STATEMENT OF WORK (SOW)

FOR

High Pressure Air Compressor's (HPAC) No. 5 HPAC Assessment and Repair

1.0 BACKGROUND:

The Puget Sound Naval Shipyard and Intermediate Maintenance Facility (PSNS&IMF) in support of a CVN 68 class Aircraft Carrier requires the Original Equipment Manufacturer (OEM) to perform an assessment and restoration of High Pressure Air Compressor (HPAC) No.5 to OEM specification. No. 5 HPAC is reported to have water visible in the cylinder inspection windows.

1.1 SCOPE:

1.1.1 Perform assessment, troubleshoot, and repair to OEM specifications on No.5 HPAC

2.0 REFERENCES:

2.1 NAVSEA 389-0288; *Radiological Controls.*

2.2 Northwest Regional Maintenance Center Local Standard Item

2.3 S6220-DD-MMA-010; HIGH-PRESSURE AIR COMPRESSOR OIL FREE MODELS N30NL-4, 4A, AND 3E

2.4 NAVSEA S9AA0-AB-GOS-010, Rev 10; General Specifications for Overhaul of Surface Ships

2.5 Cleanliness Verification Sign-Off Sheet (Attachment A)

2.6 Operating Log (Attachment C)

2.7 Material History Record (Attachment B)

3.0 REQUIREMENTS:

3.1 Period of Performance: **March 3, 2025, through September 30, 2025**,

3.2 Planning, supervising, or performing nuclear work is NOT authorized without the express approval of Code 300N, Code 1200N, Code 2300, AND Code 105.

3.3 LOCATION OF WORK:

3.3.1 Work will be Performed at Puget Sound Naval Shipyard and Onboard Deployed Vessel during Transit from Puget Sound Naval Shipyard to PSNS & IMF San Diego Detachment.

3.3.1.1 Contractor employees require access to the following compartment(s) to conduct assessment of No. 5 HPAC, FWD O2N2 Compressor Room (1-77-4-E)

3.4 WORK CONTROLS:

3.4.1 Coordinate with Ship's Force (SF) to verify boundaries and ensuring entire site is isolated and ready for work.

3.4.2 Ensure all work on ship's systems and components properly authorized and controlled to ensure personnel and ship safety standards are met. Ships Force (SF)

will act as the Repair Activity designated representative (s) for the tag out of isolation.

3.5 RESTRICTED DATA:

3.5.1 Contractor employees require access to and control of RESTRICTED DATA (RD), regarding Naval Nuclear Propulsion Information (NNPI and U-NNPI), to accomplish the requirements of this contract.

3.6 **SECURITY REQUIREMENTS:**

3.6.1 Defense Biometric Identification System (DBIDS) Program: Commander, Navy Installations Command (CNIC) has established the Defense Biometric Identification System (DBIDS) for access control to CNIC Installations via Entry Control Points (ECP). DBIDS is an enterprise identity management and perimeter installation access control solution in which Contractor personnel who enroll, and are approved, are subsequently granted access to the installation for a period up to three years, or the length of the contract, whichever is less, and are not required to obtain a new pass from the Base Pass and Identification Office for each visit. There are no fees associated with obtaining a DBIDS credential.

3.6.2 The Government performs background screening and credentialing. Throughout the year, the Contractor employee must continue to meet background-screening standards. Periodic background screenings are conducted to verify continued DBIDS participation and installation access privileges. DBIDS access privileges will be immediately suspended or revoked if at any time a Contractor employee becomes ineligible.

3.6.3 Access to Installation. All Contractor personnel shall obtain access to the installation through enrollment and registration into the Defense Biometric Identification System (DBIDS). The Contractor shall provide the Contracting Officer with the name of their designated Service Contractor Administrator (SCA) for enrollment in DBIDS. Contact the Contracting Officer's Representative (COR) or Contracting Officer's Security Officer for assistance as needed. Once enrolled, the Contractor must provide the DBIDS Registrar with an approved employee list and then direct their employees to register into DBIDS.

