

**Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual**

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**Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual**

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Contractor Resource Manual Revision Record		
Revision	Date	Description
1	4/1/2001	Original Issue
2	1/20/2002	<ul style="list-style-type: none"> • Extensive changes to Appendix C, <i>Contractor Health and Safety Evaluation Form</i> • Numerous changes to reflect new company name.
3	5/30/03	<ul style="list-style-type: none"> • The entire paint tracking section has been re-written to reflect new requirements of Newport News's Title V Air Permit and to clarify requirements of paint NESHAP requirements. (Part III, Paint Tracking Requirements) • Added requirements for contractors who enter the "dirty" side of a dust collector to wear respirators and to use exhaust ventilation if removing or disturbing used (dusty) bags. (Part II, Confined Spaces) • Added requirements for contractor companies to respond in writing for observed safety violations. (Part I) • Significant revisions to the confined space procedures. (Part II, Confined Spaces) • Complete re-write of requirements for handling PCBs. (Part III, PCB) • Clarify that electrical lines may not be run using yellow "S" or "J" hooks. (Part II, Fire Protection) • Added a prohibition against exiting elevated JLGs unless strict conditions are met. (Part II, Aerial and Scissors Lifts) • Added a requirement that personnel handling equipment on barges or scows without bumpers be securely lashed or wheels chocked. (Part II, Aerial and Scissors Lifts)
4	1/23/04	<ul style="list-style-type: none"> • Modified Form NN-9173 (Rev 0), <i>Contractor Environmental, Health and safety Evaluation Form</i>.
5	11/15/04	<p style="text-align: center;"><u>Fire Prevention</u></p> <ul style="list-style-type: none"> • The Evaluation Form has been modified to include new fire prevention requirements (Part II, Fire Protection) • Requirements to notify the shipyard of fire hazards caused or discovered by the contractor have been added. (Part II, Fire Protection) • Contractors are required to be familiar with location-specific shipyard emergency Action Plans (Part II, Fire Protection) • Torch start-up and shut-down procedures have been modified (Part II, Fire Protection) • Editorial changes to the section concerning Hot Work Permits for facility work (Part II, Fire Protection) • The description of a "brief shutdown" as it pertains to hot work has

		<p>been modified to “less than 15 minutes” from “15 minutes or less”. (Part II, Fire Protection)</p> <ul style="list-style-type: none"> Removed the provision that hot work permits are not required on new construction prior to the first fuel oil or lube oil loading. (Part II, Fire Protection) <p style="text-align: center;"><u>Lockout / tagout</u></p> <ul style="list-style-type: none"> Procedures for filling-out and installing tags have been modified. (Part II, Control of Hazardous Energy) <p style="text-align: center;"><u>Paint Tracking</u></p> <ul style="list-style-type: none"> Paint tracking section has been updated to remove monitoring requirements and to add record keeping and reporting requirements for all paint usage at the yard. (Part III, Paint Tracking Requirements) The Newport News Shipbuilding Coating Receipt Form, Inspection Form, and Paint/Solvent Container Integrity Inspection Form have been deleted. (Part IV, Appendix) The Northrop Grumman Newport News Paint Usage and NGNN Waiver Request for Thinning Coatings Forms in the Appendix have been modified. (Part IV, Appendix)
6	8/26/05	<ul style="list-style-type: none"> Revised Resource Manual website Extensive editorial/updates throughout entire manual Updated Table of Contents Revised O27 Contractor Section phone numbers (Part I, Environmental, Health and Safety at NGNN) Revised evaluation process time (Part I, Contractor Program at NGNN) Added Non-Operating Crane Access Pass and Surveillance requirements (Part II, Cranes) Revised requirements for welding, burning and heating, hotwork permits and fire watches (Part II, Fire Protection) Added requirements to Specific Requirements for Torch Equipment (Part II, Fire Protection) Modified and added to existing exceptions for spaces immediately adjacent to spaces that contain or have contained combustible or flammable liquids and gases for Land and facility operations (Part II, Fire Protection) Added requirements for reporting fires (Part II, Fire Prevention) Added requirements for Shipboard Work Control and Energy (Part II, Hazardous Energy Control) Modified requirements for Shipboard Hazardous Energy Control (Part II, Hazardous Energy Control)

		<ul style="list-style-type: none"> • Added requirements for vacuum cleaners and for Rad Source Instrumentation (Part III, Waste Management) • Added wastewater requirements for contractors trailers, sinks and washbasins (Part III, Liquid Waste and Water Pollution Prevention) • Revised requirements for sampling and discharge, labels, drip pans and spillage control (Part III, Liquid Waste and Water Pollution Prevention) • Revised Appendix B, <i>Contractor Environmental, Health and Safety Evaluation Form</i> • Updated contact persons on Appendix C, <i>NGNN Environmental Permits</i> • Updated Appendix D, <i>Health and Safety Program Assistance</i> • Updated Appendix H, <i>NGNN Waste Material and Hazard Warning Labels</i>
7	11/08/05	<ul style="list-style-type: none"> • Removed NGNN Proprietary statement with copyright statement. • Changed name of Dept. O48 from Crane Engineering & Maintenance to Crane Engineering & Quality (Part II, Cranes) • Updated the Certificate of Compliance form for cranes (Part IV, Appendices)
8	12/06/2006	<ul style="list-style-type: none"> • Added a chapter for Hexavalent Chromium. • Updated the Contractor Environmental, Health and Safety Evaluation Form to revision 3 to include Hexavalent Chromium. • Minor editorial changes to the Confined Space chapter.
9	04/23/2007	<ul style="list-style-type: none"> • Consolidated part II section D, Asbestos, and procedure S-1008, <i>Asbestos Procedure for Contractors</i> and moved all asbestos requirements into part II section D of this manual. The consolidation did not result in any substantive change in asbestos work requirements.

10	10/11/10	<ul style="list-style-type: none"> • Extensive editorial/updates throughout entire manual • Updated Table of Contents • Changed NGNN to NNS throughout entire manual. • Part I – Added requirements for handling Universal Waste. • Arsenic – Updated regulations and requirements. • Asbestos – Updated definitions, references and Asbestos worker qualifications; updated 9.d - Asbestos Work Area – Establishment; Page 9 - Updated “Special Clothing” Controls; Appendix A – Removed “Drilling into asbestos containing material.”; Appendix C – Added requirements for asbestos removal. • Chrome Si x – updated work areas; new sign added; Page 2 - updated reference; Appendix 2 – removed minimum requirements for removal of Chrome containing paints table. Appendix 4 is now Appendix 3: Paint Sampling. • Confined Spaces – Added new section “Vent Plenums.” • Definitions – added Universal Waste & Universal Waste Handler; updated requirements for Ignitable Waste. • Environmental Permits - Updated contact list; Added permit agency – VDEQ. • Evaluation Form – updated. • Excavations – Updated requirements for controls in excavation areas. • Facilities Excavation Permit – Updated form. • Fire Protection – Standards updated; Requirements for Hot Work. • Hazardous Energy Control – Removed “Work & Testing of Electrical Systems” & Live Circuits from section. Moved to “Electrical.” • Liquid Waste – updated requirements for disinfecting cleaning sanitary tanks on ships; Removed all references related to Consolidated Waste Facility (CWF) and replaced with Material Recycling Facility (MRF); removed reference to O67 – 18.1(cancelled) and replaced with Y-1112. • LOTO - Updated NNS references; requirements for non-shipboard Hazardous Energy Control. • Managing Environmental Hazards – Updated Federal and State environmental requirements. • Oil Transfer Ops – Updated regulations; response and countermeasure plans. • Paint Tracking Requirements - Updated regulatory references, Batch Certifications, Record-keeping requirements and painting of non-ship parts. • PCBs – Updated training for handling of PCBs; Updated potential sources of PCBs; deleted Instructions for Sampling PCBs table;
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		<p>deleted sampling Rubber and Gasket Material and specific requirements applicable to sample plans; deleted PCB Airborne Hazard table and items for reuse; deleted Background PCB Information and table.</p> <ul style="list-style-type: none"> • Resource List – Updated links, addresses and phone numbers. • Scissor Lifts – Part II.C.1 - updated requirements for mobile equipment. Part II.C.3 – added note for best management practices at NNS. • Sewage – Updated hazards, references and requirements. • New – Abrasive Blasting • New - Electrical • New – Ionizing Radiation • New – PPE • New – Scaffolding & Fall Protection. • Waste Management – Updated references and regulations; added universal waste bulbs and batteries.
11	03/31/11	<ul style="list-style-type: none"> • Changed Northrop Grumman to Newport News Shipbuilding throughout manual. • Changed NGNN to NNS throughout manual. • Added a requirement that asbestos work plans include notification of NNS in the event of spills & releases of asbestos. • Change to internal requirements for employee accessed scaffolding/staging.

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**Newport News Shipbuilding
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Part I - General Information

Newport News Shipbuilding Contractor Environmental, Health and Safety Resource Manual

Disclaimer: This is a summary of environmental, health and safety requirements specific to contractors at Newport News Shipbuilding (NNS). Every attempt has been made to ensure that it is complete. However, inadvertent omission of a requirement does not relieve the contractor of a responsibility which he/she otherwise has, whether by regulation, law or NNS purchase order.

Part I — GENERAL

A. INTRODUCTION

1. *Commitment to Excellence at NNS*

NNS is committed to EH&S excellence through programs and expertise protecting employees, the community and our natural resources. We achieve this mission through corporate leadership, employee, contractor, vendor, and customer involvement. This mission is also achieved by rigorous implementation of best management practices and regulatory requirements. As an NNS contractor, it is vital that you understand your role in making NNS a safe place to work and also your responsibility to protect the environment.

The Occupational Safety and Health Administration (OSHA) has recognized NNS as a leader in health and safety by awarding our company the STAR level of achievement in the Voluntary Protection Program (VPP). To maintain our superior standards in health and safety, all of us must be involved in and support the NNS health and safety program. If your company is interested in becoming a VPP site, you may contact a member of the NNS Health and Safety staff at (757) 688-5523, the Virginia Department of Labor and Industry at (804) 786-5873, or the OSHA Region III office in Philadelphia at (215) 596-1201.

We hope that you will find the contractor EH&S protection process at NNS to be a mutually beneficial experience for your company and for NNS. Some of the benefits that your company may gain include an increased awareness of EH&S concerns, a reduction in the number of injuries experienced and a reduction in your worker's compensation expenses.

2. *Purpose of this Manual*

The purpose of this manual is threefold. It provides information for current, as well as, prospective contractors on the Newport News Shipbuilding (NNS) Environmental, Health and Safety (EH&S) Program and the requirements they must meet to perform work at NNS. It also sets forth NNS-specific

environmental protection and health and safety guidelines and rules that supplement federal and state safety, health and environmental laws and regulations. ***This manual may not be inclusive of every possible Environmental, Health and Safety topic.***

Secondly, this manual provides information on the potential hazards that are encountered in the shipbuilding and repair industry and general information on the means to avoid, eliminate or minimize those hazards.

Lastly, the manual provides information on the resources that are available to you to build or enhance your EH&S program.

Contractors are responsible to ensure that all applicable requirements in this manual are met. Not all details in this manual will be applicable to every NNS contractor. For this reason, it is provided with an extensive table of contents and several appendices, to make it easier for you to go directly to the applicable sections. Please note that Appendix A contains a detailed list of definitions and acronyms used in this manual.

It is the responsibility of each and every contractor at NNS, as a separate employer, to comply fully with all applicable federal, state and local regulations and laws.

We hope that this information helps you and employees of your company to have a safe, healthy and injury-free environment as well as a profitable experience at NNS.

3. ***EH&S Orientation Program***

Non-employee orientation is provided for contractors, customers and visitors prior to their entering production areas, or performing production work at NNS. Non-employee orientation may only be waived for visitors who will be continuously escorted by responsible NNS personnel.

The orientation includes a 15-minute video which discusses environmental, health and safety information at NNS about which visitors must be knowledgeable and must be viewed at the NNS Pass Office on ***39th Street (between Washington and Huntington Avenue).***

Non-employees who attend the orientation are provided a booklet *Safety Sense Handbook for New Employees, Contractors and Visitors*. This booklet includes information such as:

- a. Important phone numbers,
- b. Environmental concerns of which you must be aware,

- c. Hazards which may be encountered at NNS, including radiation,
- d. Tags, labels, ropes and signs used at NNS to identify hazards,
- e. Personal protective equipment required at NNS, and
- f. Actions to take in the event of an emergency, including: emergency evacuation.

B. ENVIRONMENTAL, HEALTH AND SAFETY AT NNS

1. *Responsibilities*

Protection of the environment and maintenance of health and safety in the workplace are responsibilities of all personnel at NNS, whether they work for NNS or for any other employer at NNS. It is the responsibility of each individual employee to know specific hazards to which they could be exposed, and take appropriate steps to correct or protect against these hazards.

Everyone at NNS must read and obey all labels, tags, signs, rope boundaries, and all verbal instructions from NNS management personnel. NNS management personnel include: EH&S (O27), RADCON, and hourly personnel belonging to EH&S Task Teams. Furthermore, it is vital that all contractor employees at NNS ensure that his/her company on-site management is aware of his/her presence, to include arrival time and departure, each and every day they are at NNS.

The EH&S Department (Dept. O27) provides guidance to employees and non-employees concerning EH&S issues. For any environmental, health or safety concerns: contact the EH&S Department at (757) 688-5523, or the O27 Contractor Section at (757) 688-1645 or (757) 688-2249.

NNS has established EH&S task teams to assist in the awareness of EH&S issues at NNS. Teams function in all the various geographical areas and in trade-specific operations. Membership in these task teams includes both NNS management and the hourly workforce. Many of these task teams also include customer and contractor representation.

2. *Health and Safety Regulations and Requirements*

As a maritime facility, NNS falls under the jurisdiction of the Federal Occupational Safety and Health Administration, rather than the Virginia state plan. Federal OSHA enforces the applicable OSHA regulations as follows:

- a. At NNS, OSHA maritime regulations (29 CFR 1915) are applicable for both shipboard and non-shipboard operations.

- b. The OSHA construction regulations (29 CFR 1926) are applicable to construction operations conducted at NNS.
- c. Where there is no specific maritime or construction regulation, then the OSHA general industry regulations (29 CFR 1910) apply.

The Occupational Safety and Health Act states, in section 5(a)(1): “Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.” This covers any situation where there is no specific regulation.

3. ***Environmental Regulations and Requirements***

The NNS facility is regulated by Federal, State and Local environmental laws and other requirements. Agencies to which NNS is responsible for environmental compliance are: EPA (Federal), Coast Guard (Federal), VDEQ (State), and HRSD (State/Local). Specific environmental regulations which impact NNS include: CWA, CAA, CAAA, RCRA, SWMR, DOT and TSCA. (See Appendix A for definitions and acronyms.)

NNS is regulated by the VDEQ, which is authorized by EPA to administer RCRA. The VDEQ hazardous waste regulations are located in 9 VAC 20-60 et seq. and incorporate 40 CFR parts 124, 260, 261, 262, 263, 264, 265, 266, 268, 270, 273, 279 by reference. NNS adheres to the solid waste regulations administered by VDEQ which are located in 9 VAC 20-80 et seq. The DOT regulations that apply to NNS are 40 CFR parts 171, 172, 173, 174, 175, 176, 177, and 178. In addition, NNS complies with TSCA specifically for PCBs as listed in 40 CFR Part 761.

NNS is regulated by HRSD, which is authorized by the EPA and the VDEQ to administer the CWA. The VDEQ industrial wastewater regulations are located in 9 VAC 25-31 et seq, 9 VAC 25-32 et seq. The federal regulations establishing test procedures for the analysis of pollutants are located in 40 CFR 136 and general provision and pretreatment regulations for existing and new sources of pollution are located in 40 CFR 401 and 403.

NNS is regulated by the VDEQ Virginia Pollutant Discharge Elimination Permit (VPDES). These regulations are located in 9 VAC 25-31-10 et seq. The DEQ is authorized by EPA to administer National Pollutant Discharge Elimination System requirements (40 CFR 122 et seq.) through the VPDES program.

NNS transfers oils and oily wastes in accordance with the following Coast Guard regulations: 33 CFR parts 126, 154, 155 and 156. Response plans have also been developed in accordance with these regulations and Virginia

regulation 9 VAC 25-90-10 *et seq.* A Spill Prevention, Control and Countermeasures Plan has also been developed in accordance with 40 CFR 112.

Air Pollution generation, control and reporting issues at NNS are regulated by Title 40, Chapter 1, Subchapter C of the Code of Federal Regulations. Federal statutes in

Parts 50, 51, 52, 58, 60, 64, 71, 75 and 88 are implemented and enforced by the Virginia Department of Environmental Quality. Parts 61, 63, 66, 68, 69 and 82 are implemented and enforced directly by the Environmental Protection Agency. Additional state regulations, policy and guidelines for implementation of federal policy are found in Virginia regulation 9 VAC 5 Chapters 10 through 80.

The Community's Right-to-Know provisions are implemented by the state under Title 40, Chapter 1, Subchapter J, and Part 370 of the Code of Federal Regulations. Federal Right-to-Know regulations as implemented and enforced by the Environmental Protection Agency are found in Parts 300, 302, and 372

For a list of specific permits governing operations at NNS and the O27 contact person for each permit, see Appendix C.

4. ***Enforcement***

NNS maintains a proactive EH&S program that includes aggressive management of contractor EH&S issues and enforcement of rules and regulations, and NNS will enforce sanctions for contractor or visitor non-compliance with NNS rules and procedures. Notwithstanding NNS's enthusiastic approach to EH&S compliance, NNS does not consider itself a "controlling employer" in the sense that OSHA uses that concept. It is the ultimate responsibility of each contractor, not of NNS, to ensure the health and safety of each of their employees.

Each and every employer at NNS must ensure that their company activities comply with applicable EH&S requirements, including those of federal, state and local agencies and of NNS. Each and every employer at NNS must ensure that their own employees are not exposed to hazardous conditions created by the activities of his own company, and that other personnel are not subjected to hazardous conditions created by the activities of their company.

Each and every employer at NNS also has a responsibility to ensure that their company activities do not threaten the NNS environment or the local community. It is the responsibility of any employer at NNS, who observes a hazard to their own employees which is created by another employer, to instruct their employees to recognize the hazard and how to avoid the dangers associated with it. It is the responsibility of any employer at NNS, when extreme circumstances justify, to remove their employees from the job where a hazard exists, until it is corrected. If it cannot be determined who created the

hazard, the employer should notify the prime contractor (or notify NNS if there is no other prime contractor).

Violations of safety rules at NNS worksites will be documented by the EH&S department. Contractors will be notified of these observations by mail and will be required to respond in writing, with a description of the cause of the violation and a corrective action plan to prevent recurrence of the violation. Failure to adequately and promptly respond may affect the ability of the contractor to perform work at NNS.

5. *Newport News Shipbuilding Permits and Required Notifications*

Following is a list of common permits and other work controls required at NNS and their applicability:

Permit:	For:
Entry Permit	Entry into AOD pit in the NNS Foundry
Tunnel Access Work Permit	Entering Utility Tunnel
Marine Chemist	Certified Marine Chemist Approval Certificate required for hotwork in certain spaces.
Certification of Compliance	Must be completed and displayed on any and all contractor cranes at NNS.
Hot Work	Hot work in areas which are not designated for hot work.
Cold Work	Certain listed uses of flammable/combustible liquids.
Red Tags	Shipboard Hazardous Energy Control
Work Permit	Referenced
Excavation Permit	Any digging or earth penetration

6. *Newport News Shipbuilding Forms*

Following is a list of various forms used at NNS and their applicability:

Form:	For:
Contractor Environmental, Health and Safety Evaluation Form	Contractor Environmental, Health and Safety Qualification
NN4651 NNPN 3321836	“Waste Material” label
NN7029 NNPN 15278621	“Hazardous Waste” label
NN4694 NNPN 3321470	“Hazard Warning” label

Form:	For:
NN7067 NNPN 16575967	“Universal Waste Light Bulbs”
NN7068 NNPN 16575958	“Universal Waste Batteries”
“Waste Material Transfer”	Hazardous waste being transported to accumulation area
Weekly Inspection	Bulk waste weekly inventory and inspection
“Chain of Custody”	Trace a sample from collection to the arrival at NNS Laboratory Services
Material Receipt Form	Transporting non-bulk hazardous waste.
Form 2 Coating Compliance Certification	Forms Used in the Painting `NESHAP Compliance Assurance Program
Form 3 Method 24 Test Results Form	
Form 4 Container Compliance	
Form 5 Paint Crew Usage	

7. Newport News Shipbuilding Departments

Following is a list of NNS departments that may interact with contractors and their function:

Dept.:	Name:	For:
O15	NNS Fire Department and Security	Fire Protection Security
O27	Environmental, Health and Safety	Contractor Safety
O31	Laboratory Services Department	Wastewater analysis
O43	Maintenance	Lockout/tagout procedures Hot/Cold Work Permits
O46	Plant Operations	Waste and Recycling

Dept.:	Name:	For:
O48	Crane Engineering & Maintenance	Crane Operations Safety
X18	Welders	Hot/Cold Work Permits
X33	Painters/Insulation	Provide oil boxes
X36	Waterfront Support Services	Equipment
X42	Pipe	Vessel water discharges, Inert Gas Operations
X80/X82	Repair & Construction	Vessel water discharges

C. CONTRACTOR PROGRAM AT NNS

1. *Contractor Management Procedure*

The use of contractors and subcontractors at NNS involves health and safety risks and liability to NNS as well as to the contractor companies.

NNS has a procedure to define responsibilities of NNS personnel in managing contractor operations. That procedure establishes NNS policy regarding the management of EH&S issues involving the use of contractors and subcontractors at NNS, and defines specific requirements for NNS personnel who have responsibilities managing contractors and/or subcontractors at NNS (including requisitioners, sourcing agents, Contractor Coordinators and EH&S personnel).

The EH&S Department (NNS Department O27) is responsible for the content and maintenance of that procedure and this manual. That procedure is not included with this *Manual*, and is not applicable to, and does not include requirements for contractors or subcontractors.

2. *Contractor Coordinators*

Your Contractor Coordinator is a NNS employee who is assigned to monitor your activities as a NNS contractor or subcontractor.

In addition to their production-related duties, Contractor Coordinators have specific responsibilities for contractor environmental, health and safety. Your Contractor Coordinator is responsible for informing you of conditions at NNS which may adversely impact your health and safety. He/she will also make you aware of specific NNS procedures which apply to your particular work.

3. *Contractor Selection and Evaluation*

a. *How does my company become approved to perform work at NNS?*

NNS has a rigorous health and safety evaluation program that is designed to ensure that only contractors with established health and safety programs and satisfactory injury/illness rates are permitted to work at NNS. Prospective contractors who perform production work at NNS must obtain approval by NNS Dept. O27.

Listed below are the steps required for a contractor to become qualified.

b. ***Step One: Does my company meet the NNS definition of a “contractor”?***

NNS defines a contractor as any legal entity with a contract to perform production work on NNS property or on a NNS-controlled worksite. This includes entities contracting directly with NNS or indirectly through another entity that has a contract directly or indirectly with NNS (such as a subcontractor to a NNS contractor). This definition does not include leased employees, and also does not include customer contractors (such as those working directly for the Navy or other ship owner). See definition of “Production work” in Appendix A.

Under certain circumstances NNS may decide to allow outside entities (such as the Virginia Department of Transportation) to perform production work at NNS but not under the control of NNS. These instances and work sites will be specifically designated and isolated.

c. ***Step Two: What are the requirements to become a qualified contractor?***

During the pre-bid process, NNS Sourcing representatives will provide you a copy of the NNS Contractor Environmental, Health and Safety Evaluation form. A copy is also provided in Appendix B. You must carefully complete this form, indicating which OSHA or other regulatory programs apply to your company.

To aid you in this process, on the evaluation form we ask you about primary OSHA regulatory areas that apply most often to NNS contractor operations. You are not required to have information and programs for those OSHA regulatory areas that are not applicable to the work your company performs at NNS. Just answer the question on the form about whether your employees will be exposed to the particular hazard at NNS.

If you don't know, discuss it with your Contractor Coordinator or a representative from the NNS EH&S Department.

[Note: As an employer it is your ***responsibility*** to know what hazards to which your employees may be exposed!] On the other hand, omission of a regulatory area from the evaluation form does not relieve you of responsibility to comply with any other applicable laws and regulations, NNS contract or purchase order provisions.

The evaluation form indicates what documentation you are required to provide, such as your OSHA log summaries, in addition to the total number of employee hours worked for the last three calendar years, and any applicable health and safety programs.

Return the evaluation form with all required documentation to the NNS EH&S Department at the address noted on the form. Note that the more thoroughly you complete the form, the smoother the evaluation process will be. That is, an incomplete submittal will delay your approval, and thereby delay your work at NNS.

d. ***Does NNS expect all the health and safety programs to be written?***

Where OSHA requires an employer to have a specific written program (such as hazard communication or respiratory protection) then NNS will require a written program. For other health and safety programs, NNS requires that you describe how you meet the major elements of the regulation. These descriptions will be understood to be statements of your company's policy.

Note: NNS may evaluate your company's compliance with any of these programs, whether OSHA-required written programs, or your statements of company policy. For assistance in developing these health and safety programs, or in improving your health and safety performance, see Appendix D.

e. ***What will NNS do with the completed form? — How will my company know if it is approved?***

The NNS EH&S Department will evaluate the information you provide to determine if your company meets the established NNS health and safety criteria. In general, you should have no difficulty in meeting the NNS requirements if your company's injury rates are below your industry's average, and written health and safety programs and descriptions of how your company complies with the OSHA requirements are found to meet requirements of the respective OSHA regulations.

The NNS EH&S Department will notify you if additional information is needed. If your company meets the established NNS health and safety criteria, the Environmental, Health and Safety Department will notify you, NNS Sourcing and your NNS Contractor Coordinator (if assigned) of your approval status.

f. ***How often is a contractor re-evaluated?***

NNS reviews contractor performance and programs annually. You will receive a letter in January of each year requesting you send us a copy of

your previous year's OSHA 300 log summary, total hours worked and any changes to your written health and safety programs.

The evaluation process takes about three months to complete due to the number of submissions. Upon re-evaluation you will be notified of your approval status. NNS will not award contracts to companies who no longer meet the NNS health and safety criteria, except under extreme and carefully controlled circumstances.

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Part II – Preventing Injuries and Illnesses

Shipbuilding and repair is one of the most hazardous industries in the country. As discussed previously, contractors must have and adhere to specific health and safety procedures and programs as required by the nature of the operations their employees perform. This section discusses specific hazardous materials and systems of which the contractor must be aware to ensure the health and safety of his employees.

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Cranes

CRANES

1. *Hazard and Reference*

The use of cranes at NNS presents a serious potential hazard to personnel and to equipment. The requirements listed here are taken from the NNS *Crane Program Manual*, which is the primary NNS reference. These requirements will be updated as necessary when this primary reference is changed.

2. *Regulations*

Each contractor owning and/or operating cranes at NNS shall ensure all of their cranes and crane operators meet applicable OSHA requirements. The requirements for crane operation are specified in 29 CFR 1910.180, 29 CFR 1926 and 29 CFR 1918.

3. *General Requirements*

During the NNS pre-approval process (see General Information), each contractor whose employees will operate cranes must provide to the NNS Environmental, Health and Safety Department a copy of their written Crane Safety Program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to NNS on an annual basis.

Contractors shall ensure only properly trained personnel are permitted to operate a crane at NNS. Each contractor operating cranes at NNS shall provide to NNS Department O48, Crane Engineering & Quality, prior to bringing the crane onto NNS property, a completed copy of the Certification of Compliance, Newport News Form NN 9035 (see Appendix E). Fax the COC to (757) 688-4026.

The completed COC must also be displayed in the crane cab at all times while the cranes are on NNS property. The COC (see Appendix E) must be signed by a responsible company officer of the employer that provides cranes for any lifting and handling work at NNS. By his signature on the COC, the employer certifies that:

- (1) The COC is displayed on all cranes at all times while the cranes are on NNS property.
- (2) The crane and crane operators provided by his company for work at NNS comply with all applicable OSHA requirements,

- (3) Each person operating cranes at NNS is fully trained and qualified to operate the equipment at NNS.
- (4) Equipment and personnel certifications will remain valid while operating at NNS.
- (5) All cranes are equipped with an anti-two-blocking device that, when activated, disables all crane function whose movement can cause two-blocking.
- (6) No safety devices will be by-passed during lifting and handling operations at NNS.
- (7) Any lifting and handling related accident or incident involving the employer's cranes or operators will be reported to NNS (as discussed below).
- (8) Crane operators shall attend NNS crane orientation prior to operating a crane.

4. ***Other Requirements***

Contractors shall not park vehicles or place materials on, or allow anything to overhang the yellow painted zone that designates the crane's travel path zone. Contractors shall not allow loads to pass over personnel or allow personnel to work on or under a suspended load.

