MIL-STD-1682/2(SH)
27 October 1976

MILITARY STANDARD

SHIPYARD INSPECTION AND CLEANING PROCEDURES FOR SUBMARINES

PART 2

MISSILE CONTROL CENTER

SSBN 598 CLASS

FSC 1905

DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND

WASHINGTON, D.C. 20362

Shipyard Inspection and Cleaning Procedures for Submarines, Missile Control Center SSBN 598 Class

MIL-STD-1682/2(SH)

1. This Military Standard is approved for use by Naval shipyards during overhaul and conversion periods for submarines.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Ship Engineering Center, Center Building, SEC 6124, Prince George's Center, Hyattsville, Maryland 20782 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FOREWORD

This part provides the inspection and cleaning procedures for the Missile Control Center aboard SSBN 598 Class submarines.

CONTENTS

FIGURE

1. SCOPE

1.1 This part provides inspection and cleaning procedures for the Missile Control Center (MCC) and MCC ventilation system aboard SSBN 598 Class submarines. The basic standard and this part are to be considered as an integral single document.

2. REFERENCED DOCUMENTS

2.1 The issue of the following documents in effect on the date of invitation for bids form a part of this standard to the extent specified herein.

GOVERNMENTAL

SPECIFICATION

MIL-D-16791 - Detergents, General Purpose (Liquid, Nonionic)

3. DEFINITIONS

3.1 Clean. Clean is being free of all loose scale, rust, grit, filings, and other foreign substances; and free of oil, grease, and other organic materials.

3.2 Cleaning solvent. Cleaning solvents as used in this standard refer to water-soluble (Type I) liquid detergent, conforming to specification MIL-D-16791.

3.3 Dewpoint. The temperature at which condensation first occurs when a vapor is cooled.

4. REQUIREMENTS

4.1 General requirement.

4.1.2 Waste solvents shall be discarded in a sanitary sewer system.

4.2 Safety and precautions.

Note: Listed below are warnings appearing in this procedure. All personnel involved in operating and maintaining equipment must fully understand the warnings.

4.2.1 Ensure that proper warning tags are placed at power controller to prevent fans from being inadvertently energized during maintenance.

4.2.2 Supplemental filter material used in this standard is a restricted use item and should be used only during construction and availability periods such as upkeep, conversion, and overhaul. Cyanide gas is generated when filter material burns; therefore, its use is prohibited at all other times.

4.2.3 Do not use flammable cleaning solvents or solvents in spray form.

4.2.4 Do not take MIL-D-16791 cleaning detergent internally. Keep out of eyes. If swallowed, induce vomiting and call a physician; for eyes, flush with plenty of water and get medical attention.

4.3 Materials.

4.3.1 Materials required to perform the normal inspection, cleaning, and associated maintenance procedures are as follows:

(a) Containers for cleaning solution
(b) Cleaning Solvent, MIL-D-16791 (NSN 7930-00-282-9699 or equivalent)
(c) Supplemental filter material (NSN 1G-9330-00-965-0481 or equivalent)
(d) Coated cloth: fire retardant curtains (NSN 8305-00-082-5586/5587 or equivalent)
(e) Portable vacuum cleaner (nonmetallic hose)
(f) Assortment of wiping cloths
(g) Masking tape (roll)
(h) Thermometer
(i) Cheesecloth

5. INSPECTION AND CLEANING PROCEDURES

5.1 FBM MCC ventilation system inspection and cleaning.

5.1.1 Upon removing fan 13 (in the navigation center) and fans 38 and 39 (in MCC forward, port), ensure protective covers are installed over openings to prevent debris from entering supply plenum. Cover remaining MCC equipment with coated cloth (fire retardant curtains).

WARNING

Ensure that proper warning tags are placed at power controller to prevent fans from being inadvertently energized during maintenance.

5.1.2 Just prior to reinstalling fans, remove protective covers from supply plenums. Vacuum and wipe down accessible areas. Install supplemental filter material over fan intake.

5.1.3 Immediately prior to initial Fire Control System (FCS) light-off, perform 5.1.3.1 through 5.1.3.6.

5.1.3.1 Ensure clean filters are installed in each seat on blower supply. Over these filters install temporary filters (45 PPI).

5.1.3.2 Install cheesecloth over MCC air supply diffusers and fans 38 and 39.

5.1.3.3 Energize fans 13, 38, and 39 for 10 minutes, then secure.

5.1.3.4 Remove and inspect each piece of cheesecloth for dirt. If any dirt is evident, replace with a new piece of cheesecloth.