3.6.4 DBIDS Credentials. Contractor employees shall furnish a completed copy of the SECNAV 5512/1 form to obtain the required background check and visit the local Navy Installation Visitor Control Center to obtain a DBIDS credential once approved. The SECNAV 5512/1 form and additional information about DBIDS can be found at https://www.cnic.navy.mil/om/dbids.html.

3.6.5 Unescorted access requires authenticating an individual's identity and determining their fitness using the following guidelines:

3.6.5.1 Identity Proofing. The process of providing sufficient information (e.g., identity history, credentials, and documents) when attempting to establish an identity. The following credentials are identity proofed at the card issue site from federally authorized identity documents and will be considered identity proofed. CAC, Uniformed Services Identification (ID) Card issued to military retirees and military family members, Non-DoD Federal Personal Identification Verification, United States (U.S.) Passport or Passport Card, Foreign passport that contains a temporary I-551 stamp or temporary I-551 printed notation on a machine-readable immigrant visa, or others listed in reference (a) and chapter 16. **(Note: While certain identification is approved for identity proofing, in order to register a visitor into DBIDS, the visitor must have an ID with an ID number associated. U.S. Citizens are required to provide their Social Security Number (SSN), Certificate of Naturalization or Taxpayer ID Number to receive a DBIDS pass to access the installation).**

3.6.5.2 Vetting. An evaluation of an applicant or card holder's character and conduct for approval, or denial of the issuance of an access control credential for physical access. The SECNAV 5512/1 is the sole means to initiate background checks on all visitors and/or contractors/vendors. Every background check for the purpose of access control requires completion of SECNAV 5512/1 for accountability purposes.

3.6.6 Personnel requiring access for 31 days or more will be issued a DBIDS card once all required documentation is provided to the VCC and registration is completed. Visits for 30 days or less will receive a paper DBIDS pass.

3.6.7 DBIDS passes require a picture and fingerprints for all visitor registrations. Failure to provide either can result in denial of base access for escorted or unescorted access.

3.6.8 Pre-enrollment. DBIDS pre-enrollment is available at https://dbids-usfj.dmdc.mil/portal/.

3.6.9 Contractors shall be accessing Machinery Spaces that contain UNNPI, NOFORN information, NNPI National Security Information (NSI), and Restricted Data. Workers assigned to work in these spaces REQUIRES A FINAL SECURITY CLEARANCE: Minimum of Confidential.

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3.6.10 Coordinate all contractor employee badging and security issues via the Government representative: [redacted].

3.6.11 This work requires routine access to propulsion and machinery spaces inside of a nuclear vessel. Workers accessing propulsion spaces also affords proximity to Access to Confidential Restricted Data. Workers assigned require a security clearance of at least CONFIDENTIAL.

3.7 **RADIOLOGICAL REQUIREMENTS:**

3.7.1 Contractor may be required to accomplish work onboard ship in areas that require personal monitoring of radiation (i.e. wearing a TLD). Contractor employees shall be trained in accordance with Reference 2.1 and be able to check out a TLD. Contracted workers will not handle radioactive materials or perform work on radiological controlled systems. Contractor shall obtain TLD's from Ship's Force (SF) as required.

3.8 **GOVERNMENT REPRESENTATIVES:**

3.8.1 Contracting Officer Representative (COR): Located within the contract

3.9 **TECHNICAL WORK REQUIREMENTS**:

3.9.1 Comply with the requirements of Northwest Regional Maintenance Center Local Standard Items 099-12NW of Reference 2.2.