Contractors shall ensure their crane operators or riggers inspect handling equipment at the beginning of each shift and prior to each use. Contractors shall also ensure their crane operators or riggers do not use handling equipment that does not meet the manufacturer's inspection requirements for safe operation, and never exceed manufacturer's capacity ratings

Contractors shall ensure their crane operators or riggers use the crane's horn and rigger's whistle to warn personnel working in the area to stay clear of the crane's operation.

5. ***Non-Operating Crane Access Pass***

- (a) Contractors brings boom trucks or other service trucks with permanently mounted cranes onto NNS property which will not be used for lifting shall complete a Non-operating Crane Access Pass, Newport News Form NN 9239 (Appendix B, Y-1098), in lieu of a COC prior to being allowed entry. This certificate must be completed and visibly posted in the cab at all times while the truck is on NNS property.

- (b) By signing the Non-operating Crane Access Pass, the driver of the vehicle certifies that he or she will ensure no lifts are made with the crane while on NNS property.
- (c) Any contractor who is found making lifts with a truck-mounted crane with a posted Non-operating Crane Access Pass will be subject to dismissal and may be refused access to future work at NNS.

6. *Mobile Cranes*

Mobile cranes shall have a manufacturer's load chart posted in the cab. All operators shall be familiar with the chart and how to use the load chart. No crane shall be operated in excess of the load limits on the manufacturer's load chart for that crane. The weight of all auxiliary handling devices, such as hoist blocks, hooks, and slings shall be considered a part of the load rating.

Outriggers shall be fully extended and used when lifting in other than over the end positions on all mobile cranes except locomotive cranes. All mobile cranes used for personnel handling must have written or documented approval from the manufacturer of the crane. Outriggers shall be used when lifting personnel. All floats/personnel baskets will be checked to ensure that they are structurally safe and have a visible load rating.

Mobile cranes shall not travel without the hook being secured. Accessible areas within the swing radius of the outermost part of the body of a revolving crane shall be guarded to prevent an employee from being struck or crushed by the crane.

7. *Reporting Crane Accidents/Incidents*

- (a) A crane accident occurs when any one or more of the elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in the following:
 - (1) Personnel injury or death. Minor injuries that are inherent in any industrial operation, including strains and repetitive motion related injuries, shall be reported by the normal personnel injury reporting process of the activity in lieu of these requirements.
 - (2) Material or equipment damage.
 - (3) Dropped load.
 - (4) Derailment.
 - (5) Two-blocking.
 - (6) Overload.
 - (7) Collision, including unplanned contact between the load, crane, and/or other objects.

- (8) Items c, d, e, f, and g are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure), is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).
- (b) In the event of a crane accident, the following actions **must** be taken:
- (1) Stop work immediately and secure the site. Do not alter the scene of the accident unless it is necessary for the safety of personnel or property.
 - (2) Call *911 (from shipyard phones) or 380-2222 (from cell phone) for emergency assistance, if needed.
 - (3) Call 688-9888 to report the accident to the Facilities Service Desk. The Facilities Service Desk will notify the Newport News Crane Accident Response Team.
 - (4) Make sure that anyone who was involved in or has knowledge of the accident remains near the area.
 - (5) Wait for the Crane Accident Response Team to arrive.
- (c) Following a crane accident, the contractor is required to perform a complete investigation of the accident and provide the Newport News Crane Accident Response Team with a written accident report detailing the following information:
- (1) **Date** – date accident occurred.
 - (2) **Time** – time accident occurred (hour and minute).
 - (3) **Personnel Injury** – “YES” if injury occurred, “NO” if injury did not occur.
 - (4) **Asset** – equipment number or model number.
 - (5) **Asset Description** – Mobile Crane, Truck Crane, Wagon Crane, etc.
 - (6) **Asset Location** – where the crane was working when the accident occurred.
 - (7) **Accident Cause** – what caused the accident? Examples: Operator Error, Rigger Error, Design Error, Electrical/Mechanical Failure, etc.
 - (8) **Brief Damage Description** – briefly describe what damage occurred to any equipment or property.
 - (9) **Employees Involved** – provide name, social security number, employee’s role on the job, and “YES” or “NO” if the employee was injured.

- (10) **Accident Description** – describe, in detail, the events occurring before the accident, the accident itself, what happened to cause the accident, and the events that immediately followed the accident.
 - (11) **Injury Description** – provide a description of the injury or injuries which resulted from the accident.
 - (12) **Immediate Corrective Actions** – list the actions taken immediately following the accident (i.e. securing the load, attending to the injured, notifying the Maintenance Service Desk, etc.).
 - (13) **Investigation Findings** – list pertinent information gathered from the investigation that are major facts contributing to the accident.
 - (14) **Apparent Cause** – the specific act or action that caused accident.
 - (15) **Permanent Corrective Action(s)** – specify remedial measures taken or planned to prevent the accident from recurring. The corrective action must be directly related to the “Apparent Cause”.
- (d) The NNS Crane Accident Response Team will also conduct an investigation and will prepare a separate accident report for NNS use.

8. *Surveillance*

- (a) The NNS Responsible Party must notify Department X36 of any contractor cranes working at Newport News.
- (b) Department X36 performs daily surveillance of contractor crane activities at Newport News to ensure:
 - (1) Contractor cranes are set up properly.
 - (2) All handling equipment is in good condition and is being properly used.
 - (3) All rigging is being performed in a safe manner.
- (c) In addition to surveillance, contractor crane operations may be audited at any time while on NNS property to ensure:
 - (1) The COC is properly completed and displayed on the crane.
 - (2) The ODCL was properly completed and retained.
 - (3) All installed safety devices are operational.
 - (4) The operator understands how to report a crane accident.

- (5) Equipment OSHA inspections and test are up-to-date.
- (d) At any time, contractor crane operations may be stopped if any of the above listed requirements are not met or if the operations are thought to be unsafe. A contractor may be disqualified from future work at Newport News Shipbuilding for multiple deficiencies, or if his or her safety program is considered to be inadequate.

**Newport News Shipbuilding
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Electrical

Electrical

1. *General*

- a. This section covers all electrical/electronic circuits and distribution systems greater than 30 volts, including indoor, outdoor and shipboard systems. This section also includes all machine tools, cranes, mobile equipment, utility equipment, test equipment and analyzing equipment. This section is applicable to all electrical installations, modification, preventive maintenance and repairs.
- b. Contractors who work on electrical systems described above shall have an approved electrical work program that explains how employees will be protected from arc, blast and shock hazards. Any significant deviations from NFPA 70E must be explained in the contractor written program.

2. *Work and Testing of Electrical Systems*

- a. All electrical circuits are to be considered as live (energized) until positively proven dead (de-energized). To check a circuit to see if it is energized, a suitable indicating device shall be used. Intentionally taking a shock from any voltage shall never be done. The contractor shall ensure that any employee who receives an electrical shock to report to qualified medical professionals for a precautionary evaluation. An electrical shock incident report shall be filled out and a copy shall be forwarded to the O27 EH&S department.
- b. Before an employee is permitted to work on or near an electrical circuit, the contractor shall ensure the circuit is de-energized, and that the individual who is going to do the work checks the circuit at the point at which the work is to be done to ensure that it is actually de-energized.
- c. The contractor shall also ensure, before an employee is permitted to work on an electrical circuit, that the switch, circuit breaker, fuse holder, etc. is identified and secured. For shipboard systems, the unit shall be tagged out in accordance with NNS Procedure QAI 604.1. For non-shipboard systems, the unit shall be locked and tagged as required elsewhere in this Manual. The red tags shall not be removed nor the circuit energized until the work on the circuit has been completed.
- d. The contractor shall ensure that contractor employees, when testing a circuit, always:

- (1) Ensure that voltage and current measuring instruments with proper cat rating are in good working condition prior to commencing work/testing,
 - (2) Ensure that removable test leads on portable meters are securely connected to the meter when in use,
 - (3) First check the testing device on a known live circuit to ensure that the tester is in proper working order,
 - (4) Next, test the “live” side of the circuit,
 - (5) Then test the “load” side with the same device,
 - (6) Then retest the live side,
 - (7) Finally, retest the testing device on a known live circuit.
- e. The contractor shall ensure work/testing is not performed on energized electrical circuits unless it is absolutely essential to ships power plant operations or job completion and it cannot be accomplished by other means. In such cases, the employee’s immediate supervisor must determine, on a daily basis that working on that specific energized electrical circuit is authorized, and must obtain necessary approvals from the general foreman, test supervisor, commanding officer, etc. Furthermore, the supervisor, on a daily basis, must ensure that conditions in the work area are adequate to allow working on energized electrical circuits, and that adequate personal protective equipment is provided and used.

3. ***Live Circuits/Equipment with voltages up to 600V AC/600V DC.***

- a. The requirements of this section do not apply to safety checks performed to verify that the system or component has been properly de-energized prior to changing light bulbs.
- b. Prior to assigning any employee to work or test energized circuits or equipment, the contractor shall ensure that the employee has:
 - (1) attended an electrical safety training class,
 - (2) signed a statement to the effect that he/she understands requirements of this training program,
 - (3) passed a written examination based on the elements of this training, and
 - (4) been certified by his employer to be competent and thoroughly familiar with the hazards of working/testing energized circuits.

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- c. The contractor shall ensure this training class educates the worker in the following skills:
- (1) An understanding of the general requirements for work or testing on energized circuits,
 - (2) An understanding of NNS lockout, tagout and red tag procedures,
 - (3) The ability to identify the exposed energized parts in any open type switchboard/panel,
 - (4) The ability to identify the exposed energized parts in safety switches and lighting or power panels,
 - (5) The ability to properly use a voltage tester to determine presence and magnitude of voltage,
 - (6) The ability to demonstrate or explain the proper use of rubber gloves and blankets, and
 - (7) The ability to visually check rubber blankets and gloves for holes or contamination.
 - (8) The ability to demonstrate the proper level and use of special precautionary techniques to include appropriate arc flash personal protective equipment and insulated tools and test equipment as referenced in NFPA70E.
- d. The contractor shall ensure that the employee being examined and the instructor who gave the examination sign the examination. The contractor shall provide documentation of this training to the NNS Contractor Coordinator upon request.
- e. When removing or replacing fuses, the contractor shall ensure that fuses are removed or replaced only when the circuit is completely de-energized unless the circuit must remain energized for ship's power plant operations, testing, personnel safety, etc.. The contractor shall also ensure:
- (1) When it is absolutely necessary to remove or replace fuses in an electrical circuit with the line terminals energized, the employee only does so under a no-load condition,
 - (2) After the replacement of the fuse(s), the cover is closed and secured over the fuse before energizing the circuit, and
 - (3) When fuses are removed from de-energized electrical equipment, the fuse holder carriages (blown fuse indicating type) are also removed and

the open receptacle taped over. (With fuse carriages installed, a voltage is still supplied to equipment through the brown-fuse indicator circuit.)

- f. When testing a circuit requires periodic de-energizing and re-energizing of the circuit, the contractor shall ensure that caution tag(s), under the direct control of the individual doing the testing or adjusting, are hung on the breaker(s), fuse holder(s), disconnect(s), etc., that control the circuit, and such tag(s) etc.
- g. With respect to work areas, the contractor shall ensure that ample illumination is available for measurement, adjustment, or trouble-shooting, and that the work site is free of unusual hazards (e.g. water on the deck, conditions that could cause loss of balance or crowding, etc.). Every care shall be taken to insulate personnel from ground. Exposed energized buss-bars, within 3 feet of any work area, shall be insulated with rubber blankets, and the worker(s) shall be insulated from ground by rubber matting covering the deck and rubber blankets covering energized components. The insulating material shall be free of contamination (chemicals, metal, cuts, etc.) that may impair the dielectric properties of the material. When working in a congested area, the area shall be posted "Danger — Do Not Enter — Work/Testing of Energized Circuits in progress."
- h. With respect to tools and equipment, the contractor shall ensure work benches are maintained uncluttered when testing energized electrical equipment, and handles of all tools used for working or testing or adjusting energized electrical or electronic circuits shall be insulated or non-conducting.
- i. With respect to personal protective equipment, the contractor shall ensure their employees who routinely work/test electrical/electronic circuits are assigned hard hats approved for electrical work. Other safety equipment such as rubber gloves, insulating blankets, etc. shall be available and used as required by the job, and rubber personal protective equipment shall conform to American National Standards Institute requirements.
- j. With respect to work practices, the contractor shall ensure personnel remove any watch, ring, chain, metal, or loose clothing which might contact or throw a body part into contact with live parts. Employees' clothing and shoes shall be dry or they shall wear special rain gear and boots (this does not preclude normal body perspiration). Work shall not commence until defined hazards have been removed. Employees shall visually inspect rubber-molded plugs immediately prior to each use. Employees shall inspect rubber-molded power and lighting streamers prior to disconnecting, and the circuit shall be de-energized at a point ahead of the plug prior to disconnecting the plug if damage is found. Employees shall use only one hand to do the work, in so far as practical, and shall wear rubber gloves on both hands, or, as a minimum, on the hand used for handling tools.

- k. Contractors shall ensure that their employees do not work on energized power distribution systems 600 VOLTS or greater at NNS.
- l. Contractors shall ensure that their personnel who connect or disconnect equipment on the secondary side of welding systems de-energize circuits before making or breaking connections whenever possible. When it is not possible to de-energize the system, they shall use insulated tools and wear gloves before making or breaking connections or replacing fuses. Furthermore, contractors shall ensure that their personnel make no splices in energized temporary services, visually inspect all primary power plugs immediately prior to each use, and ensure that all equipment is in good working condition prior to energizing the secondary side.

**Newport News Shipbuilding
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Excavations

EXCAVATIONS

1. *Hazard*

There are many hazardous energy sources located under the ground at various locations at Newport News Shipbuilding. Examples of such energy sources include electricity, steam, radiological concerns, compressed air and other gases. Other materials and equipment are located under the ground, which if disturbed could cause significant expense, and down time for both the contractor and NNS. Because of the magnitude of NNS operations, the potential for such personal injury and/or plant damage is very great.

2. *Regulations and NNS References*

- a. OSHA requires an employer to ascertain by appropriate means the nature and location of any energized circuits in the area before excavation, etc. work is begun. See 29 CFR 1926.416(a). It is the intent of NNS to require that such information is provided to contractors. By OSHA policy, it is the responsibility of each contractor whose employees may be exposed to these type hazards to ensure that such information is obtained and maintained current and accurate for the duration of any of this type work.
- b. The requirements listed here are taken from NNS Procedure F-1004, *Intrusive Earthwork on Newport News Shipbuilding Property*, which is the primary NNS reference. These requirements will be updated as necessary when this primary reference is changed.

3. *Requirements*

- a. Any contractor who may be involved with any of the following activities shall not proceed until the nature of possible underground utilities, etc. is determined:
 - 1) Excavation,
 - 2) Digging,
 - 3) Auguring (such as soil boring and installing trailer storm anchors),
 - 4) Driving (such as installing electrical ground rods or foundation piling).
- b. Contractors whose personnel may be exposed to these type hazards shall take the following steps:

- 1) Contact the appropriate Contractor Coordinator to secure an excavation permit (see Appendix G, *Facilities Excavation Permit*).
 - 2) Mark or map the area to identify each location to be disturbed.
 - 3) Not start operations until the permit is secured and posted at the site.
 - 4) Cease or not start operations if, in the judgment of the contractor, the excavation permit is inadequate or incomplete.
 - 5) Ensure that the permit is reissued at least every 15 days for as long as the excavation operations continue.
 - 6) Stop work and contact the appropriate Contract Coordinator when during the excavation process, insulated underground piping or other unexpected material is encountered.
- c. In some areas of the shipyard, additional controls are required due to the potential presence of asbestos or other hazardous materials in the excavation area. In these cases your Contractor Coordinator will advise you on permissible and prohibited activities. Where necessary, a third party contractor will be utilized to ensure that environmental and industrial hygiene concerns are controlled and/or abated.
- d. Contractors shall follow all requirements of 29CFR 1926 Subpart P. – Excavations.

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Fire Protection

FIRE PROTECTION

1. *General*

- a. Contractors shall comply with the requirements of References below, the requirements of this chapter, and all other local, state and federal regulations.
- b. Each location in the shipyard (ships and land facilities) is covered by a local Emergency Action Plan (EAP). The EAP describes actions to be taken in the event of an emergency. Prior to performing work at the shipyard, contractors must familiarize themselves with the contents and requirements the EAP applicable to their work site. EAPs are available from the shipyard contractor coordinator.
- c. Contractors are required to notify the shipyard of fire-related hazards associated with the contractor's work and what the contractor is doing to address them.
- d. Contractors are required to notify the shipyard of any previously unidentified fire-related hazards that the contractor identifies at the shipyard.

2. *Regulations*

Protect flammables and combustibles from ignition by the following:

- a. Remove combustible and flammable materials from beneath hot work. Remove flammable materials that are stored on a deck below where hot work is being done. Materials that cannot be removed shall be covered with Refrasil[®], sheet metal or other approved material. And a fire watch shall be posted to prevent sparks from igniting combustible material.

Hot workers are permitted to use Department O27 approved unshielded foam padding as ergonomic protection during the performance of hot work.
- b. Do not perform any hot work to a hollow structure unless vent hole(s) are present:
- c. When a construction pre-drilled vent hole is not present in the initial installation and welding of new hollow structures, the welder shall leave a one-inch unwelded area at the final weld connection to act as a vent hole. Once all hot work other than the vent hole has been completed, the welder can proceed to seal and weld the vent hole. The welding of any pre-drilled

vent holes in hollow structures would be accomplished in the same manner (after the completion of all hot work).

- d. Hot work and heat transfer is not permitted to foam filled voids/hollow structures without Marine Chemist permission. Often these voids require the removal of foam materials or the inerting of the space prior to hot work. Partially filled voids resulting from the shrinkage of poured-in-place insulations require inerting and a Chemist Work permit prior to any hot work.

Virginia Class submarines- the backfilling of THF 38 insulated voids with raw resin or equivalent materials changes the nature of the voids to that of solid structure; therefore no inert gas purging can be done and hot work is permitted to these solid structures.

- e. Sealed hollow structures including bits, bilge keels, stanchions, nozzles, rudders, etc. must be tested by the Marine Chemist Office for explosive gases or where applicable, flammable or combustible liquid preservatives prior to any hot work. Hot work must be approved by the Marine Chemist Office.

3. *Reference*

- a. OSHA 29 CFR 1915 “Shipyard Industry Standards”
- b. OSHA 29 CFR 1910 “General Industry Standards”
- c. OSHA 29 CFR 1926 “Occupational Safety and Health Regulations for Construction”
- d. NNS Fire Prevention & Control Manual
- e. NNS Health & Safety Manual
- f. NFPA 306 “Standard for Control of Gas Hazards on Vessels”

4. *Housekeeping*

- a. Contractors shall ensure adequate aisles, passageways, and fire lanes are provided and maintained. Contractors shall ensure that adequate access* to all exits, fire alarm boxes, and fire extinguishing equipment is maintained. Contractors shall ensure that work areas are:

- (1) Kept clear of tools and equipment except those in use,

* Three foot clearance is required in front of the equipment.

- (2) Kept free of debris, and
 - (3) Kept clear of construction materials except that which is either in use or properly stored.
- b. Contractors shall ensure that hoses and electrical conductors are so arranged as to preclude their being pinched. Pinching could result in gas or liquid leaks and the removal of electrical conductor insulation.
 - c. Contractors shall ensure that flammable gas lines are not run in “S” or “J” hooks supporting temporary electrical power lines. Contractors shall also ensure that electrical lines (welding, power, etc.) are not run in "S" or "J" hooks already used for flammable gas lines. These lines are commonly painted yellow to identify them as reserved for gases only, no electrical services allowed.
 - d. Contractors shall ensure that whenever practical, temporary gas manifolds for oxygen, propane, etc. are placed at least 10 feet from temporary electrical junction blocks.
 - e. Contractors shall ensure that packing materials including excelsior, cardboard, and paper are removed promptly from all work areas after unpacking material or equipment. Contractors shall ensure that, whenever practical, material and equipment is uncrated off the ship. If this is not practical, shipping containers and packing materials shall be removed from the ship and disposed of promptly.
 - f. Contractors shall require that each contractor employee maintain a clean and orderly work area. Contractors shall ensure each contractor supervisor is responsible for training their personnel in good housekeeping habits.

5. *Hot Work Precautions*

- a. Protect flammables and combustibles from ignition by the following:
 - (1) Have the flammables and combustibles moved to a safe distance from the work or have them properly shielded and protected against ignition or unplanned damage.
 - (2) Uncovered ordinary combustibles such as paper, cardboard, Styrofoam, plastic cups, etc. must be removed at least 35 feet or greater from unshielded hot work.
 - (3) Removal of ordinary combustible materials is recommended versus simply shielding (directing residues) hot work or covering with fire resistant cloth ordinary combustibles in area where spark, slag, or flame travel could be expected. If the hot work residues are not adequately

shielded and directed away from combustibles and/or coverings allow residues to travel beneath or permit heat transfer, materials can be ignited.

(4) Move the work to a location free from hazards.

- b. Remove combustible and flammable materials from beneath hot work. Remove flammable materials that are stored on a deck below where hot work is being done. Materials that cannot be removed shall be covered with Refrasil[®], sheet metal or other approved material. And a fire watch shall be posted to prevent sparks from igniting combustible material.

6. *Welding, Burning and Heating*

- a. All work shall be performed in accordance with References.

Note: Any reference to sparks shall be understood to include other ignition sources such as slag, molten metal or heated metal surfaces.

- b. Contractors shall ensure each of their supervisors holds each of their employees who perform welding, burning, grinding, heating, and brazing operations accountable for the fire safety of the work environment.

(1) The operator and his fire watch shall inspect the area and the opposite side of bulkheads, decks, or overheads upon which he will be working.

(2) He and his fire watch shall assure falling or penetrating sparks and heated surfaces of the material being worked on will not cause injury, damage or fire.

- c. The operator shall conduct welding, burning, grinding, heating and brazing operations so that sparks do not come in contact with combustible or flammable materials such as trash, shavings, paint, etc. He shall avoid welding/burning and grinding so that sparks do not get into any cracks in or behind combustible or flammable material as the sparks may smolder and start a fire that may not blaze up until sometime later.
- d. The operator shall not permit sparks to fall into machinery pits where oil or grease is likely to be. He shall not permit sparks to fall on wooden floors in buildings, and shall not permit sparks to fall or roll into a trunk or duct that may contain flammable materials or which may conduct the sparks into another compartment containing flammable materials.
- e. The operator or his fire watch shall remove combustible or damageable materials from beneath or above hot work. He shall cover those materials that cannot be moved with Refrasil[®], sheet metal, or other approved

- material, and post a fire watch to see that sparks do not ignite combustible materials.
- f. The contractor shall ensure that paint is removed in way of hot work in all interior spaces prior to welding, burning, arcing, etc., and in accordance with OSHA regulations. Additionally, paint must be removed on the opposite side of the surface where there is potential for exposure to personnel due to off gassing. Paint shall also be removed in exterior areas unless specific procedures are addressed in the contractor's hot work program to ensure protection of NNS and contractor personnel.
- (1) Prior to removing paint (or doing any hot work affecting paint) the metals content of the paint must be determined, specifically for lead and chromium, and any other metals as necessary to assure compliance with OSHA regulations,. Sampling must be done by appropriately trained personnel and analyzed by a laboratory licensed and/or accredited to do so.
 - (2) NNS will not conduct this paint sampling for contractors; however, NNS may provide third party sampling and analysis results for facilities work.
- g. The operator shall assure that insulation and connections are maintained in good condition on all temporary light wiring and welding cables. He shall check insulators on electrode holders when welding in the vicinity of materials readily damaged by coming in contact with a bare area of the holder.
- h. The torch operator shall also:
- (1) Have hose clamps in his/her possession when performing hot work.
 - (2) Use only portable lights that have approved guards.
 - (3) Perform a 60-second drop test (safety test) on each torch at the beginning of each day the torch will be used.
 - (4) Hook up and unhook torches on open decks or in open spaces only.
 - (5) Require a "Tank Watch" with hose clamps for torch operations in confined spaces. Tank watch shall be stationed at the entrance to a confined space.
 - (6) Ensure that torch lines with mechanical connections and "Y's" are not allowed below decks.
- i. Specific Requirements for Torch Equipment.

- (1) If a leaking or otherwise unsafe cylinder is discovered, immediately remove from service, place in an isolated area until proper disposal can be arranged.
 - (a) All contractor cylinders shall be identified with a label or tag containing a minimum of company name and emergency telephone number.
- (2) Maintain Acetylene and Propane cylinders upright at all times.
- (3) Close cylinder or manifold valves when they are not in use. Keep caps on manifolds and cylinders when not in use.
- (4) Do not use oil or grease on cylinder or manifold valves, regulators, hoses or torches and do not allow them to come in contact with any oily or greasy substance.
- (5) When regulators are used on high-pressure cylinders, release the regulator adjusting screw each time the cylinder valve is closed.
- (6) Connect regulators firmly with a torch operator's wrench. Do not use pliers or pipe wrenches. (Standard oxygen connections have right-hand threads and fuel connections have left-hand threads.)
- (7) Frequently inspect all connection seats, fittings and tips. If warped, bruised or damaged, do not use. Do not attempt to improve the performance of or modify any of these items.
- (8) Handle torches, regulators and tips carefully and store them in a clean dry place safe from damage when not in use.
- (9) Do not use a check valve in the place of a regulator.
- (10) Do not let hoses become kinked. Do not allow heavy objects to be dropped, laid on, rolled or dragged across hoses. Do not drag hose across sharp objects or ragged edges that could damage it. Do not leave torch or hose lying where it may be damaged by any means.
- (11) Keep hoses away from hot metal. Keep the torch flame, sparks, and molten metal and hot slag away from hose, regulators or cylinders. Do not place cylinders in a location where they may become heated above 125°F.
- (12) Use only hoses that have been specially manufactured for the particular gasses carried: red for fuel gas, green for oxygen. Do not use hose smaller than the standard $5/16$ -inch hose size.
- (13) Do not tape oxygen and fuel gas lines together for use aboard ship.

- (14) Do not handle a torch roughly or use it as a hammer, hook or crowbar.
 - (15) Do not overheat the tip by holding it too close to work or by allowing it to dip into molten slag or by allowing slag to run over it.
 - (16) Do not strain the torch or hose by pulling the torch further than it will go. Move the work closer or get a longer hose or closer manifold or gas bottle.
 - (17) Identify hoses at the supply end with a label or tag containing company name, telephone number and employee name.
 - (18) Fuel and oxygen gas cylinders and distribution manifold systems can not be located in enclosed or confined spaces. Maintain them in open areas.
 - (19) Obtain a cold work permit approval prior to bringing oxygen and fuel gas cylinders or other supply systems aboard ship.
 - (20) Ensure X18 approval prior to using NNS fuel and oxygen gas supply systems.
- j. Specific Requirements for Starting Up Torch Operations.
- (1) Examine hose to see that it is in good condition, and that hose and torch connections are clean and free from grease, oil or bruises.
 - (2) Connect torch to hose; set up the connecting nuts firmly with the torch operator's wrench and carefully avoid crossing the threads. See that the torch valves are properly closed. Place the torch in a safe place where it will not be disturbed or damaged.
 - (3) Proceed to the manifold or cylinder and again examine hose. See that it is in good condition and that the connections are clean and free from grease, oil or bruises. Examine regulators, to ensure their connections are in good condition and clean.
 - (4) Before attaching regulators to high-pressure cylinders, fully release adjusting screws by turning them out (counter-clockwise).
 - (5) Open oxygen valve slightly to blow out any dirt or debris. Close valve quickly. Attach oxygen regulator firmly.
 - (6) Open fuel valve slightly to blow out any dirt or debris. Close valve quickly. Attach fuel gas regulator firmly.

- (7) Open oxygen cylinder or manifold valve slowly, standing to the side of the regulator. Open the valve fully.
 - (8) Connect the hoses to the regulators firmly, careful to avoid cross-threading.
 - (9) At the beginning of each shift, perform a Safety Check or 60-Second Drop Test must be conducted. — Before lighting the torch, but after all connections have been safely made, open the regulators for a short time to permit complete filling of the hoses. Then close the supply valve and watch the gauges for 60 seconds. Any drop in pressure indicates a leak in the torch, hose or regulator. Do not turn on the supply valve again until the leak has been repaired. Torch must not have plug or blank installed during initial safety check, 60- second drop test.
 - (10) Blow out the hoses one at a time in an open area — never in a confined space.
 - (11) Starting Up:
 - (a) Install tip in torch.
 - (b) Open the gas torch valve, light it with a spark lighter and adjust the flame to where it is approximately $\frac{1}{8}$ inch from the tip.
 - (c) With the gas flame burning slowly, turn on the oxygen and adjust the flame.
- k. Specific Requirements for Shutting Down Torch Operations
- (1) Never have torch and lines unattended within a confined space.
 - (2) Brief shutdown (less than 15 minutes):
 - (a) Close the fuel gas torch valve, then immediately close the oxygen torch valve.
 - (b) Do not break the connections. Arrange the hose and torch in an orderly fashion in a safe place where they will not be damaged or disturbed.
 - (c) Remove tip from torch and install plug.
 - (3) Starting up torch after a brief shutdown:
 - (a) Install tip in torch.