5.1.3.5 Repeat 5.1.3.3 and 5.1.3.4 until all areas are receiving clean air, i.e., cheesecloth is clean.

WARNING

Supplemental filter material used in this standard is a restricted use item and should be used only during construction and availability periods such as upkeep, conversion, and overhaul. Cyanide gas is generated when filter material burns; therefore, its use is prohibited at all other times.

5.1.3.6 Remove fan 13 filters and supplemental filter material. Clean filters as required, and replace supplemental filter material.

5.1.4 After FCS is energized and continuing until system turnover to Ship's Force, perform the following in 5.1.4.1 and 5.1.4.2.

5.1.4.1 Twice weekly, during the early stages of testing, remove and clean fan 13 filters by the ultrasonic method or steam and low-pressure air, as required. Also, remove and replace supplemental filter material.

5.1.4.2 Twice weekly, during early stages of testing, remove and ultrasonically clean FCS blower filters. Also, remove and replace supplemental filter material.

Note: During latter testing stages, when the workload/traffic in the MCC has reduced, clean filters once each week. The decision to clean filters once each week vs twice each week will be made by the ITRO Test No. 3-360-18 Test Director and will be based on results of previous filter inspection/cleanings.

5.2 FBM MCC inspection and cleaning.

5.2.1 After the ship arrives and overhaul has started, perform 5.2.1.1 through 5.2.1.6.

5.2.1.1 Daily inspect MCC, and clean as required, but at least once each week as follows:

(a) Remove heavy accumulations of dust, chips, etc., from work surfaces, exposed equipment, wire raceways, readily accessible areas of overhead, exposed foundations, deck, etc., using a vacuum cleaner or cloth as required.

(b) Daily empty refuse containers.

5.2.1.2 Maintain environmental conditions to protect all MCC equipment against dust, dirt, moisture, or other foreign matter.

5.2.1.3 Once each 8-hour shift, take psychrometer readings to ensure that MCC environmental conditions do not fall in area 4 of figure 1 (areas 1, 2, and 3 are not applicable to this SSBN Class).

5.2.1.4 Daily check that equipments exposed to possible damage are protected by suitable padding or covers.

5.2.1.5 Ensure that any welding or grinding activities are isolated from other sections of the MCC by suitable containment.

A SAMPLE DETERMINATION OF MCC DEW POINT TEMPERATURE FROM MCC WET AND DRY BULB TEMPERATURE IS SHOWN.

