirement).

4. During the vessel's activation the ship's crew will be required to hold a fire drill. Following the activation of the ship's main fire line, the Shipyard and ship's engineers will test the fire-pumps to insure operation, line up and adequate on deck discharge pressure with each pump separately supplying two each, 1-1/2 inch fire hoses fitted with all-purpose nozzles.

NOTE: This is a USCG inspection item.

ITEM 433 WEATHER DECK SCUPPERS AND DRAINS

1. Scupper Extensions
Remove six each port and six each starboard side shell and deck scupper extensions. Restore coatings per paint specifications with Owner's supplied paint.
2. Main Deck Scuppers
Inspect all weather deck scuppers and drains to insure they are clear.

ITEM 435: HOSE GEAR

1. Remove cargo hose gear from midship stores. Inspect all blocks and sheaves for free operation. Pressure grease goose necks and winch fittings. Rig hose boom with topping lift, runner and guys.
2. Activate winch and test electrical operation. Top boom and demonstrate operation to CMS Representative and leave ready for use.

NOTE: ABS does not certify the hose gear on this vessel.

ITEM 445: WATERTIGHT AND WEATHER-TIGHT CLOSURES

1. Open and operate all watertight and weather-tight doors, hatches, airports and other closures which have been locked and/or wired shut from ship's interior. Replace rubber gasket material as required from ship's stores. Lubricate door dogs and closure hardware. Chalk test mating surfaces to show proper seal.
2. Remove temporary covers from shaft RPM counters and the rudder angle indicators from port and starboard bridge wings.
3. List of doors, hatches, and airports requiring repairs.
4. Activate radio room and midship office window air conditioners. Remove steel box covers for storing onboard in location designated by the Chief Officer or CMS Representative.
5. Remove welded galvanized steel covers from 18 ventilation terminals on 01, 02 and 03 decks. Grind off welding slag and burrs. Touch up paint.
6. Open up 22 hinged watertight ventilation covers on main 01, 02 and 03 decks. Remove sealant and excess grease.

ITEM 447: VENTILATION TERMINALS

1. Open up all dogged watertight ventilation closures, approximately 22. Remove G.E. Silicone Rubber sealant RTD 102 (white) from mating surfaces. Lubricate dogs and hinges.
2. Remove 16 gauge galvanized steel welded closures from approximately 18 ventilation terminals. Grind smooth any rough or damaged edges. Prime and paint.
3. Reinstall ventilation fan and motor at 02-70-1 using new 1-1/4 inch steel mounting brackets. Burn out 8-inch bulkhead insert and save for reuse.
4. Remove 10 welded plumbing vent closures at 01-29-1, 01-29-2, 01-43-1, 01-43-2, 01-48-1, 01-48-2, 01-54-1, 01-54-2, 01-71-0, and 01-71-1. Grind smooth any burrs or slag in way of removals. Prime and paint.
5. Reinstall ship's whistle on radar mast 03-29-1. Work will require: bolting to existing brackets with 4-5/8 inch bolts; reconnecting 1-1/2 inch piping; and reconnecting pull wire.
6. Identify removed welded closures as to location and place in shore side storage for later use.

ITEM 490: NAME BOARDS

1. Remove ship's name boards from forward cargo hold and reinstall at bridge wings in existing brackets. Use Contractor supplied, stainless steel, 2" x 1/4" nuts and bolts, 12 each. required.