3.9.1.1 Submit requirements of 099-12NW, para 3.11.1 of Reference 2.2 to the Contracting Officer's Representative (COR) prior to bringing materials onto the Government facility. (CDRL A001, DI-ENVR-82091)

3.9.2 OEM will provide technical representative(s) to conduct the following on No. 5 HPAC:

3.9.2.1 Perform complete assessment and troubleshoot of No. 5 HPAC to determine the scope of additional repairs.

3.9.2.2 Submit one legible copy, in approved transferrable media, a Condition Feedback Report (CFR) of the inspection results, including any missing or damaged parts, to the Contracting Officer's Representative (COR) for each piece of equipment inspected within 24 hours of completing the inspection. (CDRL A001, DI-MGMT-81648)

3.9.3 Perform repairs to restore No. 5 HPAC to OEM specification using Reference 2.3 as guidance.

3.9.3.1 Accomplish the Level II cleanliness requirements of Reference 2.4, sections 505j2 and 551W and verify on Reference 2.5. Submit a signed copy of Reference 2.5 to Code 260 via the Contracting Officer's Representative (COR) upon completion of work on compressor and components.

3.9.4 Observe a four hour operational test run at normal operating conditions.

3.9.4.1 Complete and submit log sheet of Reference 2.6, which is Figure 2-7 of Reference 2.3, or vendor equivalent to Code 260 via the Contracting Officer's Representative (COR). (CDRL A002, DI-MISC-81617)

3.9.5 Accomplish the material history requirements of Reference 2.3 and verify on Reference 2.7. Submit one legible copy, in electronic media, of the Material

History records to Code 260 via the COR within three (3) business days of completion of HPAC repairs.

3.9.5.1 Submit one legible copy, in electronic media, of the completion report, including OEM service provider assessment of failure root cause, to Code 260 via the COR within three (3) business days of completion of HPAC repairs containing the following information (CDRL A003, DI-MGMT-82050).

4.0 CONTRACTOR FURNISHED MATERIAL:

4.1 OEM will provide all material necessary to return unit to operational condition**.**

5.0 GOVERNMENT WILL PROVIDE:

5.1 Services provided as listed below:

5.1.1 Provide rigging/crane support.

5.1.2 Provide drain/disposal/replenishment of 2190 oil.

5.1.3 Provide drain/disposal/replenishment of Jacket Water 50/50 Coolant Mix.

5.1.4 Provide temporary support services such as staging/air/piping/electricity.

5.1.5 Ship's Force will operate all equipment.

6.0 QUALITY:

6.1 Quality Assurance Surveillance Plan (QASP): The Quality Assurance Surveillance Plan (QASP) is a tool the Government utilizes to verify the contractor is performing all services and delivery/installation of replacement parts required by the above requirements in a timely, accurate and complete fashion.

7.0 DELIVERABLE ITEMS:

Number	Name	Frequency	Quantity
A001	Assessment OQE/ Condition Found Report (CFR)	As needed	1 Each
A002	Operation Test (Reference 2.6)	One Time	1 per compressor
A003	Completion Report	Within 3 business days	1 per compressor
	Level II Cleanliness Certification (Reference 2.5)	Within 3 business days	1 per compressor
	Material History Log (Reference 2.7)	Within 3 business days	1 per compressor

Attachment A:

TITLE: Verification of Levels of Cleanliness Sheet

DISTRIBUTION STATEMENT D:
Distribution authorized to DOD components and DOD contractors only; Critical Technology; May 2017. Other requests for this document shall be referred to Puget Sound Naval Shipyard (Code 260). Destroy by any method that will prevent disclosure of the contents or reconstruction of the document.

Ship System: Oxygen System, SWLIN 553
Equipment: High Pressure Air Compressor, SWLIN 551

References:
1) NAVAL SHIPYARD QUALITY PROGRAM MANUAL (NAVSEA TL855-AA-STD-010 Rev 4)
2) INSPECTIONS AND VERIFICATIONS IN NONNUCLEAR SHIPS SYSTEMS (PSNS&IMFINST 4730.62 31 Aug 2018)
3) ENGINEERING AND PLANNING PROCEDURES MANUAL (EPPM) ENGRDEPT P5200(2) (Rev LATEST)
4) GENERAL SPECIFICATIONS FOR OVERHAUL OF SURFACE SHIPS (S9AA0-AB-GOS -010 Rev 10), PARAGRAPH 505J.
5) UNIVERSAL PROCESS INSTRUCTION (UIPI) 0505-908 (Rev LATEST) LEVEL II AND III CLEANLINESS FOR PIPING SYSTEMS/EQUIPMENT

Definitions:
System Entry: Contractor technicians have entered/opened up the respective fluid portion of the specific system.