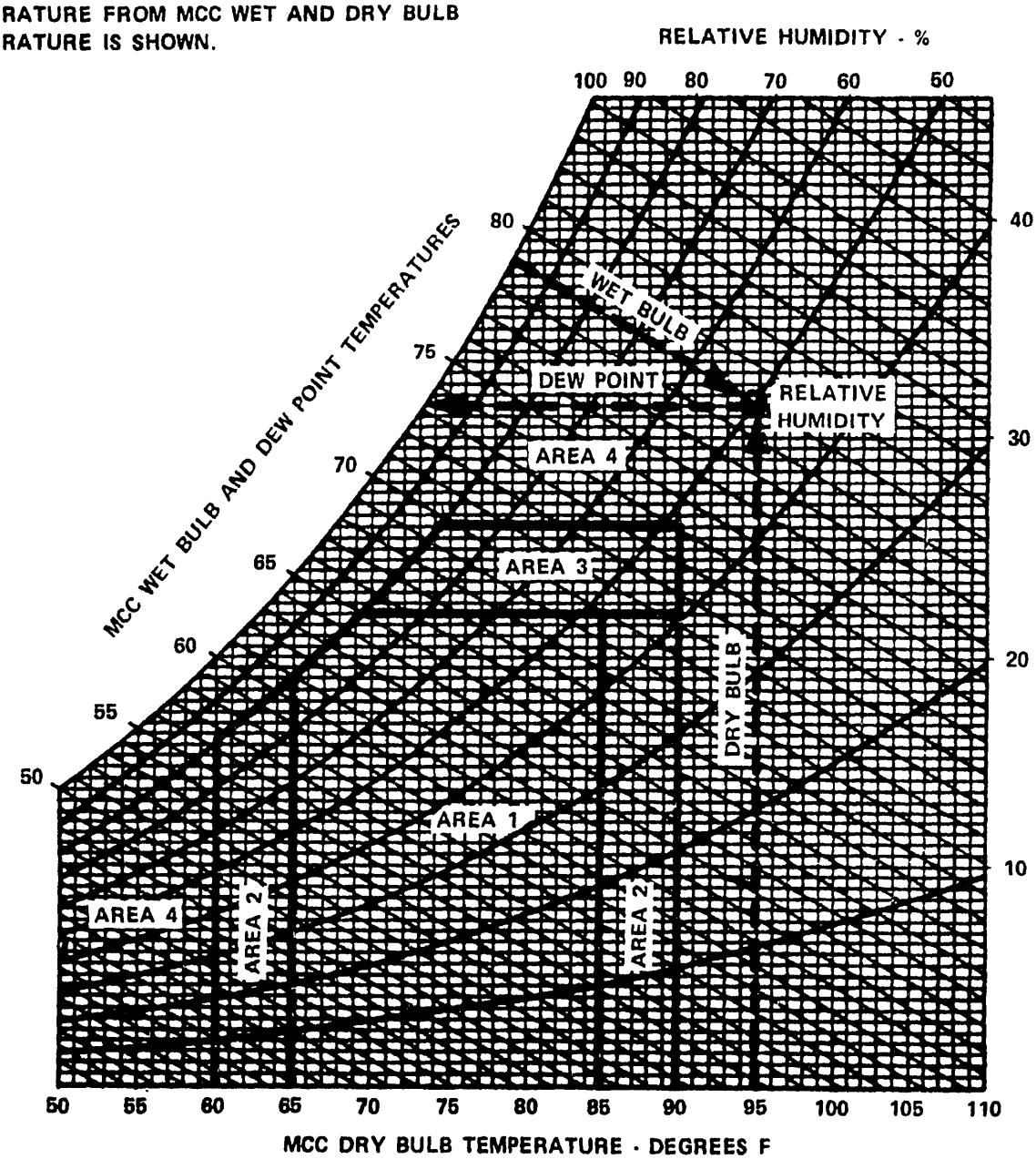

Figure 1. Psychrometric chart

5.2.1.6 Just prior to FCS MK 80 light-off, onload and energize 3 dehumidifiers. Daily monitor splash pans and empty as necessary.

5.2.2 Perform the following in 5.2.2.1 and 5.2.2.2 when FCS MK 80 is energized.

5.2.2.1 Clean MCC as follows:

(a) Install clean vacuum cleaner filter, and vacuum deck and any protective coverings to remove accumulations of dust, dirt, or other foreign matter (at least daily).

Note: Deck discoloration remaining after vacuuming is allowable; however, all loose particles must be removed.

(b) A wet wash of the deck, using cleaner, detergent, or suitable solvent, should be made when adhered dirt accumulation or discoloration is excessive.

(c) Daily remove dust from work surfaces and equipment by using wiping cloths and/or vacuum cleaner. Dispose of cloths after use.

5.2.2.2 Maintain MCC environment as follows:

(a) When FCS equipment is operating, install a thermometer at the intake flue of the missile motion unit equipment door (MMU-6A2).

(b) Monitor thermometer twice each 8-hour shift and ensure MCC is maintained within the following conditions: 85°F (29.4°C) maximum and 65°F (18.3°C) minimum. Relative humidity may vary from 10% to 95% and can change 50% in 4 hours or 80% in 7 hours when equipment is energized.

Note: In this Ventilation System, MCC dewpoint is not a problem because MCC air is used to cool equipment.

Preparing activity:
Navy - SH
(Project 1905-N006-2)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval
No. 22-R255

INSTRUCTIONS: The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/ vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

DOCUMENT IDENTIFIER AND TITLE

NAME OF ORGANIZATION AND ADDRESS

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?
   A. GIVE PARAGRAPH NUMBER AND WORDING.

   B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3. IS THE DOCUMENT RESTRICTIVE?

   ☐ YES ☐ NO *(If "Yes", in what way?)*

4. REMARKS

SUBMITTED BY *(Printed or typed name and address - Optional)*

TELEPHONE NO.

DATE

DD FORM 1 JAN 72 1426 REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED S/N 0102-014-1802

FOLD

COMMANDER
NAVAL SHIP ENGINEERING CENTER
CENTER BUILDING - SEC 6124
PRINCE GEORGES CENTER
HYATTSVILLE, MARYLAND 20782

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

POSTAGE AND FEES PAID
DEPARTMENT OF NAVY

DOD 316

COMMANDER
NAVAL SHIP ENGINEERING CENTER
CENTER BUILDING - SEC 6124
PRINCE GEORGES CENTER
HYATTSVILLE, MARYLAND 20782

FOLD