- (b) Open the gas torch valve, light it with a spark lighter and adjust the flame to where it is approximately $\frac{1}{8}$ inch from the tip.
 - (c) With the gas flame burning slowly, turn on the oxygen and adjust the flame.
- (4) Shutting down for lunch break or any period for 15 minutes or longer:
- (a) Close the fuel gas torch valve, then immediately close the oxygen torch valve.
 - (b) Remove tip from torch and install plug or blank.
 - (c) Arrange the hose and torch in an orderly fashion in a safe place where they will not be damaged or disturbed within an enclosed or open area.
 - (d) Close the fuel gas cylinder or manifold valve, and then close the oxygen cylinder or manifold valve.
 - (e) Pull the torch and line into an open area or disconnect the lines from the manifold. Crack gas connections at supply and bleed off gas until gauge reads zero psig. If the lines are completely disconnected, ensure that they are connected to the manifold connection by a lanyard.
 - (f) If they are pulled back to open area, note and remember the gauge pressures on the fuel and oxygen regulators.
- (5) Starting up after a break of 15 minutes or longer:
- (a) Reconnect the lines if they had been disconnected from the manifold.
 - (b) Turn-on the gases for a short period of time then turn them off.
 - (c) Observe the gauge pressures on the fuel and oxygen regulators for 60 seconds.
 - (d) If there is a significant loss of pressure, do not use the equipment until the cause of the pressure loss has been found and corrected.
 - (e) If there is no significant loss of pressure:
 - (i) Open the fuel gas cylinder or manifold valve then, close the oxygen cylinder or manifold valve.
 - (ii) Install tip in torch.

- (iii) Open the gas torch valve, light it with a spark lighter and adjust the flame to where it is approximately $\frac{1}{8}$ inch from the tip.
 - (iv) With the gas flame burning, slowly turn on the oxygen and adjust the flame.
- (6) Shutting down for an extended period (end of shift):
- (a) Close the fuel gas torch valve, then immediately close the oxygen torch valve.
 - (b) Carry torch and hose to an open area. Arrange the hose and torch in an orderly fashion in a safe place where they will not be damaged or disturbed.
 - (c) Close the fuel gas cylinder or manifold valve, and then close the oxygen cylinder or manifold valve.
 - (d) Drain the fuel gas hose by disconnecting it from the regulator. Release the adjusting screw on the fuel gas regulator by turning it out (counter-clockwise). Disconnect the regulator from the cylinder or manifold. Replace the protective cap on the cylinder or manifold.
 - (e) Drain the oxygen hose by disconnecting it from the regulator. Release the adjusting screw on the oxygen regulator by turning it out (counter-clockwise). Disconnect the regulator from the cylinder or manifold. Replace the protective cap on the cylinder or manifold.

7. *Hot Work Permits*

- a. Contractors shall ensure that hot work permits are obtained for all hot work performed on all ship repair operations, all overhaul and nuclear refueling, for new construction, and all land based facility related jobs in accordance with requirements in the Fire Prevention and Control Manual (FP&C).
- b. **Ship and other maritime vessels-** Prior to submitting a Hot Work permit request for NNS approval, **shipboard** contractors shall ensure that any hot work and or heat transfer is not permitted for the following spaces without the written approval and certification of a NFPA Certified Marine Chemist:
 - (1) Anywhere on a tank vessel,

- (2) In or on the boundaries of spaces that contain or ever contained substances which are combustible, flammable, toxic, corrosive, irritant, or combustion supportive substances. Some examples:
 - (a) fuel oil or lube oil tanks, lines, pumps, purifiers, heater coils etc.,
 - (b) oily water or waste oil tanks,
 - (c) JP-5 and gasoline tanks,
 - (d) torpedo rooms and ammunition magazines,
 - (e) preservative filled voids such as bilge keels,
 - (f) AFFF lines that have not been flushed and blown out within a day of hot work,
 - (g) chemical holding tanks, lines, pumps, etc.,
 - (h) refrigeration systems including ammonia cooling systems,
 - (i) sewage systems including CHT tanks,
 - (j) battery compartments and paint lockers,
 - (k) flammable gas and oxygen pipe lines.
 - (3) In spaces aboard barges and ships that are immediately adjacent to spaces or fuel tanks that contain or have contained combustible or flammable liquids or gases.
 - (4) In machinery spaces such as engine rooms, boiler rooms, shaft alley, pump rooms, and steering gear rooms where there are oily residues.
- c. **Land and facility operations** - Prior to submitting a Hot Work permit request for NNS approval, contractors shall obtain written approvals and certifications of a NFPA Certified Marine Chemist:
- (1) When heat may be transferred by the hot work to the boundaries of spaces and hollow structures, including pipe lines, that contain or ever contained substances which are combustible, flammable, toxic, corrosive, irritant, or combustion supportive substances, such as:
 - (a) fuel oil or lube oil tanks, lines, pumps, purifiers, heater coils etc.,
 - (b) oily water or waste oil tanks,

- (c) jet fuel and gasoline storage tanks,
 - (d) waste oil railcars or tank trucks,
 - (e) chemical holding tanks, lines, pumps, etc.,
 - (f) sewage lines (not applicable to simple toilet and drain work),
 - (g) chemical holding tanks, and
 - (h) flammable gas and oxygen pipe lines.
- (2) Spaces that are immediately adjacent to spaces that contain or have contained combustible or flammable liquids and gases.
- (a) Exception: No Certified Marine Chemist Certificate is required when location of hot work is greater than one foot from and will not transfer heat to boundaries of spaces, tanks and hollow structures containing corrosive or irritant substances.
 - (b) Exception: No Certified Marine Chemist Certificate is required when landside location of hot work is greater than 25 feet from the boundary of spaces or tanks containing or having contained flammable liquids, gases or combustible liquids with a flashpoint less than 150 degrees Fahrenheit.
 - (c) Exception: No Certified Marine Chemist Certificate is required when landside location of hot work is greater than 3 feet from and no heat will be transferred within 1 foot of the boundary of tank or other spaces containing combustible liquids with a flash point of 150 degrees Fahrenheit or greater.
 - (d) Ensure that a shipyard competent person has approved all hot work as per 29 CFR 1915 Subpart B unless this chapter specifically requires a NFPA Certified Marine Chemist approval.
- d. A copy of the Marine Chemist Certificate must be provided each day to the Marine Chemist Office located in Building 73, between dry docks 1 and 2 west end. The Marine Chemist Office fax number is 688-1639.
- e. Requirements for Hot Work Permits may be increased or relaxed by the Project/Construction Manager via memorandum to the appropriate department heads, or by the Marine Chemist. The Manager of the X18 Welders Department (or his designated representative on each contract) or the O43 Facilities Department, or the NNS Marine Chemist may temporarily invoke stricter requirements for Hot Work Permits as job conditions vary. At

no time can any representative of NNS relieve the contractor of any applicable Federal, State, or local regulations or laws.

- f. Contractors shall ensure that requests for Hot Work Permits are directed to the Hot/Cold Work Coordinator in the X18 Welders Department or the O43 Maintenance Department. (All X18 Personnel performing as production foremen, Ship Fire Safety Administrators and persons designated as hot/cold work coordinators are authorized to issue Hot Work Permits.)
- g. Department O43 designates qualified personnel to approve land based facility hot/cold work permits. Contractors shall ensure that prior to completing a Hot Work Permit; the requesting contractor supervisor personally inspects the space or area involved to assure that safe working conditions exist, and that the appropriate precautionary measures have been taken.
- h. The X18 Welders or O43 Maintenance Department is responsible for issuing Hot Work Permits and ensuring by reviewing the permit that personnel performing hot work provide fire watches as required.
- i. On off-shifts and weekends, when X18 or O43 supervision, a Ship Fire Safety Administrator or a designated hot/cold work coordinator is not available, it is permissible for the Construction Projects to issue necessary Hot Work Permits.
- j. Contractors shall ensure that smoking is not permitted in any area where hot work is prohibited.

8. *Cold Work Permits*

- a. Contractors shall obtain a Cold Work Permit from the NNS X18 Welders Department or O43 Facilities Department prior to using flammable or combustible liquids or gases, or combustible materials (such as wood or cardboard boxes) on ship construction, overhaul, and repair.
- b. The requirements for Cold Work Permits may be increased or relaxed by the cognizant Project Construction Manager via memorandum to the appropriate Department Heads.
- c. The Manager of the X18 Welders Department (or his designated representative on each contract) or O43 Facilities Department may temporarily invoke stricter requirements for Cold Work Permits as job conditions vary.
- d. In areas not specifically required to have Cold Work Permits, such as off-ship sites and buildings, it will be the responsibility of the immediate

supervisor, and the controlling department, to ensure cold work is performed in a safe and responsible manner.

9. *Fire Watches*

- a. Contractors in all areas of the Shipyard (shops, platens, offices, etc.) and involved in all aspects of ship repair (commercial and naval) and new construction shall ensure that fire watches are assigned to monitor hot work operations to prevent fires.
- b. A fire watch is required:
 - (1) Where the hot work requires fire watch in accordance with the requirements of 29 CFR 1915, 29 CFR 1910 and 29 CFR 1926,
 - (2) Where flammable or combustible liquids or other materials adjacent to the hot work operation cannot be removed from exposure,
 - (3) Any time hot slag or sparks will fall or land in an area out of view of the employee performing hot work (i.e., through a deck opening or partition to a lower level or any area out of view of the hot work operator),
 - (4) When flammable or combustible materials near the opposite side of metal partitions, walls, ceilings, or roofs may be ignited by heat conducted or radiated from the hot work operation,
 - (5) When damage to equipment or injury to personnel may result from the hot work being performed,
 - (6) Where, in the opinion of the contractor-employer-welding-supervisor, a fire may result from the hot work operation,
 - (7) When NNS Marine Chemist or other management personnel require a fire watch,
 - (8) When required by the NNS Hot Work Permit.
- c. Contractors shall ensure each supervisor responsible for hot work provides fire watches as necessary, and has an adequate number of personnel trained as fire watches. Contractors shall also ensure each contractor employee performing hot work is responsible for taking actions necessary to prevent fires whether a fire watch is provided or not.
- d. A single fire watch may be considered sufficient to observe more than one hot work operation provided the fire watch's assigned operations are in unobstructed view and the area is cleared of combustible materials.

- e. Contractors shall ensure their fire watches perform the following duties and responsibilities:
- (1) Assure no damage will be caused by hot work being performed under his surveillance.
 - (2) Act immediately to report fire and make every effort to extinguish fire using the equipment provided and additional equipment if needed.
 - (3) Assure access to and check both sides of intersecting bulkheads/walls, compartments, and/or decks/floors for hazardous conditions.
 - (4) Determine that there are no signs or posted cold work permits prohibiting hot work in the area before permitting hot work to commence.
 - (5) Determine exact location of, and assure accessibility to, fire fighting equipment applicable to the types of fires that may be encountered, and telephones and fire alarms for reporting fires.
 - (6) Locate emergency exits from the area and make certain they are kept free of obstructions.
 - (7) Protect combustible or damageable materials that cannot be moved, by covering them with noncombustible material if hot work must be conducted in the vicinity.
 - (8) Protect all painted or other finished structures or equipment by using Refrasil[®], fire screens, metal shielding, or reinforced protective vinyl covering (Herculite[®] or Facilon[®]).
 - (9) Report the need for additional clean up or ventilation in the area to the cognizant supervisor.
 - (10) Locate manifolds and shut-off valves for all gases that will be used during the hot work operations under his surveillance.
 - (11) Understand completely all signals to be used between fire watch and hot work personnel to ensure immediate cessation of hot work, should it become necessary.
 - (12) Ensure all precautionary measures are effective.
 - (13) Be alert for changing conditions within the area and cease hot work if any adverse conditions arise.
 - (14) Be alert for general alarm signals applicable to the cessation of hot work operation.

- (15) Make certain that hot work operators observe “torch shut-down” regulations. (See pages 7-8.)
 - (16) Ensure no hot spots or smoldering material remains in the assigned work area upon completion/cessation of hot work for at least 30 minutes.
 - (17) Thoroughly inspect all areas of the work site **before leaving the area.**
- f. At the outbreak of a fire, fire watches shall attempt to extinguish the fire if it is within the capacity of the equipment available. Otherwise they shall:
- (1) Sound the emergency fire alarm,
 - (2) Report the fire to the Casualty Control Station (if aboard ship), or report the fire by telephone to 0-2222 or *911 (or 380-2222 for cell phones) and
 - (3) Direct or provide for direction of Fire Department personnel to the location of the fire, and assist as directed.
- g. Contractors shall ensure fire watches have the appropriate extinguisher.
- h. Contractors shall ensure that personnel designated as fire watch be trained.
- i. All fires must be reported.
- (1) NNS Form 4700, *Department Fire Report*, shall be forwarded to the Fire Prevention Office whether the Fire Department was requested or not, and no later than 0900 hours the next working day following the fire.
 - (2) The supervisor or foreman in charge of the personnel causing the fire shall submit this report. Where questions occur regarding the responsibility for the fire, the person in charge of the area shall submit this report. Request form from your Contractor Coordinator or in their absence the Fire Prevention Office (Department O15).

10. *Flammable and Combustible Liquids and Gases*

- a. Contractors shall ensure locally used dispensing containers (e.g., a can filled from a 55-gallon drum) are safe for the intended use and are marked or labeled to provide sufficient safety precautions for personnel who may be exposed to the contents. Contractors shall ensure the NNS Fire Marshal approves liquid-fueled portable personnel heating devices prior to use.
- b. Contractors shall ensure all safety cans have the contents identified by means of a metal tag attached to the handle. Contractors shall ensure that

safety cans are metal, painted red and equipped with a spring-loaded self-closing lid on the pour spout, the spout is provided with a flash-arrestor screen, and restricted to transportation, storage, or use of flammable or combustible liquids.

- c. Contractors shall ensure:
 - (1) Flammable materials are separated from other materials.
 - (2) Temperatures of flammable liquids do not exceed 100° F.
 - (3) Flammable materials are stored:
 - (a) Away from sources of fire and heat,
 - (b) Away from heavily traveled areas, and
 - (c) Out of the direct rays of the sun.
 - (4) Signs are installed to identify these storage areas.
- d. Contractors shall ensure employees handling flammable and combustible material are trained on proper handling and storage of hazardous materials. The training must cover topics such as adequate ventilation and dispensing of these liquids from one can to another. All flammable and combustible liquids, excluding paints and paint remover for brush application, shall be contained in safety cans when stored in quantities of five gallons or less.
- e. Flammable and combustible liquids shall be stored in the manufacturer's original container until opened and then transferred to (excluding paints) safety cans or safety containers. The original container shall be promptly removed from the building by the using employer and shall be destroyed or cleaned prior to being used for other materials. (Liquids with a flash point of 200° F or higher do not require special storage requirements, but care must be taken to protect them from hot work.)
- f. Drums used to store flammable or combustible liquids shall be equipped with an approved bung vent and a self-closing faucet. An approved drip-catch can must be provided to collect small quantity drips from the faucet. Drums containing flammable liquids must be electrically grounded when the liquid is being dispensed. They shall also be equipped with a bonding strap and clamp. These shall be used to electrically interconnect the drum and the metal container into which liquid is dispensed. (Drums containing combustible liquids do not require bonding or grounding.)
- g. Metal drum storage of flammable and combustible liquids shall be located outside of buildings whenever possible. Inside storage of flammable or

combustible liquids is permitted only in sprinklered buildings and is subject to approval by the NNS Safety Department.

- h. Stowage of flammable liquids must be located sufficiently remote from shipways or docks to ensure that fire in these stowage areas could not spread to ships under construction/repair/overhaul. Tank trucks or trailer trucks containing flammable liquids, or combustible liquids with a flash point of 200° F or less, are not allowed on piers on first shift, Monday through Friday. Flammable/combustible liquids shall not be stored on piers.
- i. Containers used as remote “gas tanks” for gasoline engines and connected to the engine with hoses shall be metal (outboard motor type), painted red, and labeled “Gasoline - Flammable.” Refueling operations shall be conducted using cold work permits, adequate ventilation and “No Hot Work” signs posted in the vicinity of refueling operations. After refueling, the containers and signs shall be immediately removed from the ship or dry dock. “No Hot Work” signs shall be posted on equipment (other than registered over-the-road vehicles) using gasoline onboard ships and in dry docks. Gasoline shall not be stored onboard ships or in dry docks. At the completion of refueling activities, the transfer/storage containers shall be immediately removed from ships and dry docks.
- j. Flammable liquids shall be under the surveillance of the user at all times or shall be removed from the ship. Flammable liquids (other than hand carried adhesives and conventional paints and paint remover for brush application) shall not be transported on ship in loose top or open containers. The NNS Fire Department or EH&S Department must approve alternative containers (other than those approved by this procedure) prior to their being used.
- k. Contractors shall ensure that, if an approved fire resistant field paint shop with self-contained fire extinguishing system is installed on surface ships in an open deck area (remote from other assembled flammable liquids such as diesel oil), the field shop shall be manned by an experienced paint shopkeeper at all times when it is open for service. The field shop shall be locked when the assigned shopkeeper is not in attendance. The issue, turn-in, and storage of paint products shall be limited to one day’s supply of conventional paints currently being applied. Paint and paint products with a flash point below 80° F, such as adhesives, solvents, cleaners, thinners, and other liquids shall be turned in to the paint field shop for short periods of time; e.g., during lunch period or for off-loading at the end of a shift. Notify the X18 Welders Department with the locations of these shops are onboard ship. If these requirements cannot be met, Contractors shall ensure that field shops are not used for storage or issue.

Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual

Hazardous Energy Control

HAZARDOUS ENERGY CONTROL

1. *Hazard*

- a. Potentially hazardous energy is used continuously at NNS to perform various tasks and operate a variety of equipment. If this energy is not channeled and controlled, and personnel come in contact with this energy, the results can be devastating. Examples of such hazardous energy include all sources of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy. Many items of equipment or systems will have multiple energy sources.
- b. During the NNS pre-approval process (see General Information), each contractor whose personnel may be exposed to hazardous energy must provide to the NNS EH&S Department a copy of their written Hazardous Energy Control Program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to their program on an annual basis to NNS.

2. *OSHA Regulations and NNS References*

- a. Where there is potential personnel exposure to hazardous energy, OSHA requires each employer to control this energy to protect employees' health and safety. For non-shipboard operations, personnel at NNS performing facilities work or construction operations must comply with 29 CFR 1910.147 "The Control of Hazardous Energy (lockout/tagout).
- b. At NNS, Standard Shipyard Procedure Y-1078, *Control of Hazardous Energy*, governs the control of hazardous energy in non-shipboard environments. This procedure, Y-1078, is the primary reference for the requirements listed below. These requirements will be updated as necessary when this primary reference is changed.
- c. For shipboard operations, there is no particular OSHA regulation, except for a few regulations that apply to very specific operations, such as boilers (29 CFR 1915.162), piping systems (29 CFR 1915.163), propulsion machinery (29 CFR 1915.164), and deck machinery (29 CFR 1915.165).
- d. At NNS, Quality Assurance Instruction 604.1 *Tagout of Systems/Components* governs the control of hazardous energy in shipboard environments. This procedure is the primary NNS reference for the requirements listed below. These requirements will be updated as necessary when this primary reference is changed.

3. *Requirements for Tags and Training*

- a. Contractors shall ensure their employees understand and respect the NNS QAI 604.1 Red Danger tag (NN-54-18), Y-1078 System / Personal Service Tag (54-18NN 7039 (with laminated cover) and NN 7040), Personal Service, System and High voltage locks, and will NEVER:
 - (1) Operate equipment or change controls which are secured with any of the above items, or
 - (2) Remove any of the above items without proper authorization (Note: If someone does not know what authorization is required, then they are not authorized)!
- b. Only personnel who have been trained by their employer to understand applicable requirements of their company procedure and authorized to install/remove locks and/or tags shall be allowed to install/remove red tags and/or lockout/tagout equipment.

4. *Requirements for Non-Shipboard Hazardous Energy Control*

- a. NNS Contractors (and subcontractors) performing non-shipboard production work at NNS, including both facilities work and construction operations, shall implement their own lockout/tagout procedure that complies with 29 CFR 1910.147.
- b. Locks and tags are required and shall meet the following contractor-specific requirements.
 - (1) Contractors shall use the NNS System/Personal Service tag and their company tag that is equivalent to the Newport News' System / Personal Service tag. Contractors shall obtain NNS tags from their Contractor Coordinator. If using a tag for less than two shifts, use NNS tag number NN 7040 (non-laminated). A laminated tag, NN 7039, shall be used if the tag will be in place for more than two shifts.
 - (2) A singularly identifiable lock shall be used when locking and tagging out NNS equipment, machinery, or systems. Contractors shall use a red American lock model A1105RED (A1106RED and A1107 RED are also acceptable) when applying a Personal Service tag and lock or a blue American lock model A1105BLU (A1106BLU and A1107BLU are also acceptable) when applying a System tag.
- c. The following provides instructions for completing a NNS tag. The information as applicable shall be legibly written with a black Sharpie® (medium, fine point) pen on each tag before it is attached.

- (1) Contractor Name/Phone – If applicable, contractors must legibly write their company name and must include a phone number below the block.
- (2) “System Tag”/“Personal Service Tag” - Check either “System Tag” or “Personal Service Tag” as applicable. The tag may only have one block checked.
- (3) Equipment/System - Identify the equipment or system to be locked and tagged. Equipment name and asset number shall be provided. System name and location of lock and tag shall be provided. When a system lockout/tagout is not at a specific location, indicate the nearest physical reference point (column, machine, wall, etc.)
- (4) Electrical – Check the appropriate box if applicable to the lockout/tagout
- (5) Mechanical / Other - Check the appropriate box if applicable to the lockout/tagout.
- (6) Reason for Lockout/Tagout -
- (7) Testing - Check this block when the equipment / system has been locked and tagged to support testing.
- (8) Work in Progress - Check this block when the equipment / system has been locked and tagged to perform service or maintenance
- (9) Out of Service – Check this block when the equipment is to remain out of service
- (10) Not Operational - Check this block when the equipment / system is not operational and creates a hazard to the equipment and/or personal if operated.
- (11) Other - If one of the above categories is not appropriate check this block and provide an explanation for the tag.
- (12) Employee Name/Print – Print employees name in this box
- (13) Date – Provide the date the tag is hung.
- (14) Employee Signature – Provide the employee’s signature in this box
- (15) PERNR – Provide the employee’s personal number in this box
- (16) Supervisor/Print – Print the employee’s supervisor’s name in this box

(17) Dept. – Provide the employee’s department in this box.

*Additional Information - Authorization to remove a System Lock & Tag, may be noted on the back of the tag.

- d. NNS expects contractors to be knowledgeable of the types of hazardous energy sources. Contractors shall identify hazardous energy sources during job planning and ensure that only properly trained and qualified employees perform lockout/tagout.
- e. Contractors shall notify their NNS Contractor Coordinator if assistance is required in identifying and/or de-energizing machinery or equipment.
- f. Contractor Coordinators and contractors shall work jointly and complete form NN 9372 LOTO Coordination Plan (Figure 4) prior to LOTO taking place.
- g. Contractors working on equipment and systems that are out of service, being serviced but currently not being worked, and that if inadvertently energized or moved to a new position could create an employee hazard or potentially damage equipment or company property shall ensure the equipment is properly locked and tagged out using the NNS System/ Personal Service Tag (Figure 1/Marked as a System Tag) and proper contractor tag(s) and lock(s) to control the hazardous energy exposure.
- h. High voltage systems (Above 600 volts) and crane power sources will be de-energized by NNS qualified electricians only. Contractors shall secure the hazardous energy sources after NNS has de-energized the system. Contractors shall verify that the system is de-energized by witnessing the NNS verification of de-energization.
- i. If a contractor’s employee who originally applied the lock(s) and tag(s) is not present to remove the LOTO, then the contractor shall:
 - (1) Follow their lock and tag removal procedures
 - (2) Ensure the individual employee is notified
 - (3) Notify the Contractor Coordinator that the lock and tag has to be removed
 - (4) Complete the “Lock & Tag Removal Form” (NN 9225) (Figure 3), and provide a copy to the Contractor Coordinator and O27

5. *Requirements for Shipboard Work and Energy Control*

a. Responsibilities

- (1) Contractors shall ensure their work is in compliance and not counter to the NNS tagout and work control requirements.
- (2) All work must be in accordance with QAI 604.1 and other quality assurance instructions for work control.
- (3) Request from the Contractor Coordinator to identify and provide the specific work control instructions.
- (4) Where applicable, ensure that additional control measures such as NNS double barrier and or lock out requirements are met prior to any intrusive work on a system or other actions which could affect the safety of the vessel or personnel.

b. Joint Fleet Maintenance Manual (JFMM) COMFLTFORCOMINST 4790.3

- 1) The JFMM Volume IV, Ch. 10 (Work Authorization and Control) provides the procedures for authorization and control of shipboard work.
- 2) Work on ship's systems and components must be properly authorized and controlled in order to ensure rigorous personnel and ship safety standards are met at all times.
- 3) Work on ship's systems and components, regardless of who performs the work, requires formal authorization through the use of a Work Authorization Form (WAF) for the specific work to be accomplished.
- 4) The WAF is the vehicle by which work requiring formal control is authorized for accomplishment and tracked to completion or otherwise no longer requiring isolation or authorization.

c. Tag-Out Users Manual (TUM) S0400-AD-URM-010/TUM

- 1) The TUM provides for personnel and ship safety and prevents damage to equipment.
- 2) Prevents improper operation when a component, equipment, system or portion of a system is isolated or in an abnormal condition.

- 3) Prevents improper operation when a freeze seal is applied to a system or when other safety devices such as blank flanges are installed for testing, maintenance, or casualty isolation.
 - 4) Provides a procedure for use when an instrument is unreliable or not in its normal operating condition.
 - 5) Provides standard tag-out procedures.
 - 6) Provides a procedure for control of hazardous energy.
- d. Quality Assurance Instructions (QAI's) for the Work Control Process
- 1) The purpose of these instructions is to establish a system which provides for the accountability for all work, inspection and testing performed by the company and it's subcontractors on non-nuclear systems/components and provides the method for coordinating work and testing. The company has multiple Quality Assurance Instructions for handling the work control process on various ship platforms:
 - (a) QAI-605.1 WORK PERMIT SYSTEM FOR SUBMARINES AND DRY DECK SHELTERS
 - (b) QAI-605.2 WORK CONTROL SYSTEM FOR SUBMARINE FLEET SUPPORT
 - (c) QAI-605.3 WORK PERMIT SYSTEM FOR NAVAL AIRCRAFT CARRIERS
 - (d) QAI-605.6 WORK CONTROL PROCESS FOR NAVAL AIRCRAFT CARRIER OVERHAUL
- e. Requirements for Shipboard hazardous energy control.
- 1) NNS Contractors and their subcontractors performing shipboard production work at NNS shall implement their own company's lockout/tagout procedure. Contractors may reference Quality Assurance Instruction 604.1 *Tagout of Systems/Components*. Contractors whose work may involve shipboard hazardous energy sources should contact their Contractor Coordinator for a copy of this procedure, and should ensure that their copy is maintained up to date. Contractor's procedures shall be consistent with, no less stringent than, and in harmony with NNS procedure QAI 604.1.
 - 2) Contractors shall ensure their personnel who are authorized to issue, verify or apply/remove red danger tags are properly trained. This training shall include:

- (a) A description and explanation of the contractors tagout program,
 - (b) The purpose and use of red tags and work permit procedures at NNS,
 - (c) Typical hazardous energy sources at NNS and their means of isolation,
 - (d) Release of stored energy, and
 - (e) Procedures for completing, applying and removing red danger tags at NNS.
- 3) Contractors shall provide documentation of this training to their NNS Contractor Coordinator prior to the activation date of their initial purchase order and at other times upon request.
 - 4) Contractors shall apply red DANGER tags to all hazardous energy sources when their employees work in any area or on any system that may expose them to hazardous energy or the unexpected re-energization of machinery or a system. Contractors shall use NNS red DANGER tags (NN-54-18) and NNS yellow CAUTION tags. (NNS Contractor Coordinators are required to provide these tags to NNS Contractors.)
 - 5) Following is a description of items to be completed on the tag:
 - a) Contractor Name — Contractors must legibly write their company name and must include a phone number in this block.
 - b) Component and System I.D. — Identify the component or unit, and system to be tagged. When a blank is installed the specific joint, flange, or component must be identified as well as the system. When a blank is not installed at a specific joint, flange, or component, the tag is to indicate the nearest joint, flange, or component in that line.
 - c) Position — (1) Red Tags: Check either **“OPEN,” “CLOSED,”** or **“BLANKED”** as applicable. If a position is not applicable to the particular situation (e.g., roped off passageway or unsecured ladder) line out all positions. (2) Caution Tags: Check **“OPEN,” “CLOSED,”** or **“SEE ISSUER”** as appropriate. If a position is not applicable to the particular situation (e.g., - identification of JPTG boundaries), line out both positions.
 - d) Reason for Tag — Check the appropriate box (or boxes) to indicate the reason for the tag:
 - (1) Testing — check this block when the system/component is being tagged to support testing only.