Level II Cleanliness: Surface shall be visually free of grease, oil, flux, scale, dirt, loose particles, and any other contamination foreign to the base metal. Tap water residues on all metals and light superficial rust on carbon steel surfaces, caused by short time exposure to the atmosphere, are permitted. Light dust on cleaned surfaces is not objectionable, if the quantity and size of the particles does not adversely affect the system operation.

Background:
Reference (1) Chapter 7 tasks the shipyard to “develop and maintain procedures to ensure work performed associated with repair or conversion of Naval ship systems and/or components meet specified requirements in order to preclude downstream failures.” Reference (1) Section 7.2 establishes Inspection and Verification (I&V) Attributes that the shipyard is responsible for in ensuring that the NAVSEA I&V attributes are invoked in locally developed Technical Work Instructions. Further local guidance is provided in Reference (2) for PSNS & IMF and associated entities. Reference (3), Appendix C-54, establishes <V> attribute 551-001 for system cleanliness on compressed air systems.

Reference (1 & 2) establish that verification attributes <V> may be performed by either PSNS & IMF production (shop supervisor or mechanic), Quality Assurance Officials (QAO), or other personnel that have been appropriately trained to perform this function.

As required by Reference (2), the person designated to sign for an action verifies, based on personnel observation or Objective Quality Evidence, and certifies by his/her signature that the action has been performed in accordance with the specified requirements. Any work performed by the Task Group Instruction (TGI) involving an I/V which is subsequently voided by additional work or requires performing an I/V attribute that already has been signed off will require that affected I/V attribute to be reinvoked.

Attachment A:

NOTES:

1) This document here by serves as a briefing to allow contractors to complete <V> attributes as follows in this document.

2) Attributes have been modified to be worded for Contractor mechanics or Contractor supervisor to be able to complete.

3) Additional guidance for Level II Cleanliness is provided in Reference (5). Contractor can reach out to Contracting Official Representative (COR) or Project Engineer (PE) for further guidance and clarification on technical requirements for Level II Cleanliness.

Procedure & Signatures:

1) Prior to certification of work, contractor shall complete the following signatures for <V> Attribute 551-001 as implemented by References (1 – 5).

1.1) Instructions for completing signatures (NOTE: Print in “Name” block):

1.1.1) If entry into the air system, as previously defined, was not performed, then contractor technician shall mark “No” and complete “Level II Cleanliness Maintained” marked as “N/A”. Contractor shall then complete “Name”, “Signature”, and “Date”.

1.1.2) If entry into the air system, as previously defined, was performed, then the contractor technician shall mark “Yes” and complete “Level II Cleanliness Maintained” marked as “Yes” (upon verifying that system meets Level II requirements, as previously defined, upon closure of the system,). Contractor shall then complete “Name”, “Signature”, and “Date”.

2.) After completion of signatures, submit either original or copy of signed sheet (in forms of electronic media as specified in the PWS) to the COR.

See following sheets for signatures to complete.

Attachment A:

High Pressure Air Compressor No. 5:

System Entry – Yes: ____ No: ___

<V> Attribute 551-001: Accomplish signoff for cleanliness per PSNS&IMFINST 4730.62. Acceptance criteria: After completion of work, FME & Level II Cleanliness was maintained on High Pressure Air Compressor No. 1.

Comments:

Level II Cleanliness Maintained – Yes: ____ N/A: ____

Name: _____

Signature: _____

Date: _____

Attachment B:

MATERIAL HISTORY DATA SHEET

MH Document # _____

Ship's Name:	Hull:	Plant:	Ship's System:
Common Name of Equipment:			Accomplished by:
Location and Compartment:			
FOR SHIPYARD USE ONLY: Applicable ICN and KeyOp(s):			

☐ Electrical ☐ Electronic ☐ Hull ☐ Machinery

MATERIAL HISTORY DATA SHEET SUMMARY:

☐ Modifications/Alterations (Areas to Consider)

ShipAlt, Field Change, or A&I Number and Revision: _____
Brief Description of Work Accomplished

☐ Preventative Maintenance (Areas to Consider)

Maintenance Requirement: _____
Brief Description of Maintenance :
Problems Identified and Resulting Corrective Maintenance :

☐ Corrective Maintenance (Areas to Consider)

Replacement Part Information
Detailed Description of Problem and Symptoms
Details of Actions Taken Including Testing Performed

☐ Supporting Documentation (Areas to Consider)

Description of Enclosures: _____

Highlight Applicable Information

MATERIAL HISTORY DESCRIPTION OF EVENT:

Date	Remarks

ORIGINATOR/POINT OF CONTACT:

_____	_____	(____) _____	_____
NAME (Print)	Code	Phone Number	Date

REVIEWER:

_____	_____	(____) _____	_____
NAME (Print)	Code	Phone Number	Date

Attachment B:

MATERIAL HISTORY CONTINUATION DATA SHEET

MH Document # _____

Ship's Name:	Hull:	Plant:	Ship's System:
Common Name of Equipment:			Location and Compartment:

MATERIAL HISTORY DESCRIPTION OF EVENT (Continued):

Date	Remarks

Attachment C:

5000 PSIG SERVICE			HIGH PRESSURE AIR COMPRESSOR (4-HOUR) OPERATING LOG				
COMPRESSOR SERIAL NUMBER _____ DATE _____							
COMPRESSOR OPERATING MODE: MAN _____ AUTO _____	CONDS. DRAIN MODE: MAN_____ AUTO _____ UNMON_____ MON_____	SHUTDOWN	NORM	TIME			
PRESSURE (PSIG)	1ST STAGE DISCH	60[a]	33-38				
	2ND STAGE DISCH	175[a]	90-100				
	3RD STAGE DISCH	550[a]	310-350				
	4TH STAGE DISCH	1300[a]	775-855				
	5TH STAGE DISCH	3000[a]	1900-2100				
	6TH STAGE DISCH	5500[a]	5000				
	FRAME OIL BEFORE FILTER		Note[d]				
	FRAME OIL AFTER FILTER	BELOW 12 ± 2[b]	25-50				
	FRESH WATER		8-10				
	PILOT AIR		145-150				
TEMPERATURE (°F)	1ST STAGE DISCH	360[b]	260-300[g]				
	2ND STAGE DISCH	345[b]	270-300[g]				
	3RD STAGE DISCH	345	315-335[g]				
	4TH STAGE DISCH	345	270-300[g]				
	5TH STAGE DISCH	345	255-280[g]				
	6TH STAGE DISCH	345	250-270[g]				
	FRESH WATER OUTLET	200	120-130[g]				
	CRANKCASE OIL	180	120-150[g]				
	SEA WATER OUTLET	390+[f]	95[g]				
	FINAL AIR DISCH	125[b]	70-95[g]				
	1ST STAGE SUCT		AMB + 20				
	2ND STAGE SUCT		70-120				
	3RD STAGE SUCT		70-110				
	4TH STAGE SUCT		70-110				
	5TH STAGE SUCT		70-110				
	6TH STAGE SUCT		70-110				

a. Relief valve lifts

b. Automatic shutdown

c. In AUTOMATIC, compressor should normally start when pressure is less than/drops to 4700 PSIG.

d. When Oil Pressure Differential, at normal operating temperature, reaches 10 PSIG, the filter must be changed.

e. Maximum duration at 5500 PSIG: 2 hours in an 4 hour period.

f. Not used: set to maximum possible value, must be at least 390°

g. Variation in seawater inlet temperature may change this value significantly, see table 2.1B.

Figure 2-7 Operating Log - 5000 PSIG Service