- (2) Work in Progress — check this block for lockout/tagout of a system or component which provides a safety boundary for work to be performed.
 - (3) Not Operational — check this block for tag-out of a system or component which provides a safety boundary where no work is being performed.
 - (4) Other — if one of the above categories is not appropriate check this block and provide an explanation for the tag.
- e) Issuer- Enter the issuer’s name, signature, and telephone number. This block is reserved for the person who hung the tag. Only *authorized employees* may apply tags where the reason for the tag is “Work in Progress” or “Testing.”
- (1) Supervisors and Department O27 staff may apply “Not Operational” or “Other” tags to systems or equipment that pose a hazard.
- b) Dept. - Enter “NA” in these blocks.
- c) Tag Number/Time – This space shall be used to account for tags.
- (1) When the tag designates a boundary of a Work permit, the unique Work Permit number, preceded by the “WP” designator, and the corresponding tag number shown in the Tag Record of the Work Permit shall be entered in this space.
 - (2) Tags not used in conjunction with Work Permits and that will remain affixed for more than one shift be assigned a number from the Tagout Log, and the number shall be entered in this space.
 - (3) For tags attached for temporary use (not to extend beyond one shift) “NA” shall be entered in this space.
- d) Date – Enter the date the tag is issued.
- e) Verification- Work shall not start until the tag has been verified.
- (1) Work in Progress tags shall have an independent verification by the system expert (owning trade) of the tag and component tagged. The verifier shall physically verify the following:
 - (a) Position of the component tagged.

(b) The tag is hanging on the identified component.

(c) The tag is filled out in accordance with this procedure.

Note: This block can not be signed by the same person who signed the contractor's name block or assisted in the tagout.

- (2) For Testing, Not Operational and Other tags- Verification may be performed by the same person who hung the tag.
 - (3) Virginia Class Submarine applied tags- verifier shall initial the "Date Hung" block of the log after he has performed the above verification. If the tagout is for work permit he shall initial beside the valve position on the tagout sheet.
- 6) Attachment of tags- Tags shall be attached by the Foreman/Test Supervisor (or his designated representative) of the work group. Prior to attaching the tag, the person hanging the tag shall ensure the component is identified with a temporary or permanent label. (Labels are not required on items that are not considered "operable"- i.e. blanks, manhole covers, or plugs) Temporary labels for valves or components should be metal or plastic and securely fastened to the component.
- 7) Hanging of tags, tagout accountability and clearance of tags shall be in accordance with NNS QAI 604.1 Tagout and Work Control procedures. Request copy of these procedures from assigned Contractor Coordinator.

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Personal Protective Equipment

PPE

1. *Hazard Assessment*

All contractors and vendors shall perform a Hazard Assessment of each job to determine the personal protective equipment needed to perform such job. Hazard assessments shall be maintained by the contractor for the entire length of time to complete the job at NNS. Hazard assessments shall be made available for review upon request.

2. *References*

- A. 29 CFR 1910.132 Personal Protective Equipment, General Industry.
- B. 29 CFR 1915.151 to .160 Personal Protective Equipment, Maritime.
- C. 29 CFR 1926.28 Personal Protective Equipment, Construction.
- D. ANSI Z41-1991 – American National Standard for Personal Protection – Protective Footwear
- E. ANSI Z87-1-2003 – Practice for Occupational and Educational Eye and Face Protection
- F. ANSI Z89-1969 – American National Standard for Safety Requirements for Industrial Head Protection
- G. ANSI Z89-1986 – American National Standard for Personal Protection – Protective Headwear for Industrial Workers-Requirements
- H. ASTM F2412-05 – Standard Test Methods for Foot Protection
- I. ASTM F2413-05 – Standard Specification for Performance for Foot protection
- J. 29 CFR 1910.95 - Occupational noise exposure & 29 CFR 1926.28 Occupational noise exposure

3. *Requirements*

- A. Hard hats, safety glasses and safety shoes are required in production areas. Areas not considered production areas are the main roadway from the 37th street gate to building 87 on the east side of the railroad tracks and the walkway from building 1744 to building 1821 or any area where EH&S has granted a written variance. If

production work starts in either of these areas, they will be considered production areas.

- B. Clothing shall be suitable for the type of work being performed. Contractors shall not wear polyester/synthetic (man-made) clothing while performing hotwork operations.
- C. Safety glasses with a mirrored finish are not allowed on NNS property at any time.
- D. All safety glasses must have mounted side shields.
- E. Contractors shall provide their own PPE unless superseded by contractual agreement.
- F. PPE shall be properly maintained.
- G. The following equipment and operations have the potential to produce excessive noise levels therefore contractors must use hearing protection unless they have sampling data to document their equipment is below the action level:
 - 1. Pneumatic tools (grinders, compressors, needle guns, drills, chippers, hammers, impact wrenches, etc.).
 - 2. Welding, cutting, burning, carbon arc gouging and other operations generating sparks or molten metal, not to include manual and automatic gas tungsten arc welding (GTAW) and submerged arc welding.
 - 3. Abrasive blasting, vacuveyors, etc.
 - 4. Power tools (grinders, planers, saws, jointers, etc.).
 - 5. High impact equipment/operations (plate hammering, stenciling, power stud guns, concrete breaking, pile driving, etc.).
 - 6. Pressurized cleaning equipment (steam, air, water, etc., except compressed air less than 30 psi).

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**Scaffolding (Staging)
and Fall Protection**

SCAFFOLDING (STAGING)

1. *Hazard*

At NNS scaffolding is most often referred to as staging. It's used as work platforms to place workers at elevated work sites safely; NNS consider access ladders an integral part of staging.

Fall protection is required when employees work on unguarded surfaces above five feet.

Many hazards are created with the erection, alteration, dismantling, use of scaffolding and work performed on other unguarded surfaces. Fall protection is a means to eliminate or reduce associated risks of slipping, tripping and falling to lower levels.

2. *Regulations & Requirements*

a. Standards for erection, alteration and dismantling of scaffolds are:

- (1) Maritime 29 CFR 1915.71 (scaffolds/staging) and 1915.72 (ladders)
- (2) General Industry 29CFR 1910.28
- (3) Construction 29 CFR 1926.450 – 452,454
- (4) NNS Best management practices Y1045 Staging Standards.

b. Standards for fall protection are:

- (1) Maritime 29 CFR 1915.159, Personal fall arrest systems
- (2) Maritime 29 CFR 1915. 160, Positioning device systems
- (3) Construction 29CFR 1926.502, Fall protection system Criteria and Practices.

3. During the NNS pre-approval process each contractor whose employees will erect and work on scaffolding must provide to NNS Environmental, Health and Safety Department a copy of its written program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to the program on an annual basis, such as at the beginning of each year.

The written compliance program shall specifically address the following items in addition to the items already discussed:

- a. Scaffolding (staging)
 - (1) The responsibility for erection, alteration and dismantling of scaffolding.
 - (2) What makes up scaffolding such as; platform, ramps, ladders and stairways.
 - (3) Vendors shall use the hierarchy below, listed in order of decreasing preference, to determine the access method to elevated working and walking surfaces:
 - (a) Stairs (most preferred method)
 - (b) Inclined or vertical ladders with runs less than 20 feet offset by platforms or decks
 - (c) Ladders that exceed 20 feet in height only with Contractor Coordinator approval
 - (d) Ladders that exceed 35 feet in height only with EH&S approval (least preferred method)
4. Swing gates shall be provided at access points to elevated working and walking surfaces.
5. Non-skid material shall be present on all Safeway ladders (system scaffold), and all other metal ladders that are not manufactured with non-skid surface.
6. Scaffolding inspection process:
 - a. Who will inspect scaffold
 - b. Frequency of scaffold inspection
 - c. Process for scaffolding alteration (modification).
 - d. Process for reporting hazards and mishaps.
7. Fall protection
 - a. When is fall protection required over a solid surface?
 - b. When is fall protection required over water?
 - c. When is fall protection required on roof structures?
8. NNS best management fall protection practices for work over water and in aerial lifts are:
 - a. Fall protection required on unguarded surfaces 15 feet or more above water.

- b. Life jacket required on unguarded surfaces less than 15 feet above water.
- c. Fall protection required in personnel floats (JLG, skiffs, baskets) over solid surfaces, or 15 feet or more over water.
- d. Life jacket required when less than 15 feet above water riding in personnel float (aerial lifts, skiffs, and basket).

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Aerial and Scissors Lifts

AERIAL & SCISSORS LIFTS

1. *Hazard*

Aerial and scissors lifts are used in many industries including shipbuilding. They provide a flexible work platform that can be used to place a worker at an elevated work site quickly and safely. However, many hazards are created with the use of this equipment, including ejection or falling from the equipment, possible electrical hazards when working near electrical lines and equipment failure due to overloading.

2. *Regulations & Requirements*

- a. When employees will operate aerial or scissors lifts, OSHA and NNS require each employer to establish and implement a written compliance program to comply with 29 CFR 1910.67 or 1926.453 as applicable and the best management practices of ANSI A92.5 and ANSI A92.6.
- b. During the NNS pre-approval process each contractor whose employees will operate aerial or scissors lift equipment, must provide to the NNS Environmental, Health and Safety Department a copy of its written program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to the program on an annual basis, such as at the beginning of each year.
- c. The written compliance program shall specifically address the following items, in addition to the items already discussed:
 - 1) Mobile equipment used for handling personnel on barges or scows without bumpers shall be securely lashed ***and used only in attaining proper elevation.***
 - 2) When it is necessary to drive a lift while on a barge, the platform shall be fully telescoped in and brought to its stowed position. An observer must be used to ensure the travel path is clear of obstructions and debris while the lift is being driven. The observer must be in constant communication with the operator at all times.
 - 3) A boom or scissors lift will not be used for any purpose other than positioning working personnel, their tools, and equipment. Where no other means is available and access or exit is needed above ground from the platform (basket), all fall hazards must be eliminated by positioning

the platform as close as possible (within 12 inches) to the transfer surface. Alternatively, fall arrest protection with two lanyards must be provided. In all cases an operator must remain at the basket controls at all times when someone has exited from an elevated basket to another surface.

NOTE: Best management practice at NNS requires a console cover to prevent obstacles from striking or interfering with the operating controls.

- d. The contractor shall also ensure that associated OSHA regulations such as fall protection are addressed either in this program or additional written programs.
- e. Operators and passengers of scissor lifts must be tied off with a harness and lanyard.

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Abrasive Blasting

ABRASIVE BLASTING

1. *Hazard*

At NNS, exposure monitoring data indicate the potential to exceed applicable OSHA exposure limits when abrasive blasting. Therefore, NNS expects contractors who conduct abrasive blasting to monitor and evaluate their operations and to comply with OSHA regulations accordingly.

2. *Regulations & Requirements*

Where there is potential for personnel exposure to hazardous materials, OSHA requires each employer to determine the nature and the extent of that exposure. If airborne exposures are above applicable OSHA regulatory limits, the employer must establish and implement a written compliance program(s) and must comply with other applicable requirements of the OSHA regulations.

During the pre-approval process (see General Information) each contractor whose employees may be exposed above applicable OSHA regulatory limits during abrasive blasting operations must provide to the NNS Environmental, Health and Safety Department a copy of that contractor's written health and safety program(s) for that substance(s). This document(s) must describe the contractor's program(s) for complying with each element of the applicable OSHA standard(s). The contractor shall provide copies of any changes to the program(s) at least annually, such as at the beginning of each year.

The employer shall ensure that unprotected personnel will not be exposed to airborne levels of contaminants above the OSHA regulatory limits, or to surfaces contaminated with hazardous materials which may present a health hazard to employees. The contractor shall also ensure that hazardous materials are handled and disposed of in accordance with applicable OSHA regulations and NNS environmental permits.

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Arsenic

ARSENIC

1. *Hazard*

At NNS, exposure monitoring results have indicated a potential for inorganic arsenic levels to exceed the applicable OSHA exposure limits during abrasive blasting in enclosed and confined spaces.

Contractors shall ensure that their personnel are not exposed to inorganic arsenic over the applicable OSHA levels.

2. *Regulations & Requirements*

Where there is potential for personnel exposure to inorganic arsenic, OSHA requires each employer to determine the extent of exposure. If airborne exposures are above the action level ($5 \mu\text{g}/\text{m}^3$), OSHA requires the employer to establish and implement a written compliance program and comply with other requirements of 29 CFR 1910.1018.

During the NNS pre-approval process (see General Information) each contractor whose employees may be exposed to arsenic above the action level ($5 \mu\text{g}/\text{m}^3$), must provide to the NNS Environmental, Health and Safety Department a copy of that contractor's written Arsenic Program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to the program on an annual basis, such as at the beginning of each year.

The employer shall ensure that unprotected personnel will not be exposed to airborne levels of arsenic above the action level.

**Newport News Shipbuilding
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Asbestos

ASBESTOS

1. Purpose

This chapter establishes requirements for the storage, handling, use, and preparation for disposal of all asbestos-containing materials by individuals or companies under contract to Newport News Shipbuilding (NNS).

2. Scope

This chapter encompasses all contracted activities at Newport News job sites that involve the procurement, storage, handling, use, and disposal of asbestos.

3. References

- a. Public Law 91-596; Occupational Safety and Health Act of 1970, as amended.
 - (1) 29 CFR Part 1915.1001; Asbestos, (Shipyard Employment).
 - (2) 29 CFR Part 1926.1101; Asbestos (Construction Industry).
 - (3) 29 CFR Part 1910.134 "Respiratory Protection"
 - (4) 29 CFR Part 1910.1200; Hazard Communication
- b. 40 CFR Part 61, Subpart M, "National Emission Standard for Asbestos"
- c. 40 CFR part 763 "Asbestos"
- d. Virginia Code, Title 54.1, Chapter 5
- e. American National Standards Institute, "Fundamentals Governing the Design and Operations of Local Exhaust Ventilation Systems" -- ANSI Z9.2.

4. Definitions

- a. *Airborne Concentrations*: Measured concentrations of asbestos fibers in air, as number of fibers (five micrometers or more in length) per cubic centimeter of air (f/cc), based on sampling and analysis in accordance with OSHA regulations.

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- b. *Asbestos*: Includes chrysotile, amosite, crocidolite, tremolite asbestos, actinolite asbestos, anthophyllite asbestos and any of these minerals that has been chemically treated and/or altered.
 - c. *Asbestos Fibers*: Fibers of mineral origin (see above) having a minimum aspect ratio (length: width) of 3:1.
 - d. *Asbestos Work Area*: Any designated area in which suspected or known asbestos is being installed, removed, treated, or otherwise used.
 - e. *Asbestos Work Zone*: A completely enclosed area within an Asbestos Work Area.
 - f. *Asbestos Worker*:
 - (1) Any contractor employee, who handles, uses, installs, removes, cleans up, or is otherwise potentially exposed to asbestos.
 - (2) Any person so designated by the Environmental, Health and Safety Department.
 - g. *Employee*: A person who performs work and/or services for the benefit of the contractor, including sub-contractors.
 - h. *Friable*: Material that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure and includes previously non-friable material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.
 - i. *Qualified Asbestos Worker*: A person shall be a qualified asbestos worker only when all of the following conditions are met:
 - (1) He is medically qualified in accordance with reference a.1 or a.2
 - (2) He has successfully completed respirator training and fit test program, in accordance with references a.1 – a.3.
 - (3) He has been trained in the hazards of asbestos and methods of control, in accordance with references a, b, c, and d.
 - (4) He shall maintain a current asbestos workers license in accordance with Virginia Code, Title 54.1, Chapter 5. (See Appendix B of this chapter for requirements for operations exclusively involving non-friable roofing, flooring, and siding material).

- j. *Time-Weighted Average Exposure*: A method of calculating an average exposure to a substance over an entire workshift (generally 8 hours).
- k. *Wetting Agent*: An additive to water that reduces surface tension and thereby increases the wetting ability of water.

5. General

- a. Any contractor performing asbestos work at Newport News must have an asbestos program that has been reviewed and accepted by the Newport News Environmental, Health and Safety contractor management office.

Note: This program review is not the same as the Asbestos Work Plan review discussed elsewhere in this chapter.

- b. Any job requiring handling, use, or removal of a material that is suspected of containing asbestos shall be treated as asbestos work in accordance with this chapter, unless the material is sampled and proven to be non-asbestos.
 - (1) Suspect materials are listed in the Newport News “Handbook for New Employees, Contractors and Visitors.” For further information on suspect asbestos-containing materials, contact the applicable contractor coordinator.
 - (2) All sampling must be conducted by AHERA accredited asbestos inspectors licensed in accordance with Virginia regulations. Analysis must be by a laboratory which is state – licensed and/or AIHA accredited for the types of asbestos analysis performed.
- c. The contractor shall maintain a current license to perform asbestos removal and encapsulation in accordance with the requirements of Virginia Code, Title 54.1, Chapter 5. (See Appendix B of this chapter for requirements for operations exclusively involving non-friable roofing, flooring, and siding material).
- d. It is the contractor's responsibility to provide written notification to the Virginia Department of Labor and Industry of any asbestos project equal to or exceeding 10 linear feet or 10 square feet, and to obtain the required work permit. It is also the contractor's responsibility to notify the EPA of asbestos projects if state notification is not required (such as on military vessels).
- e. The contractor is responsible for complying with all federal and state regulations.
- f. The contractor shall submit to the Newport News Contract Coordinator an Asbestos Work Plan outlining the contractor's procedure for complying with OSHA standards and this chapter (See Appendix C of this chapter). This

plan must be reviewed and approved by the Newport News Environmental, Health and Safety Department prior to commencing the asbestos work. The contractor may propose alternative work practices in the work plan which, upon acceptance by Newport News, will supersede corresponding sections of this chapter.

In this plan the contractor shall also make a determination as to whether or not asbestos concentrations are expected to equal or exceed 0.1 f/cc. The plan shall also include supporting rationale for the determination. Where no reasonable determination can be made, it shall be assumed that concentrations will exceed 0.1 f/cc and the appropriate actions taken.

- g. A trained competent person shall be designated as required by 29 CFR 1926.1101(o). Equivalent is the qualified person per 29 CFR 1915.1001 (o).
- h. Clean change, decontamination and shower facilities shall be provided where required by 29 CFR 1926.1101 (j) or 1915.1001 (i) as applicable.
- i. The contractor shall provide all safety equipment and engineering controls as required in this chapter or OSHA Regulations unless otherwise specified by the contract.
- j. A licensed project monitor shall be on site for the following asbestos projects in accordance with regulations of the Commonwealth of Virginia. (see Appendix B of this chapter for requirements for operations exclusively involving non-friable roofing, flooring, and siding material). A licensed asbestos project monitor is required:
 - (1) When the facility where the asbestos project is performed is occupied or will be occupied at the completion of the project, and,
 - (2) The asbestos project is 260 linear feet or more or is 160 square feet or more.
- k. The contractor is responsible for providing any other licensed persons or services required by the Commonwealth of Virginia. However, Newport News reserves the right to perform any activities it deems necessary (air sampling, site inspection, etc.) to protect our employees.
- l. Title to materials: asbestos-containing material shall remain the property of the owner.
- m. The contractor shall provide safe access to the owner to observe asbestos work.

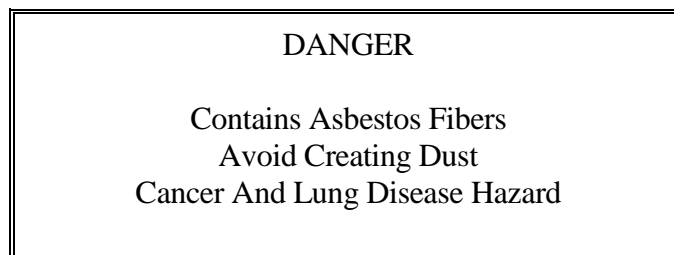
6. Asbestos Worker Qualification

- a. Each person who enters a designated asbestos work area shall, as a minimum, meet medical training and respirator fit test requirements of 29 CFR 1915.1001 or 29 CFR 1926.1101 as applicable. Project monitors, inspectors, and supervisors of asbestos workers performing asbestos work shall be licensed appropriately. (See Appendix B of this chapter for requirements for operations exclusively involving non-friable roofing, flooring, and siding material).
- b. To perform asbestos removal work, each employee must be a “Qualified Asbestos Worker”, as defined in paragraph 4.i of this chapter.
- c. Educational Requirements: All employees working with or handling asbestos shall be trained, at not less than one year intervals as required by OSHA asbestos regulation and Commonwealth of Virginia licensing regulations.
- d. Verification of employee licensure shall be provided to the Newport News Environmental, Health and Safety Department upon request.

7. Procurement

- a. Contractors shall not use asbestos-containing materials unless specifically authorized in the contract.
- b. Materials containing (or potentially containing) asbestos may not be brought on shipyard property unless there is prior written concurrence from the Newport News Environmental, Health and Safety Department.
- c. Material containing asbestos fibers shall be packaged in plastic bags or otherwise packaged in a manner that will prevent generation or release of asbestos fibers.

At least two labels shall be affixed to each package in conspicuous places. Labels shall include the following wording:



8. Handling

- a. Asbestos shall be handled in the "least hazardous" manner possible, including complete packaging, adequate labeling, etc., as defined in this chapter or specified by the Environmental, Health and Safety Department.
- b. Materials which, because of handling or poor repair, may generate asbestos fibers shall be taped, covered with plastic, painted, or otherwise sealed prior to all handling operations.
- c. All piping, valves and equipment containing asbestos to be removed shall be totally sealed in plastic bags or sheets and labeled prior to removing the equipment.

9. Asbestos Work Area - Establishment

- a. Prior to initiating any job involving known or suspected asbestos, the contractor must prepare an Asbestos Work Plan (See Appendix C), and have it approved by the Newport News Environmental, Health and Safety Department. To obtain approval, a cover sheet, (available from the contractor coordinator or EH&S) signed by the contractor and the contractor coordinator or designee, must be submitted to the EH&S department with the plan. The EH&S department shall approve the plan or recommend the changes the contractor must make to the plan to obtain approval.
- b. All employees in the area of the asbestos work shall be notified of the nature and location of the asbestos work by the cognizant contractor coordinator.
- c. Asbestos project monitors shall be present on the job site each day asbestos work is being performed. The monitor shall perform the duties established in 18 VAC 15-20-455 and shall maintain a daily log of all work performed. The daily log shall include inspection reports, air sampling data, type of work performed by the contractor, problems encountered and corrective action. The daily log shall be delivered to the Newport News coordinator at the conclusion of the asbestos work.
- d. As a minimum, a containment system shall be used to prevent the release of asbestos particles from any asbestos operations/work areas. This containment system must meet the requirements of reference a.1 or a.2 as applicable.
 - (1) A work zone shall be defined as the area in which the actual asbestos job is performed. These areas shall be totally enclosed by tents,

glovebags, etc., or the compartment or room in which the asbestos work is performed shall be completely cleared of all "non-asbestos qualified" personnel and operations. Appropriate warning signs shall be placed at the work zone. Only the Environmental, Health and Safety Department may determine when a total enclosure is not feasible. Entry into the work zone requires the use of full body coveralls, gloves, and approved respirators.

- (2) The asbestos work area shall be defined as an area which includes the work zone and is enclosed by red rope barriers. Entry into the work area requires the use of an approved respirator.
 - (3) For removal, demolition and renovation operations (unless glovebags are used in accordance with requirements of reference a.1 or a.2), an enclosure consisting of a clean room, shower area, equipment room, and work area shall be established in accordance with OSHA regulations. 29 CFR 1926.1101, Appendix F shall be used as a guideline for performing this type of work.
 - (4) The contractor shall ensure that all enclosures, except glove bags, are inspected to ensure integrity and are measured to ensure a pressure differential of -0.02 inches of water or greater prior to removing asbestos.
 - (5) The contractor shall ensure that glove bags are inspected and smoke tested to ensure integrity prior to removing asbestos. Glovebags shall be maintained under negative pressure.
- e. On all jobs where an asbestos work zone has been established a perimeter monitor shall be appointed by the contractor and stationed immediately outside the designated asbestos work area and in sight of all unsecured entrances. All unsecured entrances into the work area must be within sight of the monitor at all times. The perimeter monitor shall advise all personnel of the proper personal protective equipment required to enter the area, and report violations to supervision. The perimeter monitor shall ensure that any Newport News Shipbuilding personnel who must enter the asbestos work area sign the "Asbestos Job Form" NN 4657 (latest revision). Completed forms shall be submitted to the Newport News Shipbuilding EH&S department.
 - f. Newport News Shipbuilding notes that some asbestos work operations may be conducted without full enclosures. See Appendix A for a list of such operations. Specific control procedures must be addressed in the Contractor's Asbestos Work Plan.

10. Asbestos Work Area - Control

- a. Engineering Control - Engineering controls such as, but not limited to, substitution, isolation, enclosure, and exhaust ventilation shall be used to control asbestos exposures below the levels prescribed in this chapter:

(NOTE: OSHA requires that engineering controls be implemented to the most feasible extent possible before other methods of control are utilized.)

- (1) Ventilation

- (a) HEPA Filtered exhaust ventilation systems must be provided for any job involving asbestos cutting, scoring, or removal of lagging or other friable asbestos. All total enclosures used for the control of asbestos (including glove bags) shall be maintained under negative pressure by filtered mechanical exhaust ventilation.
- (b) All HEPA filtered exhaust and dust collection systems shall be designed, constructed, installed, and maintained in accordance with a consensus standard such as reference (e).
- (c) All ventilation (except that used for asbestos control purposes as determined by the Environmental, Health and Safety Department) shall be secured and sealed in and around the asbestos work area prior to beginning asbestos work.
- (d) Filter assemblies for asbestos ventilation shall be labeled as containing asbestos. Ductwork located upstream from the filter assemblies shall be marked with a red stripe, and considered to be asbestos contaminated. This requirement does not apply to "negative air" units such as MicroTrap.
- (e) All exhaust and dust collection assemblies are to be provided by the contractor, unless otherwise specified in the contract.

- (2) Wet Methods

- (a) Unless otherwise authorized by the Environmental, Health and Safety Department, asbestos shall be handled, removed, cut, scored, or otherwise worked in a wet state to prevent the release of airborne fibers. Water used for this purpose shall be treated with a wetting agent.
- (b) When wet methods cannot be used, the Environmental, Health and Safety Department shall be notified and local exhaust ventilation shall be used at each work operation. The exhaust ventilation shall be a 4" diameter tube (or larger) and shall be placed as close as

possible to the point of fiber generation, but no further than one duct diameter.

(3) Power Tools

No power tools may be used on asbestos unless the Newport News EH&S department approves their use as described in the contractor's work plan. Power tools shall be equipped with HEPA filtered local exhaust ventilation.

b. Respiratory Protection

- (1) All personnel entering or working in a designated asbestos work area shall wear NIOSH approved, non-disposable respiratory protection.
- (2) Employees who have facial hair which may contact the sealing surface or valves of the respirator shall not be permitted to wear respirators or enter areas requiring respiratory protection.
- (3) Respirator filters shall be discarded as asbestos waste when excessive breathing resistance is encountered or at the end of the job, whichever comes first.
- (4) Before storing respirators used for asbestos work, the respirator facepiece shall be cleaned, and the respirator placed in a plastic bag.

c. Special Clothing

- (1) All personnel entering or working in an asbestos work zone shall be provided with, and shall wear, fullbody coveralls impermeable to asbestos fibers, including full head and shoe covering, and gloves.
- (2) Asbestos accumulations shall be vacuumed from protective clothing and shall not be blown free with compressed air or other gases.
- (3) Removal of protective clothing and equipment used for asbestos work shall be accomplished in a manner which prevents the spread of asbestos particles.

d. Housekeeping

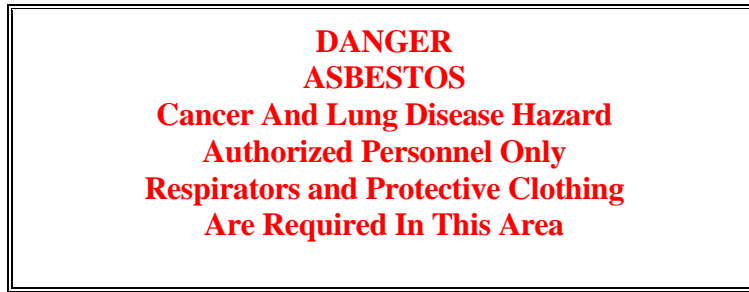
- (1) Prior to initiating work with asbestos, an asbestos vacuum cleaner shall be procured for personal and area cleanup.
 - (a) Vacuum cleaners shall have a HEPA filter to prevent release of asbestos fibers into the exhausted air and to facilitate proper disposal. Vacuum cleaners shall be used and identified for asbestos

use. Vacuum cleaners used for asbestos must be approved by the Environmental, Health and Safety Department prior to use.

- (b) Only the X36 Waterfront Support Services Department may empty and service asbestos vacuum cleaners supplied by Newport News.
- (2) Work zones shall be kept free of accumulations of asbestos.
- (3) Drop cloths shall be used in all designated asbestos work zones, including under glove bags.
- (4) Compressed air or gases shall not be used for cleaning-up or "blowing down." Asbestos shall not be collected by dry-sweeping with brooms or use of compressed air.
- (5) Any dust collectors used (bag houses, filters, etc.) shall be serviced regularly by the contractor to prevent recirculation of asbestos fibers. Clean-up and disposal shall be performed in accordance with the provisions of this chapter.
- (6) All asbestos, including waste (e.g., gasket material, strapping, wallboard, insulation, etc.) shall be treated as and disposed of as asbestos waste.
- (7) No equipment or material shall leave an asbestos work area unless it has been:
 - (a) cleaned thoroughly to remove all traces of asbestos, or
 - (b) bagged and labeled, or
 - (c) sealed and labeled.

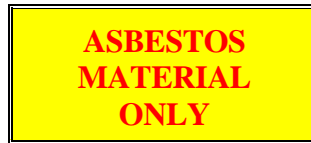
11. Warning Signs, Barrier Ropes, and Labels

- a. All signs, ropes, and labels are to be provided by the contractor, unless otherwise specified in the contract.
- b. Warning Signs
 - (1) Warning signs shall be displayed at all approaches and entrances around the perimeter of each asbestos work zone. They shall be standard informational signs, with *standard black, red, and white format*, approximately 20" X 14," reading:

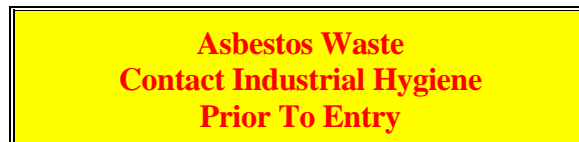


Alternatively, signs with a NN format with red lettering on yellow background may be obtained from the Contract Coordinators for limited use.

- (2) Signs shall also be posted around asbestos storage areas. They shall be standard informational signs, with red lettering on yellow background, approximately 10" x 12" reading:



- (3) Asbestos waste containers with a capacity greater than 60 gallons shall have signs posted on every side that read:



The signs shall be no smaller than 12" X 15".

- (4) All signs shall be suspended on barrier ropes, bulkheads, doorways, or other conspicuous locations.
- (5) Unauthorized/unqualified personnel are prohibited from crossing any barriers identified with the above ropes and signs.

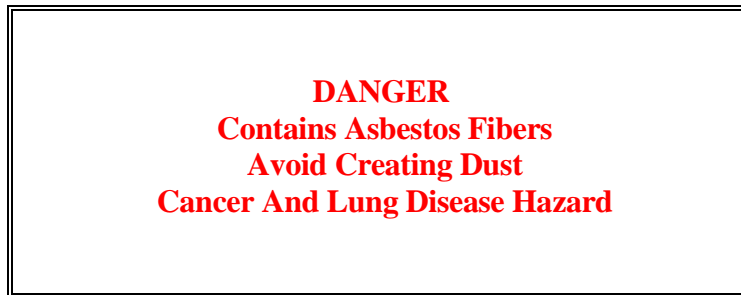
c. Barrier Ropes

- (1) All asbestos work areas shall be enclosed with red barrier rope.
- (2) All asbestos storage areas shall be enclosed with red barrier rope.

- (3) Red rope shall not be used for any purpose other than as required by this chapter, or other specific NN procedure.

d. Labels

- (1) Commercially available labels shall be affixed to all raw materials, waste, contaminated clothing, and other items or containers of asbestos-containing materials. Labels shall be approximately 5 ½ " x 3 ½ ", red and white Danger format and read:



For limited cases, NN labels with red labeling or yellow background are available through the Contract Coordinator may be used.

These labels are not required for pre-printed waste bags.

- (2) All asbestos waste to be shipped outside of the shipyard shall be identified with the name of the waste generator and the location at which the waste was generated.

12. Asbestos Work Area - Clearance

- a. The contractor shall clean and vacuum the area.
- b. All warning signs, ropes, and barriers shall remain in place until each particular job is completed and cleared by an approved project monitor.
- c. Clearance consists of a detailed visual inspection to ensure that no debris is present in the work area and air samples to ensure airborne fiber concentrations of 0.01 f/cc or less.
- d. Clearance inspections/sampling will be performed by persons meeting the following requirements:
 - (1) Individuals and organizations performing the inspections are presented in the contractor's Asbestos Work Plan,

- (2) Newport News approves the use of the individuals/organizations (Newport News expects the contractor to have no financial interest in the individual/organization),
- (3) Inspectors work under the direction of a Certified Industrial Hygienist (CIH),
- (4) Laboratories performing air sample analysis are approved by Newport News, are AIHA accredited, or, for on-site analysis, analysts are listed in the AIHA asbestos registry.
- (5) Newport News reserves the right to inspect the area prior to removal of asbestos controls.

13. Storage

- a. Unattended asbestos-containing material that has been removed from service shall be properly labeled, held in a temporary asbestos storage area, the area roped off with red ropes and "asbestos material only" signs installed.
- b. All asbestos materials shall be stored in plastic bags or otherwise packaged in a manner that will prevent generation or release of asbestos fibers, and shall be properly labeled.
- c. On rare occasions it may be necessary to actually enter an asbestos waste container to remediate a discrepancy. Entry into any asbestos waste container (bins, dumpster, etc.) shall require gloves, coveralls (with head and foot covers) and asbestos respirator (see II.F.3). Asbestos qualification shall also be required. The Environmental, Health and Safety Department must be contacted prior to this operation.

14. Disposal

- a. All asbestos waste material shall be packaged, sealed, and labeled in plastic bags or other impermeable containers while still in the work zone. These bags/containers shall be handled carefully to avoid rupture of the container and possible release of asbestos fibers. All waste shall be double bagged or double wrapped with 6-mil minimum plastic.
- b. All asbestos waste to be disposed of by Newport News shall be placed in dumpsters provided for that purpose. Dumpsters must be labeled in accordance with section 11 above.
- c. If disposal is not available through Newport News contracts, the contractor shall be responsible for asbestos disposal which shall be in accordance with

all state and federal regulations, and described in the contractor's Asbestos Work Plan.

15. Asbestos Incidents

Asbestos incidents such as spills, violations, etc., shall be reported to the Environmental, Health and Safety Department (688-5523) through the contractor coordinator for resolution. Reporting, securing, and cleaning of a major asbestos incident (one which results, or may result in a potential release of significant levels of airborne asbestos fibers) shall be accomplished in accordance with the following requirements:

- a. The Newport News contractor coordinator shall notify the Environmental, Health and Safety Department (688-5523). If the Environmental, Health and Safety Department cannot be notified immediately (such as third shift or weekends), the O15 Communication Center (0-2222 or *911) shall be notified, and the following information shall be given:
 - (1) Your name and contractor's name or affiliation.
 - (2) The number of the telephone from which you are calling.
 - (3) Nature and location of the incident.
- b. Once notified, the Environmental, Health and Safety Department (O27) will assume complete control of the incident, to include securing the area and clean-up activities. Affected personnel shall follow O27 instructions.

16. Shipyard Facilities

Requests for services or questions concerning the health hazards or renovation of Shipyard Facilities potentially containing asbestos shall be directed to the Newport News contract coordinator.

17. Recordkeeping

Contractors are responsible for maintaining appropriate records of medical exams, monitoring, waste disposal, or any other records required by state or federal regulation.

18. Violations

- a. The Company reserves the right to audit the work of the contractor to determine compliance with this chapter, and applicable state or federal regulations.

- b. Contractors and/or vendors who fail to perform work strictly according to this chapter or applicable state or federal regulations may be subject to action such as, but not limited to:
 - (1) Termination of contract.
 - (2) Immediate removal of contractor personnel and/or equipment from shipyard property.
 - (3) Restriction from future work at Newport News.

19. Variances

- a. Only the Environmental, Health and Safety Department may grant variances to any provisions of this chapter.
- b. Variances to OSHA regulations must be approved by the State Department of Labor and Industry or the U.S. Department of Labor as appropriate.

APPENDIX A Special Procedures

Newport News has determined that the operations listed in this appendix may be performed using controls other than total enclosures. Specific control procedures must be addressed in the contractor's Asbestos Work Plan.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ASBESTOS WORK IS PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL REGULATIONS, AND TO PERFORM ALL NECESSARY EMPLOYEE EXPOSURE EVALUATIONS TO VERIFY COMPLIANCE. NEWPORT NEWS HAS NOT EVALUATED THESE OPERATIONS IN REGARDS TO CONTRACTOR EMPLOYEE ASBESTOS EXPOSURE.

Working with asbestos gaskets.

Working with asbestos packing.

Working with asbestos friction material.

Working with wire and cable.

Removal of asbestos containing vinyl mastic material.

Removal of less than 10 square feet of asbestos floor tile.

Digging in asbestos contaminated soil.

Punching holes in floor tile.

APPENDIX B
Requirements for Operations Involving Non-Friable
Roofing, Flooring, and Siding Materials

1. *Scope*

a. **Applicability**

This appendix applies to work involving roofing, siding, and flooring determined to be non-friable.

b. **Determination of Friability**

Only the Environmental, Health and Safety Department may make the determination that a material is non-friable. In general, only roofing tar and pitch is considered non-friable. It is the experience of Newport News that roofing and siding in the shipyard becomes friable during removal.

2. *Licensing*

Contractors shall be licensed in accordance with all state and federal regulations. Contractor employees shall be trained in accordance with applicable state and federal regulations.

3. *Work plan*

Contractors removing asbestos-containing material under this appendix shall provide a work plan in accordance with Appendix C of this chapter. The plan must include a detailed description of the removal technique and tools and the methods which will be used to prevent the spread of asbestos containing material from the work area.

4. *Work area set-up*

Controlled work areas shall be established to control the spread of asbestos-containing material from the work area. Appropriate measures shall be taken to ensure that asbestos-containing material is not tracked from the work area.

a. **Demarcation**

The work area shall be marked with red rope or barrier tape and signs shall be conspicuously posted to prevent unauthorized persons from entering the work area. Asbestos regulated-area signs described elsewhere in this chapter shall not be used to identify a non-friable material work area.

b. **Ventilation**

Ventilation shall be secured as required elsewhere in this chapter.

c. Work practices

Work shall be performed in such a manner as to ensure that non-friable material does not become friable. Work practices shall be described in the abatement plan.

d. Power tools

Power tools may not be used unless their use is specifically described in the work plan and their use has been approved by the Environmental, Health and Safety Department.

e. Clean-up

(2) Extent of cleaning

The work area shall be cleaned of all asbestos-containing debris.

(3) Compressed air

Compressed air may not be used for cleaning.

(4) Sweeping

Dry sweeping may not be performed.

(5) Vacuums

Vacuum cleaners must be designated for asbestos use and must be filtered as required elsewhere in this chapter

f. Disposal

Asbestos containing debris shall be packaged, labeled, and disposed of as asbestos waste as described elsewhere in this chapter.

APPENDIX C

Elements of an Asbestos Work Plan

Paragraph II.A.3. of this chapter requires the Contractor to submit an Asbestos Work Plan in writing to NNS prior to commencing work. At a minimum, the Plan shall include the following elements:

1. A physical description of the work area,
2. A description of the approximate amount of material to be removed,
3. A description of the containment to be used for asbestos removal,
4. A schedule for turning off and sealing existing ventilation systems,
5. Personnel hygiene procedures,
6. Labeling procedures,
7. A description of personal protective equipment and clothing to be worn by employees,
8. A description of the local exhaust ventilation systems to be used,
9. A description of work practices to be observed by employees,
10. A description of the methods to be used to remove the asbestos-containing material,
11. The wetting agent to be used,
12. A description of the sealant to be used at the end of the project,
13. An air monitoring plan,
14. A description of the clearance procedure to be followed
15. If Newport News does not handle the waste:
 - a. a description of the method to be used to transport waste material
 - b. the location of the dump site
16. Copies of all State and Federal asbestos project notification forms.
17. The shipyard will be notified immediately of any breach of containment, spills, or any other unexpected event that may release asbestos. The plan shall also include how the shipyard will be notified, including the names and phone numbers of specific individuals (usually the contractor coordinator).

Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual

Ceramic Fiber

Ceramic Fiber

Ceramic Fiber – from working with refractory insulation material in furnaces and other high temperature applications.

1. Ceramic fiber must be stored and transported in sealed containers or in poly.
2. Perform ceramic fiber work in a regulated area posted with signs:

CERAMIC FIBER WORK AREA

Dust hazard. Avoid breathing dust.
Irritating to skin, eyes and respiratory system.
May cause lung cancer.
Wear assigned protective equipment.
Do not remain in area unless your work requires it.

3. Regulated area shall remain posted until loose debris is removed. Clean up area using HEPA vacuum cleaners. Wet methods should be used where practical. No sweeping, no compressed air for clean-up.
4. Use drop cloths where feasible to contain ceramic fiber debris.
5. Persons performing ceramic fiber work must use the appropriate personal protective equipment.
6. Shipyard employees cannot be in the area.
7. Consult with you contractor coordinator and O27 for disposal guidance.

It is the responsibility of each contractor to ensure their compliance with applicable OSHA regulations and guidelines involving this material or situation which their employees may encounter.

**Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual**

Confined and Enclosed Spaces

CONFINED AND ENCLOSED SPACES

1. Hazard

Confined spaces present an extreme potential hazard to personnel brought on by limited ventilation resulting in oxygen deficiency, increased levels of flammable/combustible gases and increased levels of toxic materials.

Confined spaces are found in shipbuilding, repair and overhaul and in facilities operations. Contractors shall obtain from their Contractor Coordinator or Field Engineer specific information about confined spaces in the areas where contractor employees will be working.

Contractors whose employees work in confined enclosed spaces at NNS shall ensure their employees are aware of and can recognize the hazards associated with those spaces. These contractors shall also make sure their employees know entry and work procedures as well as emergency and rescue procedures for the specific confined spaces and enclosed spaces with dangerous atmospheres where they may work either in facilities or on ships.

Contractors shall work in accordance with their programs, and to any additional requirements contained within this manual.

2. Regulations

Where there is potential personnel exposure to hazardous conditions within confined or enclosed spaces, OSHA requires the contractor to establish and follow written confined space entry procedures. Where there is potential personnel exposure to hazards within confined/enclosed spaces in shipboard work, OSHA requires the contractor to comply with all provisions of:

- 29 CFR 1915, Subpart B - "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment."

Where there is a potential personnel exposure to confined spaces in non-shipboard work, NNS requires the contractor to work in accordance with the requirements and provisions contained within:

- 29 CFR 1910.146, "Permit-Required Confined Spaces for General Industry."
- 29 CFR 1926, "Occupational Safety and Health Regulations for Construction."

Contractors shall incorporate additional requirements for specific locations and work as identified in this manual. These requirements are in addition to any local, state, or federal requirements.

3. References

The requirements listed here are taken from the following references and will be updated as necessary when these references are changed:

- (a) Volume II, Chapter 22, Confined and Enclosed Space Entry of the NNS Health and Safety Manual, which is the primary NNS reference,
- (b) Volume II, Chapter 35, Sewage, of the NNS Health and Safety Manual,
- (c) Volume II, Chapter 18, Requirements for the Procurement, Application, and Removal of Paint Coatings of the NNS Health and Safety Manual,
- (d) NFPA 306 “Standard for the Control of Gas Hazards on Vessels”

4. General Requirements

- (a) During the NNS pre-approval process each contractor whose employees may work within confined or enclosed spaces must provide to the NNS EH&S Department a copy of their written Confined and Enclosed Spaces Safety Program. This document must describe the contractor’s program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to the program on an annual basis.
- (b) Contractors responsible for opening shipboard confined spaces must be authorized in writing by NNS to open the space and shall do the following:
 - (1) Where applicable, have a valid NNS work permit or work package authorizing the opening of the space.
 - (2) Affix an appropriate NNS confined space danger sign at each entrance.
 - (3) Install fall guards or other positive means to prevent accidental fall/stepping into holes when manway or butterworth covers are removed or other accesses are generated. When fall guards cannot be attached, such as in a roadway, an appropriate barrier shall be erected and maintained to prevent entry into the area of the opening.
 - (4) Obtain a cold work permit and notify NNS hot work coordinator and Marine Chemist Office prior to opening any tank or system containing flammable or combustible substances. Post area with “Danger” “NO HOT WORK” signs

while spaces are open or until they have been cleaned and certified as incapable of being a fire hazard "Safe for Hot work."

- (c) Contractors shall ensure that their employees obey NNS confined space signs and tags.

All contractors shall ensure each space that could contain or develop an atmospheric hazard to workers is tested and inspected prior to and at a frequency thereafter to ensure that work does not continue should a hazard develop during the course of their work.

- (d) Contractors shall ensure that pipelines that could carry hazardous materials into spaces are disconnected, blanked off, or otherwise blocked by positive method to prevent hazardous materials from being discharged or re-entering the space before the space is designated "Safe for Workers" or "Atmosphere Safe for Workers."
- (e) Contractors shall ensure that prior to starting work all their employees, including temporary leased employees, are properly trained in the hazards and other requirements of working in enclosed or confined spaces. This training must be job specific and may require additional training if the employee begins a different job.
- (f) In all shipboard spaces requiring a competent person inspection, if the contractor does not have trained and designated shipyard competent persons to perform inspections, a NFPA Certified Marine Chemist shall then carry out inspections.
- (g) Contractors shall ensure that no employee enters, continues to work within or remains in a shipboard confined space unless the following criteria are met:
- (1) Where applicable, the contractor has a valid work permit. No contractor personnel may enter a confined space without a valid work permit issued from NNS work control center.
 - (2) The contractor has verified that suitable isolation is in place to prevent employee exposure to hazardous materials or energy.
 - (3) Fall guards are in place. Contractors must immediately take steps to isolate unguarded openings and report problems to their Contractor Coordinator.
 - (4) Each employee is provided with primary light and secondary back up light sources. Secondary light is to be used to exit space should primary lighting fail.
 - (5) Effective mechanical exhaust ventilation must be operating at levels sufficient to ensure safe for workers. At no time must this be less than 300CFM when employees are entering and working in a space.

- (6) Employee is protected (provided and wearing suitable personal protective equipment (PPE)) when a space or process within an affected area could expose the worker to hazards.
 - (7) Oxygen is at/or between 19.5% and 22.0% by volume within the space.
Exception: Emergency rescue.
 - (8) Concentrations of combustible gases are less than 10% by volume of the Lower Explosive Limit regardless of any administrative, engineering, or PPE including respiratory controls. Exception: Emergency rescue.
 - (9) Airborne concentrations of hazardous materials remain below IDLH (immediately dangerous to life and health) levels. Where no OSHA Permissible Exposure Limit (PEL) or Ceiling (C) values are provided, Contractor shall use other sources such as ACGIH, NIOSH, or Manufacturer data to protect their workers health and safety. Contractor shall use values to determine time, clothing, or respiratory protection restrictions. Exception: Emergency rescue.
 - (10) Contractor Coordinators must ensure contractors comply with the requirements of NNS procedure Y-1073 "Use and Handling of Argon, Nitrogen, and Other Inert Gases." Representatives of the contractor must verify that the additional requirements of NNS procedure Y-1073 are met prior to workers entering spaces posted with NNS "Danger" "Argon/Inert Gas" signs.
- (h) All personnel must evacuate a space when ordered or when alarms are sounded or when they perceive they are in danger.
 - (i) No personnel may remain in a space when unsafe staging is discovered.
Exception: Personnel responsible for correcting staging problems.
 - (j) Contractor representative shall immediately report any occurrence or situation that prevented entry or required the removal of personnel to NNS Marine Chemist Office (757) 380-7634. However, during third shift, weekend, or holidays call (757) 380-4031, NNS Communications Center, to contact Marine Chemist personnel on call during these periods.
 - (k) Personnel shall not open or enter any radiological controlled areas without cognizant NNS Nuclear Engineering-Radiological Control department's representative's specific authorization and approval.
 - (l) Contractors shall coordinate entry operations with their Contractor Coordinator or Field Engineer when both NNS and contractor personnel will be working in or near the same confined space.

- (m) Contractors shall exchange all available information on specific confined spaces with other employers whose employees may enter the same space, such as:
- (1) Hazards,
 - (2) Work affecting conditions within the space
 - (3) Safety rules, and
 - (4) Emergency procedures
- (n) Contractors responsible for closing confined spaces shall ensure:
- (1) The space is thoroughly searched and no personnel remain.
 - (2) Tools, excess materials, and debris are removed.
 - (3) Temporary services are removed.
 - (4) Fall guards and other barriers along with job related materials; tools, equipment, etc. are removed to an NNS approved location. Good housekeeping practices must be maintained.
 - (5) Notification is provided to NNS cognizant project management.
- (o) Each day a Contractor's representative shall provide copies of all applicable OSHA recordkeeping requirements such as test and inspection records, Entry Permits, or NFPA Certified Marine Chemist certificates to the NNS Marine Chemist Office. For work offsite, copies shall be provided to the NNS Marine Chemist (O27) designated representative on site.
- (p) All contractors shall use NNS hot and cold work permits as required by the type of work which they perform in accordance with the Fire Prevention and Control Manual.
- (q) Contractors shall ensure that spaces or adjacent spaces that have contained or contain liquids, gases, or solids that are flammable, combustible, toxic, corrosive, or irritant by nature are tested and visually inspected and determined safe for workers prior to any personnel entering. No worker shall enter or remain within a space that has airborne concentrations of hazardous materials that are IDLH (immediately dangerous to life and health). If a space cannot be ventilated to permissible levels, a Certified Marine Chemist or Certified Industrial Hygienist must re-inspect and provide additional control requirements in writing that must be followed by any personnel who enter into the space.

- (r) The following sections discuss requirements for some specific hazardous operations and locations within NNS.

5. Foundry AOD Pit

- (a) The contractor shall ensure that the following precautions are taken whenever it becomes necessary for workers to enter the AOD (Argon-Oxygen Decarbonization) Pit in the NNS Foundry:
- (1) Foundry personnel turn off and lock out as required by Procedure Y-078 the argon supply valve.
 - (2) All contractors must affix their company system lock and tag, personal service tags and locks to the group lock prior to entry.
 - (3) Adequate ventilation is provided for at least 20 minutes prior to entry and at all times while a worker is in the pit.
 - (4) The oxygen level is continuously monitored when personnel are in the pit.
 - (5) All workers entering the AOD Pit are trained in the potential hazards of confined spaces as required by the applicable OSHA regulation.
 - (6) Signs are posted in the vicinity of the ladder at the pit as required by the applicable OSHA regulation.
 - (7) Suction tubes are located within 2 feet of the bottom of the pit, providing at least one air change every 3 minutes.
 - (8) Workers will evacuate the pit immediately if the ventilation fails.
 - (9) Entry permits required by the applicable OSHA regulation are posted for each shift.
- (b) The contractor shall verify, prior to posting the entry permit, that:
- (1) The argon is locked out and tagged,
 - (2) Ventilation is operational,
 - (3) A sign is affixed at the ladder, and
 - (4) Oxygen concentration at worker level in the pit is no less than 19.5% and no more than 22%.
 - (a) Normal Oxygen levels should be 20.8% plus or minus 0.2 percent by volume.

- (b) Any deviation from normal oxygen levels should be investigated to find the cause and corrected.
- (c) Do not enter until normal oxygen levels are restored.

6. Sewage Systems and CHT Tanks

- (a) The contractor shall ensure that the following precautions are taken if it is necessary for workers to open or enter CHT tanks or sewage piping systems:

Note: Not applicable to routine water closet or toilet repairs.

- (1) All personnel must receive specific hazard communication training, including but not limited to: (a) The potential hazards of sewage and gases generated by these systems. (b) The importance of good personal hygiene, (c) measures taken to prevent exposure, (d) ability to know when one is exposed, and (e) steps to take if worker believes they are being exposed to any chemical or biological hazards.
 - (a) Contractors shall ensure that personnel are trained in the wearing and use of emergency breathing equipment.
- (2) The system must be properly isolated to prevent the reintroduction of hazards that could cause harm to workers or damage to property or release to the environment.
 - (a) Contractors shall continuously monitor atmosphere during the opening and cleaning of CHT/Sewage spaces, sewage piping systems.
 - (b) In the event an atmospheric alarm is activated, all personnel in the compartment or space shall immediately evacuate and notify NNS Communications Center by dialing 380-4031 or 380-2222 cell phone or *911 or 0-2222 NNS phone.
 - (c) If all personnel are not able to evacuate the space within 10 seconds, (contractor provided) emergency self-contained escape respirators will be issued for work in spaces.
- (3) When initially opening a sealed tank or other sewage system/components:
 - (a) Slow controlled opening of sewage systems is required. Do not remove all bolts; leave two bolts in place until seal is broken.
 - i. Only manual or air pneumatic driven equipment shall be used to open the sewage system.

- (b) As the seal is broken and the cover removed, a suction ventilation duct must be placed in the immediate vicinity of the opening to capture and ventilate any gases.
 - i. Suction ventilation shall be mechanical explosion proof type.
- (c) The ventilation duct must be lowered as far as possible into the tank without contacting the contents of the tank.
- (d) Exhaust must be clear of any intakes and pose no danger to other NNGN or contractor workers.
- (4) Cleaning methods for CHT/Sewage spaces and sewage piping systems must be in accordance with NNS Procedure Y-1119 “Disinfecting, Flushing, and Cleaning Sanitary Tanks.”
- (5) Cleaning personnel must wear suitable PPE to prevent skin contact, and supplied air respiratory equipment.
 - (a) PPE and supplied air respirators may be discontinued once the space has been isolated, cleaned, disinfected and finally designated as “Atmosphere Safe for Workers” by a NFPA Certified Marine Chemist.
- (6) Lighting shall be approved for Class 1, Group D atmospheres or equivalent.
 - (a) Explosion proof ventilation and Class 1, Group D approved lighting may be discontinued once the space has been isolated, cleaned, disinfected and finally designated as “Safe for Hot work” by a NFPA Certified Marine Chemist.

7. Handling, Use and Storage of Gases

- (a) Contractors shall ensure that their employees never use gases in the Shipyard in such a manner that could create a hazardous atmosphere. Some examples are:
 - (1) Never place an oxygen or fuel gas cylinder in a confined or enclosed space.
 - (2) Keep oxygen or fuel gas cylinders outside in open, well-ventilated areas and where they will not be damaged.
 - (3) Secure gas cylinders in an upright position with chain, wire rope, or similar method (this does not include small one pound gas bottles).
 - (4) Never leave Oxy/Air-fuel gas torches and lines unattended in confined spaces.

- (5) Oxy/Air-fuel gas lines may not be left unattended in enclosed spaces for periods longer than lunch or short work breaks.
 - (6) Oxy/Air –fuel gas lines must be removed at the end of shifts from enclosed spaces.
 - (7) Uses of oxygen and fuel gas within enclosed and confined spaces must be in accordance with additional requirements contained within NNS Health and Safety Manual, Volume II, Chapter 5, Appendix E which is available through your contractor coordinator or Field Engineer.
 - (8) Alternative practices and requirements may be offered when elements of Appendix E cannot be met. However the, alternative practices or requirements must be jointly approved by the NNS departments O27 and O15.
- (b) Contractors shall train their employees to do the following steps if they notice propane gas (rotten egg smell) or other suspicious odors:
- (1) Stop all hot work in or near the confined/enclosed space (or in the open, stop hot work in the vicinity, especially downwind),
 - (2) Have all personnel leave the space immediately,
 - (3) Call the NNS Fire Department (O15) at *911 or 0-2222 on shipyard phones, or call 380-2222 from cellular phones.
 - (4) Check ventilation and secure any possible sources of suspect gas.
- (c) Inert gas supplies, including cylinders, shall not be brought aboard a vessel without prior notification and the approval of NNS Gas Master.
- (1) Contractors shall not use inert gases aboard vessels without prior approval of the NNS Gas Master.
 - (a) Contractor shall be responsible for maintaining the conditions set forth by the Gas Master. Contractor shall notify Gas Master when each job requiring inert gas is completed.
 - (b) Inert gas usage within confined spaces or within 6 feet of any opening to a confined space must be posted with NNS inert gas confined space signs.
 - (c) Gas Master is responsible for placing and removing signs at all entrances. All other confined space signs must be removed when inert gas confined space signs are attached.

- (d) Controlled spaces must have low point exhaust and supply ventilation operating at all times workers are present. Mechanical ventilation must be operating at all times.
- (e) Special PPE, engineering, and/or administrative controls may be required for personnel working and the contractor shipyard competent persons inspecting these spaces.
 - (1) At least one member per work group must have an oxygen indicator inside the space at all times.
 - (2) All entrants must remain within 25 feet of the oxygen indicator.
- (f) Temporary enclosures affected by inert gas are considered confined spaces and shall be treated as confined spaces.
- (g) When inert gases are being exhausted or released within enclosed areas, additional engineering and administrative controls are required.
- (h) Contractor Shipyard Competent Person (SCP) must inspect area periodically each day.
 - (1) Inspection and test recording must include verification that:
 - (a) Supply and exhaust ventilation is operating.
 - (b) The exhaust must be operating at a minimum of 300 CFM.
 - (c) Oxygen level and toxic measurements must be within permissible limits.
 - (d) No hazards present to prevent safe entry.
 - (i) If a confined space is opened in the area affected by inert gas usage, the Contractor must immediately notify the Gas Master.
 - (j) Contractor SCP must perform frequent checks of worksite. Inspection and test recordkeeping to include:
 - (1) Verification that Exhaust and Supply ventilation are operating.
 - (2) Exhaust ventilation is operating at least 300 CFM.
 - (3) Oxygen level and toxic measurements must be within permissible limits.

- (4) No hazards are present to prevent safe entry.
- (5) Special instructions have been provided to contractor personnel.
- (k) Contractors planning inerting in conjunction with the performance of hot work affecting equipment, systems or structures that contained or have ever contained combustible, flammable, toxic, irritant, corrosive or combustion supportive substances must obtain the approval of an NFPA Certified Marine Chemist.
- (l) Contractor shall provide notification prior to starting work to NNS Marine Chemist Office.
 - (1) 24-hour advance notification during normal work week and before 12:00 PM on the Friday before weekend or weekend holidays prior to inerting and subsequent hot work.
 - (2) NNS reserves the right to accompany the Contractor- selected Certified Marine Chemist during the course of their inspection.

Bulk supplies of refrigerants shall not be released aboard or loaded/charged without prior notification being provided to NNS Marine Chemist and approval of the NNS Fire Safety Administrator (FSA).
 - (1) NNS FSA must approve cold work permits and contractor must obtain a Chemist's Work Permit.
 - (2) Most refrigerants in presence of ultraviolet radiation or flame result in the generation of hazardous byproducts such as phosgene and acid gases.
 - (3) Exposure to excess levels of refrigerants can lead to cardiac arrest, cardiac arrhythmia, and or asphyxiation.
- (m) Contractor shall provide continuous monitoring to detect unsafe levels of refrigerants.
- (n) Contractor shall provide all administrative, engineering, and PPE necessary to protect employees against hazards of refrigerants.
- (o) Contractor shall provide low point ventilation affected areas until system integrity has been tested and verified to be leak free.

- (p) Contractors shall treat temporary enclosures that may be affected by flammable gas, poisonous, inert or other asphyxiating gases shall be treated as (permit required) confined spaces. When gases are exhausted or leaked into a temporary structure such as a drape, tent, or canopy in which the movements of gases, dust, dirt, etc, are restricted, these enclosures can quickly become dangerous environments.

8. Spray Painting

- (a) Contractors shall ensure all requirements listed below are followed for spray application of flammable and/or combustible paints in enclosed and confined spaces on board ships in the water, ways or dry docks.
 - (1) Prior to commencing painting operations, obtain a Cold Work permit and follow all instructions on the permit.
 - (2) Enclose spray-painting areas with bulkheads, plastic sheeting, etc., to contain and prevent the spread of flammable paint vapors to other areas of the ship.
 - (3) Prohibit smoking, open flames; arc and spark producing operations in spray painting areas.
 - (4) Contractor employees shall work the “buddy system” in confined spaces.
- (b) Contractors shall provide:
 - (1) Respirators and other personal protective equipment in accordance with applicable OSHA regulations.
 - (2) A fire extinguisher and portable eye wash bottle shall be near the paint pot.
- (c) Contractors shall ensure that ventilation meets the following requirements:
 - (1) Provide sufficient suction ventilation to keep solvent vapor concentrations below 10% of the lower explosive limit (LEL).
 - (2) Discharge of ventilation exhaust shall be overboard, clear of work areas or air intakes and away from ignition sources.
 - (3) Continue ventilation uninterrupted throughout the painting and curing/drying process.
 - (4) Bond metallic parts of air moving devices to the vessel and ensure that blowers have non-ferrous blades.

- (d) If ventilation fails or if flammable vapor concentration exceeds 10% LEL, stop the operation generating flammable vapors and evacuate the area until the vapor concentration falls below 10% LEL.
- (e) Contractors shall ensure that competent persons perform combustible gas tests and maintain documentation as follows:
- (1) Monitor flammable vapor concentrations in each space during the entire spraying operation.
 - (2) At minimum, record flammable vapor concentrations in each space being spray painted:
 - (a) Prior to commencing paint spraying,
 - (b) Immediately upon completion of spray painting, and
 - (c) Each time the flammable vapor concentration exceeds 10% of the LEL.
 - (3) Record, post and maintain flammable vapor concentration readings on a form that complies with 29 CFR 1915 Subpart B.
- (f) Contractors shall ensure power and lighting cables are free of cracked and worn insulation.
- (1) Temporary electrical connections in the spray areas shall be secured in a manner to prevent separation (e.g., wrapped with electrical tape or other suitable means). (Not allowed for highly flammable paints; see II.0.9 page 14.)
 - (2) Lines shall not be overloaded and shall be suspended with sufficient slack to prevent undue stress or chafing.
- (g) Contractors shall post the following signs:
- (1) Post the following sign at each entrance to the spray area:

Danger
No Hot Work
Flammable
Spray Painting
 - (2) Post the following sign on each outside boundary of the spray area, including overhangs, decks and bulkheads on all sides of the involved spaces:

**No Hot Work
On This Surface
Wet Paint On
Opposite Side**

- (3) Post “Caution - Wet Deck” signs as appropriate.
 - (4) Monitor the drying/curing process and remove control signs when space or area has been returned to normal safe working levels.
- (h) When spray painting is completed, clean up the area and remove unused materials.
 - (i) Perform flushing with flammable and combustible solvents in accordance with Chapter 6, Fire Prevention Control Manual.

9. Spray Painting with Highly Flammable Paints

- (a) In addition to the requirements for all spray painting listed above, contractors shall ensure that requirements listed below are followed for spray application of highly flammable paints (i.e. those with flash points less than 80° F) in enclosed and confined spaces.

Note: If flash point is 80° F or greater and within 10 degrees of temperature that could be expected within the work area, the additional precautions (preventing ignition sources) listed below must be followed.

- (b) Users of aerosol cans of spray paint which have flash points below 80° F do not have to meet these requirements when the paint is used for mark-up or similar applications. When used for area painting, however, use of these paints requires adherence to this procedure.
- (c) Prior to commencing painting operations, have a competent person certify in writing that compliance with all items listed below is adequate. This certification is required to obtain the Cold Work Permit.
- (d) Ensure that staging is erected in a manner which ensures that it is safe and non-sparking (e.g., prevents metal-to-metal impact).
- (e) Ensure that all electrical ventilation equipment exposed to flammable vapors is explosion proof and bonded to the vessel.
 - (1) Fans shall have nonferrous blades.
 - (2) All motors and other electrical equipment shall be properly maintained and grounded.

(f) Tools and equipment:

- (1) Use only non-sparking paint buckets, spray guns and tools.
- (2) Electrically bond spray guns, paint pots and other metallic parts to the ship.
 - (a) Place solvent drums in the paint area on non-ferrous surfaces and bond them to the vessel.
 - (b) Bond containers and drums to each other when flammable liquids are transferred from one container to another.

(g) Clothing

- (1) All footwear shall be non-sparking, such as rubbers, rubber boots or rubber soled shoes without nails.
- (2) Use coveralls or other outer clothing made of cotton or other static-free materials.
- (3) Use only rubber, rather than plastic gloves.

(h) Lighting

- (1) Use only explosion proof lights in the spray painting area and de-energize all other lights, including temporary lights and ships lighting.
- (2) Contractors shall ensure that temporary power and lighting cables are free of cracks and worn spots.
 - (a) There shall be no temporary connections within fifty feet of the work area.
 - (b) Lines shall not be overloaded.
 - (c) Lines shall be suspended with sufficient slack to prevent stress or chafing.
- (i) No matches, lighted cigarettes, cigarette lighters, cigars or pipes or ferrous articles shall be taken into the work area. Smoking, open flames, or hot work operations shall be prohibited in the spray painting area.
- (j) Exclude others from the danger zone.
- (k) Monitor the drying/curing process and remove control signs when space or area has been returned to normal safe working conditions.

10. Solvent Cleaning and Wipe Down

- (a) Solvent cleaning and wipe down includes any operations performed in confined and enclosed spaces which involve the use of paint strippers, degreasers, emulsifiers, solvents, etc., to clean residues, paints, or other coatings from pipes, bulkheads or other surfaces. Either the solvent is sprayed, brushed, or applied with a rag.
- (b) Contractors shall obtain a Cold Work Permit prior to wiping down enclosed areas (shipboard) with products that contain flammable or combustible liquids.
 - (1) In order to obtain this permit the following conditions shall be required:
 - (a) In addition to the ventilation normally installed for this type of operation. Low Point overboard exhaust ventilation will be required.
 - (b) Electrical lines pulled back from the affected area. No connections within 50 feet.
 - (c) “NO HOT WORK” signs posted and appropriate barriers erected.
- (c) Respirators may be required to protect employees from the toxic effects of vapors. Contractors shall have a respiratory protection program in accordance with 29 CFR 1910.134, which covers these issues.

11. Abrasive Blasting

The contractor shall ensure the following requirements are met:

- (a) The maximum available exhaust ventilation shall be used and suitable access provided to ensure proper air circulation in each work area.
 - (1) Consider the quality and quantity of make-up air available (air replacing the exhausted air).
 - (2) Provide sufficient access for lines, hoses, ventilation tubing and personnel.
 - (3) Additional ventilation may be required due to:
 - (a) Large numbers of blasters in the space.
 - (b) Heavy surface corrosion.
 - (c) Dusting or breakdown characteristics of the abrasive used.

- (b) A dust collector or bag house shall capture the exhausted dust.
- (c) Potential health hazards are controlled by the use of special protective clothing and approved air-supplied blasting respirators in accordance with 29 CFR 1910.94(a). The contractor shall have a written respiratory protection program which covers use of abrasive blasting respirators and meets the requirements of 29 CFR 1910.134.

12. Entering the Utility Tunnel

- (a) In addition to confined space training, entrants are required to view a video describing the hazards and safe entry into the tunnel. The Base 1 Dispatcher, Building 78 administers this video.
- (b) Entrants must have an oxygen meter (which is not provided by Base 1).
 - (1) Entrants must test the oxygen meter to ensure that it is operational.
 - (2) Only one member of a group needs an oxygen meter providing all members are working within 25 feet of this person.
 - (3) If the oxygen meter alarms, entrants shall:
 - (a) Warn other occupants and immediately exit the tunnel,
 - (b) Notify their supervisor or coordinator, and Base 1, and
 - (c) Not re-enter the tunnel until it is tested by the EH&S Department (O27).
- (c) Entrants must complete a Tunnel Access Work Permit issued by Base 1 Dispatcher, Building 78, for each entrant or group of entrants.
 - (1) The Base 1 Dispatcher will control and keep copies of the Permit.
 - (2) Entrants must have a copy of the permit in their possession while in the tunnel.
 - (3) Permits are valid for one shift only and shall be returned to Base 1 upon completion of the job.
 - (a) Personnel may enter and exit the tunnel as required for the same job, on the same permit.
 - (b) When the job for which the Permit was issued is completed, the Permit must be returned to Base 1.

- (c) If the job carried over into the next shift, a new permit is required for that next shift. Where a shift is longer than 8 hours, the permit is only valid for 8 hours from the time issued.
 - (d) All Permits must be closed out prior to the end of the shift and the person who requested the Permit must contact Base 1 to verify that all personnel are safely out of the Tunnel.
- (4) An exception to the permit is allowed when someone must enter the tunnel to respond to an emergency. In that case, personnel entering the Tunnel shall:
- (a) Have an oxygen meter with them,
 - (b) Exit the tunnel immediately after performing the emergency operation,
 - (c) Complete the Permit after exiting the Tunnel to document the entry.
- (d) Entrants must close the tunnel hatches after entering or exiting for the tunnel ventilation to work effectively.

13. Cleaning and Other Cold Work

- (a) Contractors shall follow this procedure when performing manual cleaning and other cold work in spaces containing or having last contained bulk quantities of dangerous materials such as combustible, flammable or toxic, solids, liquids or gases.
- (b) Contractors shall obtain a cold work permit be obtained from the NNS X18 or O43 Welders Department for cleaning and other cold work.
- (c) Contractors shall:
 - (1) Remove as thoroughly as practicable all liquid residues of dangerous materials before employees start cleaning operations or cold work in the space.
 - (2) Provide continuous forced ventilation.
 - (a) Ventilation volume and flow rate shall be sufficient to ensure that vapors of dangerous materials remain within safe limits as determined by the contractor's Competent Person.
 - (b) Where provisions of adequate ventilation are not possible, respiratory protection shall be provided as required by the contractor's respiratory protection program.

- (3) Provide a trained OSHA Competent Person when combustible liquids, such as diesel oil, are used to spray-clean confined and enclosed spaces. Flammable liquids (flash points below 100° F) shall not be used as spraying agents to aid in cleaning except small quantities such as in aerosol cans. The competent person shall continuously monitor the combustible gas concentration.
 - (a) If the vapor concentration equals or exceeds 10% of the lower explosive limit (LEL), the Competent Person shall order the space evacuated until the vapor concentration is reduced to below 10% of the LEL by the forced ventilation.
 - (b) Contractors shall record these combustible gas readings on a Competent Person's Log of Tests and Inspection and shall maintain this record three months.
 - (c) Repeated instances of the vapor concentration exceeding 10% of the LEL may indicate the spray cleaning exceeds the capacity of the ventilation, and either the ventilation needs to be increased or the spray cleaning activity reduced.
 - (d) The contractor shall evacuate personnel from a space where the vapor concentration equals or exceeds 10% of the LEL.
 - (e) The competent person shall test ventilation discharge areas to determine if vapors discharged from spaces being cleaned are accumulating in other areas that would impact other employees.
 - (f) If vapors are accumulating, the contractor shall stop cleaning until the vapors have dissipated.
- (4) Clean up spills or other releases of dangerous liquids as work progresses. If spill is beyond your control, call 911 or 380-2222.
- (5) Use only explosion-proof lamps and electrical equipment in the workspace.
- (6) Use only pumps that are compatible with the substance being pump and are safe for use in Class I, Group D atmospheres to move or transfer combustible/flammable liquids during the cleaning operations.
- (7) Electrically bond air-moving equipment.
- (8) Use only non-sparking fans and air ducts.
- (9) Post signs prohibiting sources of ignition within or near the workspace being cleaned, at the entrance to the workspace, and in adjacent spaces.

14. Maintaining Safe Conditions

- (a) Contractors shall ensure pipelines that could carry hazardous materials into spaces tagged “Safe for Workers” or “Safe for Hot Work” are disconnected, blanked off, or otherwise blocked by a positive method to prevent hazardous materials from being discharged into the space.
- (b) When a change occurs which could alter conditions within a tested confined or enclosed space occurs, contractors shall stop work in the affected space or area. Work may not be resumed until the affected space or area is visually inspected and retested by the contractor’s competent person.
- (c) Contractors shall follow common industry Safe Hot work practices such as fire watch, site survey, equipment checks, drop tests, proper grounding, use of GFCI, and etc. shall be followed.
- (d) Contractors shall ensure that No hot work is allowed within confined or enclosed spaces without adequate ventilation and in confined spaces exhaust mechanical ventilation equipment is provided.
- (e) All required control measures shall be observed and practiced at all times or the job shall be stopped and employees removed from the hazardous location until required controls can be reestablished. Control measures can vary according to the job requirements. Some examples of controls are shielding, ventilation, respirators, Fire Watches, welder lenses, local exhaust ventilation, lighting, noncombustible clothing, unfrozen water lines, charged fire extinguisher, where applicable guards on equipment, line plugs, etc.

15. Baghouses

- (a) Contractors who remove or disturb the bags in a baghouse shall ensure that the workers are provided and use airline respirators or full-face negative pressure respirators, coveralls and exhaust ventilation. NOTE: When bags are removed by reaching into the dust collector and the person does not actually enter the dust collector, a half-face respirator with HEPA filters is adequate respiratory protection. The ventilation supplied to the space shall provide a minimum of 1000CFM per person inside the baghouse. If the dust in the baghouse contains more than 0.05 weight percent lead, the operation shall be performed in an established lead work area.

16. Vent Plenums

Requirements for Entry and Work in Ventilation Plenums, Trunks and Ducts.

- (a) Ventilation plenums, trunks, and ducts are confined spaces. Personnel entering and working in these spaces shall comply with all requirements of this section. Contractors with the assistance of Contractor Coordinators shall follow these steps for opening and working (including inspections) in a ventilation plenum or trunk.
 - (1) Contractors shall place a red & white confined space sign on all openings and contact the O27 Marine Chemist Section.
 - (2) Contractors shall contact the O27 Marine Chemist Section to evaluate the space and provide direction on the type of confined space sign (“Caution” yellow/black or “Danger” red/white).
 - (3) O27 will determine whether some form of fall protection is required. Generally the following three situations do not require fall protection, but final determination will be made by O27.
 - (a) Plenums with steel louvers (in good condition) installed in the opening.
 - (b) Plenums with moisture separators/mist extractors installed where it is not possible to access the opening or other fall hazards.
 - (c) Plenums that are too small to enter.
 - (4) O27 will require ventilation plenums to be posted with a durable sign stating “SAFETY HARNESS REQUIRED BEYOND THIS POINT.”
 - (5) Contractors shall contact the O27 Marine Chemist Section before making any of the following changes in condition so that atmospheric and fall protection requirements can be reassessed.
 - (a) Removing or installing screens (all types).
 - (b) Removing or installing moisture separators or other equipment in the plenum or ventilation trunk.
 - (c) Installing or removing abrasive blast protective covers or other cover.
 - (d) Constructing or removing outer hull staging for the purpose of fall protection in plenums and trunks.

- (e) Constructing or removing staging within the plenum or trunk.
 - (f) Installing or removing an approved walking/working surface cover over a plenum opening.
 - (g) Any other change that could affect air movement or create a new fall hazard from an elevated surface.
- (6) O27 will determine what confined space and fall protection signage is required based on the changed condition.

NOTE: Approved walking/working surface covers are the preferred method of preventing falls. In some cases, staging or other means may also be acceptable. Fall arrest equipment will be used when there is no other feasible method to eliminate the fall hazard and still accomplish the work. Only X36 or an approved staging contractor shall construct staging or walking/working surface covers. X11 may also install Procedure Y-1035 or O27 approved guards or covers.

- (7) Walking/working surface covers must be capable of holding twice the weight of the person(s) and their materials in accordance with Health and Safety Manual, Vol. II, Chapter 12.
- (b) Follow these steps for opening and working (including inspections) in ventilation ducts.
- (1) Contractors will place a “Danger” red & white confined space sign on all openings and contact the O27 Marine Chemist Section to evaluate the atmospheric hazards of space for the intended work and determine the appropriate safe work controls.
 - (2) O27 will evaluate the physical hazards of the space including fall hazards and make a determination whether fall protection is required. Generally, the following three situations will not require a form of fall protection, but final determination will be made by O27.
 - (a) Horizontal duct sections with no slopes, drops (i.e., vertical sections) or other fall hazards in the area.
 - (b) Horizontal duct sections with slopes, drops or other fall hazards either guarded or inaccessible.
 - (c) Horizontal duct sections with openings that cannot be bodily entered due to their small size.

NOTE: Ducts with no atmospheric or physical hazards may be posted with “Caution” yellow and black confined space signs if authorized by the Marine Chemist Section.

- (3) Generally, duct sections with slopes, drops or other fall hazards in the area will require appropriate safe work controls to protect against falls. Controls may include the following:
 - (a) Installation of safety guard rails.
 - (b) Use of a fall restraint system
 - (c) Installation of approved walking/working surface covers over the hazard.
 - (d) Restrictions requiring personnel to stay a pre-determined distance away from a potential fall hazard.

NOTE: Ducts with any atmospheric or physical hazards must be posted with a “Danger” red & white confined space sign. Additional information regarding safe work controls will be written on the back of each accompanying personnel entry tag.

- (4) Contractors shall contact the O27 Marine Chemist Section before making any of the following changes in condition so that atmospheric and fall protection requirements can be reassessed:
 - (a) Constructing or removing staging within the duct.
 - (b) Installing or removing an approved walking/working surface cover over a duct opening.
 - (c) Any other change that could affect air movement or create a new fall hazard.

Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual

Hexavalent Chromium
(Chrome Six)

HEXAVALENT CHROMIUM (CHROME SIX)

Part I General

A. Purpose

This chapter describes requirements for contractor compliance with OSHA regulations for hexavalent chromium (hereafter referred to as Chrome Six). It also describes shipyard-specific work controls designed to standardize Chrome Six activities and minimize interference with other operations in the shipyard.

Contractors working at the shipyard, especially those performing welding and burning and who disturb or remove dried paint, may encounter Chrome Six in their projects. Much of the dried paint on shipyard facilities and vessels (other than new construction vessels) contains chromate; therefore, activities that require paint removal or working on painted surfaces may result in Chrome Six exposure. Also, many types of hot work activities described below may result in employee exposure to Chrome Six. Contractors performing these operations or working in the vicinity of these activities may be subject to Chrome Six controls.

In general, contractors are required to evaluate their operations to determine their potential for performing work that may involve Chrome Six. If such work is to be performed, contractors are required to work in accordance with applicable OSHA regulations and to perform required air sampling, training and medical surveillance. In addition, contractors are required to follow Newport News Shipbuilding specific requirements detailed in this chapter.

B. Scope

The scope of this chapter includes any contractor activity that involves or generates Chrome Six.

C. Applicability

This chapter applies to any work performed at Newport News Shipbuilding facilities and on vessels where Newport News Shipbuilding is a higher-tier contractor. **This chapter provides minimum requirements for performing Chrome Six work at Newport News Shipbuilding. It does not relieve the contractor of any responsibility for compliance with requirements of OSHA hexavalent chromium regulations, including but not limited to: 1) performing work assessments, 2) implementing controls, 3) providing PPE, 4) performing training and medical surveillance, 5)**

recordkeeping, and 6) any other provision of the applicable OSHA hexavalent chromium regulation.

D. References

1. Occupational Safety and Health Standards for Shipyard Employment, 29 CFR 1915.1026, "Hexavalent Chromium"
2. Occupational Safety and Health Standards for the Construction Industry, 29 CFR 1926.1126, "Hexavalent Chromium"

E. Definitions

1. *Chromate*: Chrome Six, combined with another element, such as in lead chromate, zinc chromate, potassium chromate, sodium chromate, etc.
2. *Chrome*: Chromium
3. *Chrome-containing metal*: For the purpose of this chapter, any metal that is greater than 2.5% chromium
4. *Chrome-containing paint*: Chrome primer or any other paint which contains at least 0.05% chromium when dried.
5. *Chrome Six*: Chromium of valence state positive six. Also called Hexavalent Chromium, HexChrome, Chromium (VI), Cr(VI), Cr+6 or Cr6+.
6. *Chrome Six Work*: Any work that requires any level of work controls or PPE to comply with OSHA regulations or to meet the requirements of this chapter.
7. *Chrome Six Work Area*: Area demarcated by ropes and signs in accordance with the requirements of this chapter. Not all work which involves or may create Chrome Six requires establishing Chrome Six Work Areas.
8. *Exposure limits*: Limits established by OSHA, which trigger various aspects of the Hexavalent Chromium regulation, as follows:
 - a. *Permissible Exposure Limit (PEL)*: 5 micrograms of Chrome Six per cubic meter of air averaged over eight hours. This is abbreviated as 5µg/m³, 8-hr TWA.
 - b. *Action Level*: 2.5 µg/m³, 8-hr TWA. Employees who are potentially exposed to this level at least 30 days per year are required to be placed into a medical surveillance program.
9. *Hot Work*: For the purpose of this chapter, hot work operations are those that use an electric arc or flame to heat, burn, cut or weld metal.

10. *Paint removal*: For the purpose of this chapter “paint removal” refers to the removal of a dried paint coating using chemical or mechanical methods.

Part II Requirements

A. Written Program

Contractors with employees who are exposed to Chrome Six above the action level at Newport News shall have a written program that explains how the contractor complies with the requirements of 29CFR1915.1026 or 29CFR1926.1126 (whichever is applicable) and with Newport News specific requirements described below. The written program should describe the contractor's process for compliance with the major elements of the applicable standard and with Newport News specific requirements when working at the shipyard.

B. Notification of Work

Contractors shall notify NNS of Chrome Six work by completing and submitting form NN 9319, *Contractor Notification of Chrome Six Work*. This form is available in appendix 2 of this chapter or from Forms Viewer (requires NNS computer access).

C. Training and Medical

Contract employees who perform Chrome Six work must be trained as to the requirements of the appropriate OSHA regulation and to the requirements of this chapter. This includes:

1. Paint removal work, where the chromium content of the paint is at least 0.05%
2. Hot work (other than grinding) on any metal covered in Appendix 1 of this section.
3. Work with any chromate-containing compound.
4. Any employee who enters a demarcated Chrome Six Work Area must be trained (in addition to following any other requirements established by the lead organization for that work area).

Medical examination may be required for some personnel in accordance with OSHA regulation.

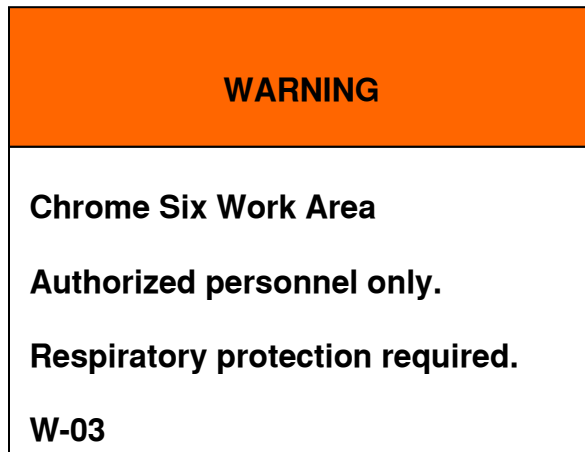
D. Determination of chromium in paint

1. Dried paint shall be evaluated to determine chromium content prior to performing dust-producing work by using one of the following methods:

- a. Samples may be taken by a state-licensed lead inspector using state-approved sampling methods.
 - b. Samples may be taken by an unlicensed individual using the guidelines in Appendix 3 of this chapter.
 - c. Contractors may rely on a manufacturer's (not supplier's) statement that the paint is chromium free. If more than one type of paint is present then this will be required for each layer. The absence of chromium on a Material Safety Data Sheet may not be used as evidence that paint does not contain chromium.
2. Samples shall be analyzed for total chromium and that value shall be taken to be the chrome six content.

E. Chrome Six Work Areas

1. Contractors shall establish Chrome Six Work Areas, demarcated by rope and signs, for the following jobs:
 - Hot work jobs in specific situations identified in Appendix 1.
 - Paint removal operations when blasting, grinding or sanding on paints with 0.05% or more Chrome and for other paint removal jobs where agreed to with the Contract Coordinator.
2. Posted Chrome Six Work Areas are not required for other jobs unless specifically directed by the shipyard.
3. Chrome Six Work Areas shall be demarcated with white or brown rope and with the sign shown below.
 - a. The rope shall be placed so that no personnel may enter the area without crossing the rope boundary.
 - b. Signs shall be posted so that they are visible to personnel approaching the roped area from any direction.
 - c. Where feasible, an entire enclosed or confined space should be isolated with ropes and signs. In other situations, confined, enclosed and open areas, ropes should extend out at least five feet from the source of each operation in the Work Area.
 - d. For certain hot work operations, ropes and signs are required only if there are three or more workers within a 200 square foot area (see Appendix 1). Two hundred square feet refers to a contiguous area, such as a single enclosed or confined space or ship compartment, or any open area.



Sign for Chrome Six Work Area

4. Only personnel who are wearing appropriate personal protective equipment (PPE), have permission of the lead organization for the work area and meet other regulatory requirements may enter a Chrome Six Work Area.
5. Persons who enter Chrome Six Work Areas must be trained.
6. No person in a Chrome Six Work Area is permitted to have with them, or to use, any food, beverages, tobacco products, gum, or cosmetics.
7. The NNS Contractor Coordinator will provide ropes and signs required by this chapter.

F. Engineering Control of Chrome Six

1. Use of engineering controls shall be the primary method to control potential employee exposures to Chrome Six. To the extent feasible, engineering controls shall be designed to minimize the need for employee manipulation of the control device.
2. Contractors shall ensure that ventilation is utilized for control of Chrome Six where required by this chapter.
3. Contractors shall ensure proper use of the ventilation to provide adequate capture of contaminants.

4. Contractors shall regularly inspect ventilation equipment to ensure that it is operating properly. If equipment operation degrades to any significant extent, Chrome Six work shall be stopped and not permitted to resume until repairs have been made.
5. Temporary ventilation used for control of Chrome Six is not required to be labeled.

G. Hygiene

Contractors shall ensure that employees wash their hands and faces immediately after contact with chrome-containing paint and prior to eating, drinking, smoking and applying cosmetics.

H. Application of Chrome-Containing Paint

1. Contractors shall not apply chrome-containing paint without written approval from the Newport News EH&S Department.
2. Requirements for application of chromate-containing coatings will be determined on a case basis by consultation between the contractor, the contractor coordinator and the Newport News EH&S office.

I. Disposal

1. Debris, including contents of vacuum cleaners, associated with Chrome Six work shall be sealed in properly labeled plastic bags and turned-over to the shipyard for disposal. See the *Waste Management* chapter of this manual for labeling procedures.
2. The shipyard Contractor Coordinator will provide specific instructions for disposal of waste.

Appendix 1 : Hot Work**Minimum of Requirements for Hot Work Operations
On Chrome-containing Metals or Using Chrome-containing Filler Materials**

Hot Work Operation	Confined Spaces	Enclosed Spaces, Ships and Modules	Enclosed Shop Spaces	Open Shops and Hangar Bay	Open Areas (Outdoors)
CAC-A	LEV and GV SAR R&S	LEV and GV SAR R&S	LEV and GV SAR R&S	LEV SAR R&S	AV SAR R&S
SMAW	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	AV APR <i>See Note 1</i>
FCAW	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	AV APR <i>See Note 1</i>
GMAW	LEV APR	LEV APR	LEV APR	LEV APR	AV APR
GTAW	LEV	GV	AV	AV	AV
PAW/PAC	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	LEV APR <i>See Note 1</i>	AV APR <i>See Note 1</i>
Torch Burning, Cutting, Heating	LEV	GV	AV	AV	AV
This table applies to use of metals with nominally more than 2.5% chromium, such as stainless steel, Inconel, and Hastalloy. This includes, but is not limited to, any use of the following filler materials:					
SMAW		GMAW		FCAW	
E8018B3L Mil-9016-B3L Mil-9018-B3 Mil-9018-B3L	Mil-8N12H Mil-1N12 E410 NiMo-15/16 Mil-410-15/16	E320 ECoCr-A Mil-308,309,310, 316, 347	ER320 ERNiCrMo-4 Mil-EN82H Mil-EN625	Mil-410 E410 NiMo Mil-308, 309, 310, 316, 347	E308LT-1 E309LT-1 E316LT-1

Notes

1. Ropes and signs are required where three or more persons are conducting these operations within a 200 square foot area.
2. When there are multiple SAW operations using Mil-100S-2F flux in the same enclosed space, additional GV is required.

Hot Work Abbreviations	
CAC-A	Carbon arc cutting – Air; carbon arc gouging
SMAW	Shielded metal arc welding; stick welding
FCAW	Flux-cored arc welding
GMAW	Gas metal arc welding, MIG welding
GTAW	Gas tungsten arc welding, TIG welding
SAW	Submerged arc welding
PAW/PAC	Plasma arc welding or cutting
PPE & Ventilation Abbreviations	
LEV	Local exhaust ventilation. For temporary LEV, duct must be maintained within one duct diameter of source; if this is not feasible, see text of this chapter for additional requirements.
GV	General mechanical exhaust ventilation
AV	Adequate ventilation. General ventilation or natural ventilation must be sufficient to prevent fumes from passing through the employee's breathing zone.
LEV and GV	Both LEV and GV are required. On shipboard and in enclosed shop areas, this means at least two exhaust tubes are required, one being used as LEV.
APR	Air-purifying respirator unless contractor provides objective data to demonstrate a lower level of protection is allowable.
SAR	Supplied air respirator unless contractor provides objective data to demonstrate a lower level of protection is allowable.
R&S	Chrome Six ropes and signs

Appendix 2: Notification Form

NN 9319 (Rev. 0)

Contractor Notification of Chrome Six Work

Contact Information

Company name: _____

Name of on-site representative: _____

Phone number of on-site representative: _____

Name of NGNN Contractor Coordinator: _____

Description of Work

Location of Chrome Six work: _____

Description of Chrome Six work: _____

Duration of Chrome Six work: From (date) _____ to (date) _____

Fax or deliver completed form to: O27 Admin Office
B. 79, Floor 1
FAX 688-6007

Appendix 3: Paint Sampling to Determine Chromium Content

1. Obtain three samples for each color of paint in or on each functional area. Do not combine samples. Use the results from the sample with the highest percentage chromium to determine Chrome Six requirements. A single sample of each color is sufficient for contiguous areas of approximately ten square feet or less.
2. Sample takers shall wear impermeable gloves. Coveralls may be necessary to protect against contamination while collecting overhead samples, or while collecting large numbers of samples. For overhead work, at a minimum, face shields or goggles are required.
3. No food, drink, tobacco, cosmetics, or personal items shall be stored or used in areas where paint samples are being taken or in any other area where the possibility of contamination exists. After taking samples, personnel shall wash their hands and faces.
4. Sample collection steps:
 - a. Mark off an area adequate to provide enough paint for the analysis (consult your laboratory to determine the amount needed for a detection limit of 0.05%). Do not take the sample from an area where rust has caused the paint to blister and not be firmly attached to the surface.
 - b. Score the paint with a knife around the edge of the area. Remove the paint inside the scored area down to bare metal.
 - c. Collect all paint chips and shavings in the sample bag. Be careful to get all the paint from each layer, so that the sample is truly representative of the entire coating system.
 - d. Identify each specific sample location with a sticker that has on it a number that corresponds to the specific sample, for ease of future reference and verification.
 - e. After removal of residual paint chips from disposable coveralls, containment and gloves, the PPE may be disposed of as non-hazardous waste (during sampling activities only).
 - f. Ensure that the area is maintained as free as practical from accumulations of paint chip debris and other potentially contaminated materials. All paint chip debris shall be collected for hazardous waste determination.
 - g. Paint chip samples shall be analyzed by a laboratory that is AIHA accredited to analyze lead samples.

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Hazard Communication

HAZARD COMMUNICATION

1. *Program and References*

- a. Employees potentially exposed to hazardous substances in the workplace have a “right to know” about these hazards and how to protect themselves as required by the OSHA hazard communication regulations: 29 CFR 1910.1200, 29 CFR 1915.1200 and 29 CFR 1926.59. Contractors at NNS must implement their hazard communication program in accordance with applicable OSHA regulations.
- b. During the NNS pre-approval process (see General Information), each contractor must provide to the NNS EH&S Department a copy of that contractor’s written Hazard Communication Program. This document must describe the contractor’s program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes to NNS on an annual basis.
- c. The requirements listed below are taken from Volume II, Chapter 20 of the NNS *Health and Safety Manual*, which is the primary NNS reference. These requirements shall be updated as necessary when this primary reference is changed.

2. *Labeling*

Except for end-use containers, the OSHA regulations require that all containers in the workplace must be labeled with: 1) the identity of the contents and 2) appropriate hazard warnings. NNS requires that at NNS, all containers, including end-use containers and temporary containers, must be labeled with the identity and hazard warnings.

3. *Material Safety Data Sheets (MSDS)*

- a. On multi-employer workplaces, OSHA requires that employers share MSDSs to ensure employees know about hazards to which they may be exposed. Contractor Coordinators at NNS must provide MSDSs to contractors for all materials that NNS provides for the contractor to use and upon request for any other materials to which they may be exposed.
- b. All contractors must provide MSDSs to NNS Dept. O27 for approval for all hazardous materials that they use while at NNS prior to use in the Shipyard. In addition to the MSDS, all contractors must provide to NNS Department O27 the quantity of material used and the applicable purchase order number. Contractors shall use the *NNS Contractor MSDS Cover Sheet* to provide this information (see Appendices).

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Lead

LEAD

1. *Hazard*

- a. Lead is a potential hazard to personnel by inhalation of airborne lead. It is also a hazard by ingestion from contact with surfaces contaminated with lead. Furthermore, lead is a hazard to the environment. Lead is found in various types of nuclear shielding as well as in many paints.
- b. Contractors that may work with or on these materials at NNS shall identify to their employees those specific situations where they may encounter lead in NNS facilities or on ships at NNS. Contractors shall obtain from their Contractor Coordinator specific information about lead hazards in the area where their contractor employees will be working.
- c. During the NNS pre-approval process (see General Information), each contractor whose personnel may be exposed to lead above the action level ($30 \mu\text{g}/\text{m}^3$), must provide to the NNS EH&S Department a copy of their Lead Safety Program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes.

2. *Regulations*

- a. Where there is potential personnel exposure to lead, OSHA requires each employer to determine the extent of exposure. If exposures may be above the action level ($30 \mu\text{g}/\text{m}^3$) the employer must establish and implement a written compliance program and comply with other requirements of the applicable regulations:

(1) 29 CFR 1910.1025 (for general industry and maritime activities)

(2) 29 CFR 1926.62 (for construction activities).

3. *Reference and Requirements*

- a. The requirements listed here are taken from Volume II, Chapter 31 of the NNS *Health and Safety Manual*, which is the primary NNS reference. These requirements will be updated as necessary when the primary reference is changed.
- b. The contractor shall ensure that lead is handled and disposed of in accordance with applicable OSHA regulations and NNS environmental permits. Where there is potential for inadvertent exposure to lead, each

NNS contractor shall ensure their contractor employees do not disturb lead materials unless their work specifically requires it and shall immediately stop work if potential exposure to lead is suspected in order to have the situation evaluated.

- c. Contractors performing lead work at NNS shall:
 - (1) Maintain current license(s) as required by the Commonwealth of Virginia, and/or the federal EPA.
 - (2) Use the same colors, format and wording for ropes and signs as NNS personnel use to identify their lead work areas. These shall be obtained from the contract coordinator.
- d. Contractors shall develop and submit to the Contractor Coordinator a written lead work plan:
 - (1) This plan must detail how the contractor will perform lead operations and maintain compliance with applicable regulations.
 - (2) The contractor must have this plan approved by NNS, department O27 prior to the beginning of lead work.
- e. Contractors shall ensure unprotected personnel are not exposed to:
 - (1) Airborne levels of lead above the action level, or
 - (2) Surfaces contaminated with lead, which may present a health hazard to unprotected personnel.
- f. Contractors shall ensure that all lead and zinc material (e.g., blocks, shavings, turnings, scrap or components assembled with lead or zinc materials) are protected from contact with storm water, by ensuring the following:
 - (1) Materials are stored up off the ground, and
 - (2) Materials are covered with firmly anchored tarps, a covered structure or equal protection which:
 - (a) Completely shields the lead or zinc from contact with storm water, and
 - (b) Is maintained in good repair.

Northrop Grumman Newport News
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Organotin Paints

ANTIFOULANT PAINTS CONTAINING TRIBUTYL TIN

At NNS, some commercial ships that are being worked may be coated with tributyl tin-containing antifoulant paints. Tributyl tin (TBT) is one of several organotin compounds that may irritate the skin and eyes and also the respiratory tract. It is extremely toxic to shellfish; therefore, poses a hazard in the environment. It is essential that removed paint and paint overspray be kept out of the river, and that use of TBT paints be limited only to those surfaces that are subjected to fouling by aquatic organisms.

In the State of Virginia, the Department of Agriculture and Consumer Services (VDACS), Office of Pesticide Management controls use of TBT-containing paints. Handling and use of these paints must be done under the on-site supervision of a certified pest control applicator licensed to work with marine antifoulant paints. To purchase, store, or use TBT paints, a company must have a business license issued by VDACS. NNS requires the contractor to have the business license and sufficient certified applicators to meet the Virginia regulation.

Prior to use of any paint containing TBT (or any organotin tin compound), a copy of the Material Safety Data Sheet and a “new paint approval” form must be provide to the EH&S Department for review and authorization. Ropes and signs must be provided in appropriate areas to prevent unauthorized and unprotected personnel from entry into an area where TBT is being worked.

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Sewage

SEWAGE

1. *Hazard, Reference and Requirements*

- a. Sewage is a potential hazard to personnel by skin contact, and in confined or enclosed spaces due to toxic gases, oxygen deficiency and potential explosion.
- b. Before working with sewage or sewage systems each contractor whose personnel may be exposed to sewage, must provide to the NNS EH&S Department a copy of that contractor's written Sewage Safety Program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s). The contractor shall provide a copy of any changes of their program to NNS on an annual basis
- c. The following requirements are taken from Volume II, Chapter 35 of the NNS *Health and Safety Manual*, which is the primary NNS reference. These requirements will be updated as necessary when this primary reference is changed.
- d. Contractors whose employees may work on sewage systems at NNS shall ensure compliance with the following requirements as applicable:
 - 1) Training
 - 2) Monitoring.
 - 3) Personal protective equipment.
 - 4) Posting.
 - 5) Spill response and emergency notification.
 - 6) Confined space chapter of this manual.

2. *Training*

- a. Contractors shall ensure that at a minimum all their employees receive training on the following topics:
 - 1) Types and hazards of sewer gases and biological agents encountered while performing maintenance or repairs on sanitary sewage systems.
 - 2) PPE (Personal protective equipment) and other controls, which are required for this type of work.

- 3) Training in confined space entry and the hazards of oxygen deficiency and toxic gases in confined spaces.
- b. Contractors shall ensure that their employees who will be required to open or enter sealed sewage systems receive additional training in the following topics:
 - 1) The general nature of the sewage systems they are required to work on and the hazardous conditions they may encounter.
 - 2) The applicability of lockout and/or tagout to these operations.
 - 3) The requirement for and operation of personal hydrogen sulfide monitors.
 - 4) The requirement for and use of escape respirators.
 - 5) The actions to be taken in the event of an alarm.
 - 6) The set-up of the work area (signs, ventilation, etc.)
 - 7) Exception – the requirement for this training does not apply to the removal and installation of toilets, sinks, and similar plumbing fixtures in buildings.

3. *Monitoring*

- a. Contractors shall require their employees to use hydrogen sulfide monitors in enclosed spaces where there is the possibility of exposure to sewer gases.
 - 1) This includes operations such as entering tanks and pits where sewage is present and opening pipes and tank covers in enclosed areas.
 - 2) Contractors shall require employees directly involved and closest to the potential source of the gas to have personal hydrogen sulfide monitors.
- b. Personal hydrogen sulfide monitors shall **not** be used for confined space entry. They only warn of changing conditions in a space where entry has already been approved.

4. *Personal Protective Equipment and Practices*

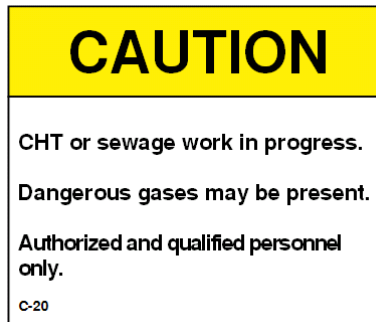
- a. Contractors shall require their employees to wear gloves when there is potential for contact with sewage or surfaces potentially contaminated with sewage.
 - 1) Contractors shall select appropriate waterproof gloves with a degree of puncture resistance consistent with the work being performed.

- 2) Gloves may be reused if they are intact and interiors have not been contaminated.
 - (a) Gloves shall be washed with soap and water before being stored.
 - (b) Gloves must be discarded if they are cracked, peeling, discolored, torn, punctured or exhibit other signs of deterioration.
- b. Contractors shall require their employees to wear face shields whenever there is a potential for splashes or spray resulting in nose or mouth contamination.
- c. Contractors shall require their employees to wear full-face air-supplied respirators where airborne droplets may be present, such as high-pressure water washing of contaminated surfaces.
- d. Contractors shall require their employees to wear air-purifying respirators with HEPA filters where airborne dry dust may be present.
- e. Contractors shall require their employees to wear waterproof suits if there is a potential for significant liquid contamination of skin or clothing.
 - 1) Tyvek or similar moisture resistant disposable coveralls may be worn where extensive contact with liquids or wet surfaces is not anticipated.
 - 2) Contractors shall require their employees to wear waterproof shoe covers if there is a potential for significant contamination of shoes.
- f. Good personal hygiene is the most important and effective method for preventing illness caused by biological organisms that may be present in sewage.
 - 1) Contractors shall require their employees to thoroughly wash their hands after all sewage work, no matter what other controls are used.
 - 2) Contractors shall require their employees to remove:
 - (a) Gross contamination prior to removal of personal protective equipment, and
 - (b) All PPE immediately upon leaving the work area or as soon as possible.
 - 3) Contractors shall require their employees to wash their hands with soap and water as soon as possible after removing gloves and other protective equipment.

- g. Contractors shall issue their employees Self-contained emergency escape respirators for work in spaces where all persons cannot exit within ten (10) seconds.

5. *Signs*

- a. The following requirements:
 - 1) Apply to opening intact sewage plumbing systems except where the system has been flushed and is isolated from sources of raw sewage, but
 - 2) Do not apply to the removal and installation of toilets, sinks and similar plumbing fixtures in buildings.
- b. Contractors shall ensure that signs with the following wording are posted at the entrance to the work area:



6. *Spill Response and Emergency Notification*

- a. Contractors shall call the NNS Marine Chemist office (380-7634 or 688-1636) prior to entry into enclosed or confined spaces containing more than several gallons of spilled sewage. This does not apply to simple toilet overflows, but does apply to main line sewage backups.
- b. In the event of a hydrogen sulfide alarm, contractors shall:
 - 1) Immediately evacuate all persons in compartment or space.
 - 2) Mark the entrance to the space with red tags to prevent entry. Notify the NNS communications center by dialing *911.

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Ionizing Radiation

Ionizing Radiation

Do not bring sources of ionizing radiation (radioactive isotopes and/or X-ray equipment) onto Newport News Shipbuilding property without the prior authorization of a designated shipyard Radiation Safety Officer (RSO). Contractors shall provide a copy of their applicable radiation safety program and a description of their planned activity to the shipyard Environmental, Health and Safety department (EH&S) and must obtain EH&S approval prior bringing radioactive material or equipment and items that emit ionizing radiation into the shipyard for demonstration or work purposes. EH&S will evaluate the proposed work for approval and forward the request to the cognizant radiation safety program RSO for action. Contractors will be allowed to use their equipment or material that emits ionizing radiation on Sector property only upon approval of the applicable program RSO.

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Other Potential Hazards

OTHER POTENTIAL HAZARDS

Other specific hazards to which contractor employees may be exposed at NNS include the following:

- a. Benzene — from cleaning tanks which had previously contained the chemical
- b. Radar — from working on ships. Control — look for signs describing this hazard in certain areas at certain times.
- c. Silica — from jack hammering or sawing concrete and insulating or abrasive cleaning ovens and furnaces. Sand blasting with silica sand is not permitted at NNS (except in blast cabinets); however, some abrasive blast grits do contain small levels of silica (<1%) which could create measurable silica exposures.
- d. Cadmium — from brazing operations, work with some corrosion-resistant fasteners and in shipboard tanks protected with “zincs.”
- e. Fiberglass — from working with insulation, etc. Also encountered during cutting or abrasive work on fiberglass composite materials.

It is the responsibility of each contractor to ensure their compliance with applicable OSHA regulations and guidelines involving these and any other materials or situations which their employees may encounter.

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Part III – Managing Environmental Hazards

Part III — MANAGING ENVIRONMENTAL IMPACT

A. GENERAL

Newport News Shipbuilding (NNS) is a large complex facility fronting on the James River, incorporating many and varied industrial operations. As such, operations at NNS have a potentially significant impact on environmental quality. All contractor employers conducting operations at NNS must comply fully with all applicable environmental laws, rules, regulations and permits. Federal and state environmental requirements hold NNS accountable for the actions of contractors and subcontractors. Failure by the contractor to abide by all applicable environmental laws, rules, regulations and permits can be considered a breach of contract and result in a suspension or contract termination.

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Waste Management

WASTE MANAGEMENT

1. *Purpose and Scope*

- a. The purpose of this section is to provide contractors with information necessary to ensure environmental protection and proper management of hazardous and non-hazardous waste generated while working at NNS. This section also establishes requirements for the management of regulated waste generated at NNS and describes emergency response procedures and resources.
- b. This section applies to all personnel performing the scope of operations listed above, including NNS contractors, subcontractors and NNS customers. This section covers waste management including hazardous wastes, universal waste and other regulated wastes such as asbestos and PCBs. Contractors shall obtain approval from the EH&S Department for questions concerning the requirements of this guidance document.

2. *References and Regulations:*

- a. The requirements listed in this section are taken from NNS Procedure S-1005, *Requirements for Managing Hazardous Waste*, and EM-1000, "The Environmental Controls Manual." These are the primary NNS references. These requirements will be updated as necessary when these references are changed.
- b. Requirements in federal regulations for hazardous waste operations are located at
 - (1) 40 CFR Part 262, "Standards Applicable to Generators of Hazardous Waste"
 - (2) 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities," Subparts C and D, "Preparedness and Prevention" and "Contingency Plan and Emergency Procedures"
 - (3) 49 CFR Department of Transportation, Parts 171, 172, 173, 177, 178
 - (4) 49 CFR Part 273, "Standards for Universal Waste Management"
 - (5) 29 CFR 1910.1200, "Hazard Communication."

- (6) 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," paragraph (p), "Certain Operations Conducted Under the Resource Conservation and Recovery Act of 1976 (RCRA)" and
 - (7) 40 CFR 273 Standards for Universal Waste Management.
- c. Requirements in Virginia regulations for hazardous and solid waste operations are at:
- (1) 9VAC 20-60-et seq., "Virginia Hazardous Waste Management Regulations"
 - (2) 9VAC 20-80-eq seq., "Virginia Solid Waste Management Regulations"
 - (3) 9VAC20-60-273 "Adoption of 40 CFR Part 273 by Reference"

3. *Waste Management Information Sessions*

- a. Contractors generating or managing waste at NNS shall attend annual training on waste management, as required by Reference b.1, provided by their employer. The training should focus on proper waste management practices, such as, but not limited to the following:
- (1) Proper waste handling and container storage requirements
 - (2) Proper container labeling
 - (3) Emergency response information and spill notification
 - (4) Daily requirements for blasting operations
 - (5) Requirements for paint mixing operations
- b. Contractor personnel required to attend include:
- (1) Health & Safety Officers
 - (2) On-site Project Managers
 - (3) Designated personnel that would be responsible for managing a waste area
- c. Contractor operations generating waste at NNS must be managed in accordance with this section and with EM-1000, "Environmental Controls Manual."
- d. Contractors are utilized by NNS facilities, ship repair and overhaul operations, and new construction operations for projects throughout the

shipyard. Waste (other than garbage and refuse) must be tested or identified using process knowledge to determine any hazardous waste characteristics are present. Wastes requiring testing or hazardous waste evaluation include, but are not limited to the following:

- (1) Spent abrasives
 - (2) Demolition/construction debris
 - (3) Operations generating paint debris
 - (4) Operations generating oily debris
 - (5) Excavated soils and/or debris
 - (6) Rags used in degreasing/painting operations
 - (7) Rags/debris generated from lead operations
- e. Contractors working in the yard may encounter waste materials that must be managed properly for disposal. Such waste items include:
- (1) Fluorescent light ballasts which may contain Polychlorinated Biphenyls (PCBs)
 - (2) Fluorescent and Mercury light bulbs must be managed as Universal Waste.
 - (3) Used batteries containing lead, nickel, or cadmium must be managed as Universal Waste.
 - (4) Partially used paint buckets and aerosol cans.
 - (5) Construction debris possibly containing asbestos materials

4. ***Hazardous Waste Generator Requirements***

- a. Responsibility: Contractors generating hazardous waste shall manage it according to the requirements listed in this section and references b. (1). - (6), and c- (1) listed above.
- (1) All hazardous waste generated by the proper performance of work packages, scope of work, etc. will be disposed of by NNS using NNS' EPA ID number.
 - (2) Hazardous waste generated that is not associated with contracted work or a scope of work, such as abandoned or material left behind, shall be

disposed of using NNS's EPA ID number, but shall be the financial responsibility of the contractor.

- (3) Improper handling or disposal of hazardous waste and hazardous materials is a breach of contract and can lead to possible suspension from the yard or contract termination.
 - (4) Notify EH&S if this results in conflicting regulatory or NNS requirements.
- b. Identification of hazardous waste: Contractors shall contact the Environmental Engineering section of EH&S prior to generating suspect hazardous waste. Environmental Engineering shall identify whether or not a waste is a hazardous waste and provide guidance as requested. Be prepared to provide the following information about the waste:
- (1) Description of the process generating the waste.
 - (2) Provide name of the materials and MSDS used in the process.
 - (3) Description of the waste (e.g. physical state, odor, and/or color).
 - (4) Amount expected to be generated.
 - (5) Container used, or expected to be used.
- c. Generating waste: Contractors shall notify EH&S when hazardous waste or waste hazardous material will be generated or if the composition of an existing waste changes, or if the process generating a waste changes.
- (1) Notify EH&S when planning and/or scheduling an operation which could generate hazardous waste.
 - (2) Determine the composition of hazardous waste based on the materials used in the operation and type of operation. This information will be used by EH&S to determine the hazards associated with the waste and the appropriate handling precautions.
 - (3) Establish handling precautions before starting an operation which could generate a hazardous waste.
- d. Contractors generating hazardous and/or non-hazardous waste shall manage, package, and label the waste containers in accordance with the following section:

5. *Packaging Requirements*

- a. Container Size: Package waste material in a 55-gallon drum. Smaller containers and bulk waste containers shall be approved by EH&S.
- b. Container Material: Ensure the waste is compatible with the container material. For example, do not package waste that dissolves plastic in a plastic drum or a corrosive liquid in a mild steel drum.
- c. Leaks: Correct leaking containers immediately. Transfer the waste material into another container or overpack the entire container.
- d. Reusing Original Container: Package waste in its original container when possible. If this is not practical, package it in a new DOT-approved container. Do not package hazardous/non-hazardous waste in a severely rusted or dented container. Do not use containers that have crane-lift holes drilled in the sides.
- e. New Container: Use the following DOT-approved containers for packaging waste if the original container is unacceptable:
 - (1) NNPN 3703406 (Bolt and Ring Top)
 - (2) NNPN 3703410 (Bung Top)
 - (3) NNPN 3703403 (Plastic Lined)
 - (4) NNPN 3703405 (85-gallon overpack)
- f. Labels:
 - (1) Label all waste containers prior to generating waste with one of the following:
 - (a) Waste Label (form NN4651 NNPN 3321836) for non-hazardous wastes (see Appendix H)
 - (b) Hazardous Waste Label (form NN7029 NNPN 15278621)
 - (c) Universal Waste Light Bulbs (form NN7067 NNPN 16575967)
 - (d) Universal Waste Batteries (form NN7068 NNPN 16575958)
 - (2) Use a permanent marker prior to adding waste to the container and provide all information requested on that label including where to ship the waste.

- (3) Remove or paint out any old or inapplicable markings or labels. A paint stick or paint tube may be used to temporarily label containers. However, containers shall be permanently labeled prior to being transported by the Onsite Hazardous Waste Contractor (OHWC).
 - (4) Contact your Contract Coordinator or the OHWC for waste labels. Unlabeled or misidentified waste containers must be managed as suspect hazardous waste. Mislabeling waste containers can delay production schedules and require expensive testing procedures.
- g. Keep Containers SEALED
- (1) Only open containers when either adding or removing waste.
 - (2) Ensure all tops and lids have bung tops and ring/bolts.
 - (3) All removable lids must have ring “gaskets.”
 - (4) All tops must be secured and non-leaking. Containers missing tops/lids and closed by poly sheeting taped to the container are unacceptable.
- h. Line the drum exterior. Contractors generating paint and thinner waste must line the exterior of the 55-gallon drums with poly or stretch wrap. This eliminates excess waste on the exterior of drums and reduces overpack costs.
- i. Empty Paint Buckets: Used, empty paint buckets must be managed in an orderly fashion to prevent accumulation of excess buckets and reduce the chance of spills.
- (1) Partially used buckets must be closed when not in use or under direct supervision of the user.
 - (2) Used (empty) buckets must be placed upside down on a pallet that has been covered with poly or cardboard.
 - (3) Punch holes in the bottom of the buckets to allow air flow and further drying
 - (4) Stack up to 6 buckets upside down on the pallet.
 - (5) Cover the buckets with poly and secure with tape.
 - (6) Secure load to pallet.
 - (7) Contact transportation and ship the empty buckets to Stop 550. Refer to Section III. C. “Liquid Waste and Water Pollution Prevention” in this

manual for further information on proper container handling and spill prevention.

j. Onsite Management of Universal Waste Batteries

1. Storage of Universal Waste Batteries:

- (a) Universal waste batteries shall be stored in EE approved <90 day Hazardous Waste Accumulation Areas (HWAA).
- (b) Workers shall label all universal waste battery containers with the Universal Waste Label as described in this section, 5.f
- (c) Workers shall tape battery terminals with electrical tape before placing the battery into the universal waste container or drum.
- (d) Universal waste shall be picked up by the OHWC within 70 days of the accumulation start date.
- (e) Refer to [Section 3](#) of EM-1000 for HWAA requirements.

NOTE: "Onsite" means the same or geographically contiguous property, including the scrap yard and paint warehouse across Warwick Blvd.

2. Transporting Universal Waste Batteries:

- (a) Universal waste batteries shall only be transported by Universal Waste Handlers to the EE approved HWAA.
- (b) Only the OHWC is approved to transport Universal Waste Batteries from HWAA's to Stop 788.

3. Disposal of Universal Waste Batteries By the Onsite Hazardous Waste Contactor (OHWC):

- (a) The OHWC transports universal waste from HWAA's to Stop788 for shipment and final disposition out of the shipyard.
- (b) Universal waste batteries shall be recycled by the Onsite hazardous Waste Contractor (OHWC).

k. Onsite Management of Universal Waste Light Bulbs

1. Storage of Universal Waste Light Bulbs:

- (a) Universal waste light bulbs must be stored in EE approved <90 day Hazardous Waste Accumulation Areas (HWAA).
- (b) Waste light bulbs shall be boxed in original boxes or an equivalent sized box, labeled in accordance to Part Two, C of this section and stored out of the weather.
Note: Do not tape bulbs together.
- (c) Broken bulbs shall be bagged and stored in a 55 gallon drum or other EE approved container. Refer to Q-1043 Mercury Control Manual for proper handling of broken bulbs.
- (d) Ballast waste from light bulb removal:
 - i. Ballasts marked with “No PCBs” or a known manufacture date after 1998 shall be labeled, stored, and disposed of as non-hazardous, non-PCB waste referenced in [Section 3](#) of EM-1000.
 - ii. Ballasts removed from light fixtures, either with an unknown manufacture date and not marked “No PCBs” shall be labeled, stored and disposed of as PCB Ballasts per [Section 4](#) of EM-1000.

2. Transporting Universal Waste Light bulbs

- (a) Only the OHWC is approved to transport universal waste light bulbs from HWAAAs to Stop 788.

3. Disposal of Universal Waste Light Bulbs by the OHWC

- (a) Universal waste light bulbs shall be disposed of by the Onsite Hazardous Waste Contractor (OHWC).
- (b) The OHWC transports universal waste from HWAAAs to Stop788 for shipment and final disposition for recycling.

1. Offsite Management of Universal Waste Batteries and Bulbs

- 1. Contact Environmental Engineering (O27) 8-5523, if generating Universal Waste offsite.

6. *Accumulation Waste Area Types/Dating Requirements*

a. Satellite Accumulation Area (SAA):

- (1) A total of 55 gallons of waste may be accumulated in this area.

- (2) Once container is full or the project is completed, date the label and call OHWC to pick up waste within 72 hours. See Section 5.f. for additional requirements.
 - (3) Post each SAA with a "SAA" sign (provided by O27).
 - (4) Establish your SAAs within "line of sight" of the waste generation so it is always under the control of the operator.
- b. <90 Day Hazardous Waste Accumulation Area (HWAA) - Bulk Waste Accumulation Area Requirements
- (1) Responsibility: A contractor that accumulates more than 55 gallons of a hazardous waste for more than 72 hours shall manage that waste according to requirements listed in sections 2 and 4 of this part (pages 1 and 3). The contractors requiring bulk storage will coordinate all storage and shipments with the OHWC. NNS is not permitted to store hazardous waste longer than 90 days.
 - (2) Facility Description: Bulk waste accumulation areas are used to accumulate large amounts of hazardous waste. These areas utilize large roll-off boxes as the bulk hazardous waste container.
 - (3) Closed Container: Contractors shall keep the bulk container closed, except when it is necessary to add or remove hazardous waste.
 - (4) Container liners: Contractors storing/disposing of hazardous waste shall line each rolloff with a liner prior to adding waste to the rolloff.
 - (5) Mixing Waste: Ensure that hazardous waste is approved by EH&S or the OHWC before placing it into the container. Bulk waste containers are used for only one type of waste approved by the disposal site.
 - (6) Labeling: Hazardous waste must be on these waste containers and the date that waste is first placed into the rolloff container. See Section 5.f. for additional requirements.
 - (7) Weekly Inspection: Inspect and inventory the container(s) daily. Notify EH&S and the OHWC immediately if the container begins deteriorating or if there is any evidence of leakage.
 - (8) Accumulation Time Limit: Ensure the container is shipped off-site within 90 days. Notify the OHWC to remove waste by the 70th day of the container date. The OHWC can be reached at 688-7804.
 - (9) Post the area with a "HWAA" sign (provided by O27)
 - (10) Keep a spill kit and fire extinguisher in the area at all times.

- (11) The OHWC will conduct and document weekly inspections for all HWAAs.

c. Requirements for Both Areas:

- (1) Must be established and approved by the Environmental Engineering (EE) section of EH&S before generation of waste. This includes areas that need to be moved to a new location.
- (2) All hazardous waste areas must have a sign posted, which will be provided by EE.
- (3) Once a project ends, the area must be closed. Signs must be returned to EE within 24 hours of closing site.
- (4) Label all containers in accordance with 5.f. of this section.
- (5) Container Material: Ensure hazardous waste is compatible with the container material before accepting waste into the area.
- (6) Use containers in good condition. Keep containers closed/sealed and upright unless adding or removing waste. A sealed container means that bungs and lids are closed tightly and lid gaskets are in place.
- (7) Segregate waste streams, such as, aerosol cans, oil/grease, solid and wet paint, and batteries (tape the terminals on lead acid and NiCad batteries).

7. Vacuum Cleaner Requirements

- a. Vacuum cleaners must be managed in accordance with Y-1099.
- b. Contact O27 for the proper management of your vacuum cleaner.

8. Rad Source Instrumentation Use Requirements

- a. Personnel needing to bring in instruments with licensed quantities of a radiological source must contact EE at least two days prior to entering the yard. Contractors must receive approval for bringing in instruments containing licensed radiological quantities in the yard.

9. Transportation Requirements

- a. Hazardous waste transportation: Notify the OHWC at 688-7804 to arrange for transportation of hazardous waste from the worksite to a 90-day accumulation area or the Chemical Waste Treatment Plant (CWTP).

- b. Generators as transporters: Contractors shall not transport hazardous waste to a 90-day accumulation area or the CWTP.
- c. Material Receipt: Sign the Waste Material Transfer form (provided by the OHWC) for each type of hazardous waste being transported to a 90-day accumulation area or the CWTP. The OHWC will fill out the form and provide the contractor with a copy.
- d. Non-hazardous waste transportation: Materials designated to be non-hazardous shall be transported to Stop 550. Contractors and/or Contract Coordinators shall package the waste in accordance with this section and contact the Transportation Department (O54) at 0-3113 to arrange for transportation to Stop 550.

10. *Waste Spill Response*

- a. Contractors are responsible for preventing and controlling spills to the best of their ability. Contractors are responsible to have spill cleanup materials such as spill pads and absorbent on hand when working with hazardous waste and hazardous materials.
- b. Initial Notification: In the event of a hazardous material emergency or incident involving hazardous waste, personnel shall **Call *911, 0-2222 or 380-2222 for cell phones.**
- c. All materials brought into the shipyard must be approved for use by EH&S. Potentially hazardous materials used at NNS have a Material Safety Data Sheet (MSDS) on file. A computer program containing these MSDSs is maintained by the EH&S Department to allow rapid access and identification of the material's chemical composition and hazards. The program also provides spill clean up and first aid instructions.
- d. The shipyard developed "Best Management Practices" to prevent materials from reaching storm drains, industrial drains, and releases to the river. For further information regarding a hazardous waste spill refer to Section III.C; "Liquid Waste and Water Pollution Prevention."
- e. Spills resulting in fines, violations and/or penalties caused by the actions of a contractor shall be the responsibility of the contractor.

**Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual**

**Oil and Other Liquid Hazardous Material Transfer
Operations**

OIL AND OTHER LIQUID HAZARDOUS MATERIAL TRANSFER OPERATIONS

1. Regulations

- a. NNS transfers oils and oily wastes in accordance with the following Coast Guard regulations: — 33 CFR parts 126, 154, 155 and 156. Compliance with these regulations is given in the Newport News Shipbuilding Manual for the Transfer of Oils and Oily Wastes. This is also known as the Coast Guard Operations (Ops) Manual.
- b. Response plans have also been developed in accordance with these regulations and Virginia regulation 9 VAC 25-90-10 *et seq* resulting in the U.S. Coast Guard Facility Response Plan.
- c. A Spill Prevention, Control and Countermeasures Plan has also been developed in accordance with 40 CFR 112, as well as provisions for the EPA Facility Response Plan.
- d. Contractors involved with the transfer of oil or other liquid hazardous materials shall obtain copies of the NNS plans mentioned above, and shall ensure compliance with the applicable requirements in these plans.
- e. Contractors who are required to notify* the Captain of the Port (United States Coast Guard) prior to transferring oils or oily wastes must first notify EE at 8-5523. If after hours, leave a message and proceed with U. S. Coast Guard notification.

2. Requirements

- a. All contractor employers shall report any and all spills to the communication center at *911 or 0-2222 (380-2222 for cell phones).
- b. Contractor employers shall not discharge oil, grease, fuel, other petroleum products, or hazardous material to the James River, IW outfalls, storm water outfalls or the sanitary sewer. Contractor employers shall contact the Environmental Engineering section of EH&S (O27) prior to transfer of any oil or hazardous material to determine applicable and appropriate requirements. The following requirements apply to all such transfers:
 - 1) A properly trained NNS Person-In-Charge shall supervise every transfer.

* See U. S. Coast Guard letter Number 16611.

- 2) The contractor employer shall complete a Declaration of Inspection.
 - 3) The contractor employer shall measure the transfer amount and receiving container capacity.
 - 4) The contractor employer shall ensure proper communications between transfer participants as per the above-mentioned plans.
- c. Contractors shall not add dispersants or emulsifiers (e.g. Joy dishwashing detergent) to oil for the purposes of discharging the resulting mixture or dispersing a spill.
 - d. Contractors shall use secondary containment, drip pans or other protective containers for all storage and transfer operations to catch incidental spillage and drips.
 - 1) Secondary containment shall have a capacity of 110% of capacity of the largest container in any single group or containers of 55 gallons or greater.
 - e. Contractors shall remove oil-contaminated material, and spill cleanup material from a drydock as soon as possible and in all cases prior to flooding the drydock.
 - f. Contractor employers shall contact the Environmental Engineering section of EH&S (O27) for instructions on the control and removal of discharged oil or hazardous material. Contractor employers shall ensure that cleanup is carried out promptly after an oil spill or a hazardous material spill is detected. Contractor employers shall conveniently store oil-absorbent materials so that they are immediately available in the event of a spill.
 - g. Contractor employers shall inform EE of design-phase projects involving oil transfer or storage facilities.
 - h. Contractor employers shall report any proposed change in the design, construction, operation, or maintenance of the facilities to EE.
 - i. Contractor employers shall properly dispose of recovered oil, hazardous material, and contaminated materials recovered from the cleanup of spills.

**Newport News Shipbuilding
Contractor Environmental, Health and Safety
Resource Manual**

Liquid Waste and Water Pollution Prevention

LIQUID WASTE AND WATER POLLUTION PREVENTION

1. *Hazard, Regulators, References and Requirements*

- a. NNS has many industrial processes and materials that have the potential to cause pollution of the waterways, the sewer or ground water. In order for NNS to better protect the environment, all employees, contractors, subcontractors, navy personnel and visitors are responsible for the protection of the environment.
- b. NNS is regulated by various government agencies including Environmental Protection Agency (EPA), Virginia Department of Environmental Quality (VDEQ), the Coast Guard and Hampton Roads Sanitation District (HRSD)
- c. Requirements for Disinfecting Water Systems and Tanks are taken from:
 - 1) NNS Procedure X42-17.12, Disinfection of Drinking Water Systems and Tanks on Ships.
 - 2) NNS Procedure O67-18.1, Disinfecting, Flushing, and Cleaning Sanitary Tanks.
 - 3) NNS Procedure Y-1004, Best Management Practices for Abrasive Blasting and Painting.
 - 4) NNS Procedure Y-1075, Water Pollution Control for Dry Docks, Piers and Outfitting Berths.
 - 5) NNS Procedure EM-1000, Environmental Controls Manual.
- d. These are the primary NNS references for these operations. The requirements discussed below will be updated as necessary when these primary references are changed.
- e. Appendix D of the EM-1000 is a list of products not acceptable for use at NNS. HRSD determined the products listed to be unacceptable for discharge into the sewage system to protect the Publicly Owned Treatment Works (POTW) from a plant upset.
- f. The following two sections (2 & 3) provide instructions for wastewater environmental disposal. These sections do not specify procedures for protecting personnel and/or equipment from the materials used to disinfect the systems. It is the responsibility of the contractor employer to ensure personnel protection and safety, protection of equipment and systems, and prevention of possible catastrophic releases of hazardous materials.

- g. The next three sections (4, 5 & 6) establish the environmental protection requirements for managing liquid waste and industrial wastewater (IW). These requirements are applicable to all operations and facilities that could affect the James River and/or groundwater.
- h. Contractors shall adhere to these sections to minimize the environmental impact of their operations and help ensure compliance with applicable federal, state, and local regulations, NNS environmental permits and policies.
- i. No water or debris shall be allowed to enter any drain unless approved by EE.
- j. Wastewater from Contractor bathrooms, sinks, and washbasins is not allowed to be discharged to the ground, storm drains, Dry Docks, or to the river. Contractor trailers with bathrooms that are desired to be used must request via their contractor coordinator for a connection to the sewer to be made.

2. Disinfecting Potable Water Systems and Tanks

- a. The contractor employer shall ensure that:
 - 1) No chlorinated water from the disinfecting process is discharged without prior approval from the Environmental Engineering section of EH&S (O27), and
 - 2) The tank(s) receiving the chlorinated water from the disinfecting process are sampled to ensure the water meets the HRSD permit requirements before any discharge is made to the city sewer system.
- b. The NNS “Chain of Custody” form (COC) shall be used to trace the handling and possession of a sample from the time of collection to arrival time at NNS Laboratory Services Department (O31).
 - 1) The COC is essential to ensure sample integrity from collection to data reporting and may be used as a legal document. All potable water samples taken to the NNS Laboratory Services Department (O31) for analysis must have a COC.
 - 2) Contractor employers (or the contractor coordinator) shall contact the Laboratory Services Department (O31) to obtain the COC forms and instructions on completing the form.
- c. Before discharging chlorinated water from the disinfecting process, the contractor employer (or contractor coordinator) shall complete a COC and submit it with the sample to Laboratory Services Department (O31) for an

analysis of chlorine and pH levels in the water of the receiving tank. Laboratory Services Department (O31) will forward a copy of the analysis results to the Environmental Engineering section of EH&S (O27) and to the contractor coordinator to determine any additional actions needed to the tank contents.

- d. If the laboratory results reveal that the pH is equal to or greater than 5.0 and less than 12.5 and the residual chlorine level is less than 5 ppm:
 - 1) The contractor employer (or contractor coordinator) shall report the volume, proposed date and time of discharge of each tank to the Environmental Engineering section of EH&S (O27).
 - 2) Following consultation and approval from the Environmental Engineering section of EH&S (O27), the tank contents may be discharged to the city sewer system.
- e. If the laboratory results do not meet these limits, the contractor employer shall contact the Environmental Engineering section of EH&S (O27) for treatment options.

3. *Disinfecting and Cleaning Sanitary Tanks on Ships*

- a. Note: The environmental sampling and discharge requirements listed below apply to all systems used to clean and flush the tanks, whether the agent used is caustic soda, microorganisms or another approved material.
- b. The contractor employer shall Contact the Environmental Engineering section of EH&S (688-0169 or 688-5523) before the cleaning procedure begins and shall provide the pH, volume, and proposed discharge time and date.
- c. Sampling and Discharge Requirements:
 - 1) The contractor employer shall collect representative samples and take them to NNS Laboratory Services (O31) with a properly completed COC to be analyzed for pH. **Note:** The pH range must be between 10.5 and 12. If the pH is not within that range, O31 will advise as to corrective measures.
 - 2) Approximately 48 hours prior to discharge of materials used to clean and flush the tanks, the contractor employer (or contractor coordinator) shall contact the Environmental Engineering section of EH&S (O27) at 688-0169 or 688-5523.

- 3) Following consultation with O27, the contractor employer shall collect representative samples and take them for analysis to O31 with a properly completed COC to be analyzed for:
 - (a) pH — Note: The pH must be greater than 5 and less than 12.
 - (b) COD (Chemical Oxygen Demand) — **Note:** The person filling out the COC must note in the comments section of the COC that if the COD is below 1000, it is **NOT** necessary for O31 to run the BOD.
 - (c) BOD (Biological Oxygen Demand)
 - (d) Total Metals: Cd, Cu, Cr, Pb, Ni, Zn
 - (e) Residual Chlorine. NOTE: Chlorine needs to be run only if the tank has been disinfected. The chlorine residual for tank or pipeline disinfection must be $\leq 5\text{mg/L}$. EE will give guidance on whether chlorine needs to be sampled for.
- 4) After receiving the results from the Laboratory Services Department (O31), the Environmental Engineering section of EH&S (O27) will determine if the requirements of the applicable HRSD permit are met, and approve or disapprove whether the tank contents may be discharged to the city sewage system.
- 5) The contractor employer shall have the approval of the Environmental Engineering section of EH&S (O27) before any discharges are made to the sewage system, and shall not exceed 50 psi when pumping tanks.

4. *Liquid Waste and Industrial Wastewater (IW)*

- a. Documentation and Disposal Restrictions
 - 1) Contractor employers shall document that liquid waste is non-hazardous through lab analysis and “generator knowledge”.
 - 2) Contractor employers shall manage hazardous liquid waste or other toxic waste in accordance with section III. of this manual. The Environmental Engineering section of EH&S (O27) will provide guidance to help identify hazardous waste.
 - 3) Contractor employers shall not dispose of liquid waste or IW on the land, into the groundwater or to the sewer at NNS.
- b. Storage Time Limit — Contractors shall not store liquid waste or IW for more than 10 working days after the operation has been completed, and no more than 30 days after the waste was generated, without approval from the

Environmental Engineering Section of EH&S (O27), except for waste accumulated for recycling.

- c. Storage to Prevent a Nuisance — Contractors shall not store or collect liquid waste or IW in a manner that creates a public nuisance, such as odor or the attraction of vermin or birds.
- d. Spill Management and Prevention
 - 1) Storage to Prevent Spills — Contractors shall store liquid waste or IW in a manner that prevents spills from overflowing, tipping, rupturing, or other accidents from entering the James River, groundwater, or sewer.
 - 2) Management of Spilled Waste — Contractors shall collect spilled liquid waste or IW and recycle it back to the appropriate storage container or dispose of it. Spilled liquid waste and IW must be handled, recycled or disposed of in such manner as to prevent non-permitted discharge into the James River, groundwater, or sewer.
 - 3) It is the responsibility for all persons working at NNS to report all spills to the NNS Communication Center at *911, 0-2222, or 380-2222 for cell phones.
- e. Sampling and Analysis — If sampling is required, then a COC must be used with the samples taken.
- f. Off-Site Disposal Approval
 - 1) Contractors shall not transport or arrange for the shipment of liquid waste or IW to an off-site facility without approval from EH&S.
 - 2) Free liquids cannot be disposed of in a landfill. Free liquids and poorly contained liquids shall be absorbed on solid material before placed in a sanitary landfill.

5. *Liquid Waste Disposal*

- a. Acceptable disposal pathways:
 - 1) Liquid waste must be:
 - (a) Approved by the Environmental Engineering section of EH&S (O27) before disposal, and, as directed by EE:
 - (b) Transported to the Material Recycling Facility (MRF), Stop 550, for recycling or disposal, or
 - (c) Shipped to an off-site recycling or disposal facility.

- 2) The MRF accepts only the following liquid wastes that are not a hazardous waste:
 - (a) AFFF (Aqueous Film Forming Foam)
 - (b) Iron-oxide Solution (Non-Destructive Testing)
 - (c) Ethylene Glycol (anti-freeze)
 - (d) Hydraulic Fluids
 - (e) Liquid Detergent
 - (f) Grease
 - (g) Used Oil
 - (h) Water Based Paint
 - 3) NOTE: Liquid wastes not in the above listing must be shipped off-site for recycling or disposal (this is coordinated by the OHWC).
- b. Identification Criteria — Before waste is dispositioned, contractors shall make certain that a waste:
- 1) Consists of a liquid or mixture of liquids other than water;
 - 2) Is less than 10% solid;
 - 3) Is not suspected to be a hazardous waste, asbestos waste, or PCB waste; and
 - 4) Is not mixed with any other solid waste or IW.
- c. Testing Requirements
- 1) Contractors shall arrange to have liquid waste tested to verify it is non-hazardous waste. A COC is required for all testing done for the HRSD permits.
 - 2) Waste products that meet the identification criteria for liquid waste listed below may be considered non-hazardous based on generator knowledge only.
 - (a) Cooking grease
 - (b) Synthetic oils (e.g., Fyrequel[®], Houghto Safe[®])
 - (c) Antifreeze (e.g., ethylene glycol)

- (d) Water-based paint
- 3) For off-site disposal of an industrial waste or wastewater rejected for pretreatment from OWTF, CWTP or the sewage system, contact the Environmental Engineering section of EH&S with the following information:
- (a) The name, address and phone number of the waste carrier;
 - (b) HRSD permit number, if applicable
 - (c) A description of the wastewater and/or process generating the waste;
 - (d) Quantity of waste;
 - (e) Date and time of generation; and
 - (f) The destination of the waste and/or final disposal location;
 - (g) An MSDS.
- d. Report the above listed information immediately to the Environmental Engineering section of EH&S. The Environmental Engineering section of EH&S must report this information to HRSD within twenty-four (24) hours of the waste being taken off-site (or the next business day if waste is generated on the weekend or legal holiday).
- 1) The above does not apply to waste generated and handled by the OHWC.
 - 2) If an HRSD permitted vendor handles the waste generated, then the following shall apply and be provided to the Environmental Engineering section of EH&S in the form of a memo:
 - (a) Contractor employer shall for the wastewater generated to be taken off-site.
 - (b) Note the volume of wastewater, date, time, and where or what process generated the wastewater.
 - (c) Note the person who arranged (NNS/Contractor personnel) for the wastewater disposal
 - (d) If an HRSD permitted vendor is transporting the waste, this shall also be noted.

- e. Prohibited Discharges — Contractors shall not discharge liquid waste into the James River, groundwater, sewer, CWTP, or OWTF without prior approval from the Environmental Engineering section of EH&S.
- f. Applicable Solid Waste Management Requirements — Contractors shall comply with the applicable federal, state, and local waste management requirements and those of NNS.
- g. Approval for New Waste Streams
 - 1) Contractors shall not arrange for recycling or disposal of a new source of liquid waste without approval from the Plant Operations (O46) and EH&S.
 - 2) A waste shall be considered a new liquid waste if the operation generating a previously approved liquid waste is changed.
 - 3) Contractors requesting approval to dispose of a new liquid waste or to change a currently approved liquid waste, shall provide the following information to the Plant Operations and the Environmental Engineering section of EH&S:
 - (a) Brief description of the process generating the liquid waste;
 - (b) Lab report and/or any supporting documents verifying the waste is not a hazardous waste;
 - (c) Estimated amount to be generated; and
 - (d) Time frame for the waste generated and disposal needs.
- h. Non-bulk Packaging and Disposal
 - 1) Non-bulk Packaging — Contractors shall package non-bulk liquid waste (i.e. drums, pails) in accordance with the following:
 - (a) Use only approved Department of Transportation (DOT) containers suitable for transporting liquid.
 - (b) Leave six (6) inches of headspace in each drum for the liquid to expand.
 - (c) Consolidate containers of the same or similar liquids smaller than thirty (30) gallons into fifty-five (55) gallon drums, if practical.
 - (d) Containers located outside shall be covered to prevent moisture from mixing with the waste.

- (e) Label containers. Use forms NN4651 NNPN 3321836 Waste Label and NN7029 NNPN 15278621 Hazard Waste Label (see Appendix H.)
 - (f) Remove any markings and labels that do not describe the waste in the container.
 - (g) Comply with any additional requirements of the shipping company and the off-site recycling or disposal facility.
- 2) Non-bulk Disposal
- (a) Contractors shall arrange for transportation of liquid waste in drums to the MRF.
 - (b) A description of the liquid waste should include any available lab report or supporting documents that would verify the waste is not a hazardous waste.
 - (c) If the waste is not approved for recycling/disposal at the MRF, then contractors shall arrange for the OHWC to manage the waste.
 - (d) Complete the material receipt form
 - (e) The OHWC is responsible for transporting the waste from the worksite to the North Yard Accumulation Area.
- i. Bulk Packaging and Disposal
- 1) Bulk Packaging — Contractors shall arrange for bulk packaging containers, such as a tank truck, through the Plant Operations.
 - 2) Bulk Disposal
 - (a) Contractors shall arrange for transportation of bulk liquid waste through the Plant Operations (O46) who shall in turn arrange for the recycling/disposal of that waste. A description of the liquid waste should include any available lab report or supporting documents that would verify that the waste is not a hazardous waste.
 - (b) If the waste is not approved for recycling/disposal at the CWTP, OWTF or MRF, then contractors shall arrange for the OHWC to manage the waste.
 - (c) Complete the material receipt form provided by the contractor.

6. *Management of Industrial Wastewater (IW) and Discharges*

a. General: IW Disposal

- 1) IW should be disposed of in the most environmentally responsible manner in accordance with NNS permit requirements.
- 2) Disposal operations may have a significant environmental impact on the local POTW or the James River. Any disposal must be authorized by the Environmental Engineering section of EH&S (O27).
 - (a) Contractors shall consider IW for treatment at the CWTP or OWTF prior to being shipped to an off-site facility for treatment.
 - (b) Contractors shall not arrange for disposal of a new source of IW without approval from EH&S and the treatment plant supervisor.
 - (c) Contractors requesting approval to dispose of a new IW or change a currently permitted IW, shall provide the following information to the Environmental Engineering section of EH&S (O27):
 - (1) A description of the process generating the IW;
 - (2) A schematic process diagram which indicates points of discharge and sampling points;
 - (3) The expected average and maximum daily flow rate in gallons per day;
 - (4) The expected average and maximum daily concentration of pollutants in the IW; and
 - (5) An MSDS for the chemicals being used.

b. Off-Site Disposal Liquid wastes not in the listing at section E.5.a.2), page 6) must be shipped off-site for recycling or disposal (this is coordinated by the OHWC).

c. Discharging IW to the HRSD Sewer System.

1) General Permitting Information

- (a) NNS has two (2) HRSD permits that authorize the Yard to discharge into the HRSD sewage system.
- (b) Industrial wastewater generated must be pre-treated by the CWTP or OWTF before discharging into the HRSD sewage system.

- (c) NNS has been authorized to discharge some IW directly to the sewage system. As a Contractor employer, it is your responsibility to assure that only approved wastewater is sent to the sewer. Contact the Environmental Engineering section of EH&S for approved discharges.
 - (1) This wastewater is then pumped to the Boat Harbor Treatment Plant (owned and operated by HRSD)
 - (2) HRSD then discharges the treated wastewater to the James River via their Virginia Pollutant Discharge Elimination System (VPDES) permit.
- (d) The prohibited product use and discharge list (see Appendix D, EM-1000) shall be reviewed by the contractor employer to ensure these prohibited products are prevented from use at NNS and are not discharged into the sewage system.
 - (1) Review this list to ensure your operation(s) does not use or discharge these chemicals to the sewer.
 - (2) If these prohibited products are currently in use, STOP USE IMMEDIATELY and contact the Environmental Engineering section of EH&S (O27).
- 2) New Sources of IW — see section E.5.g. page 8 above for new source information
- 3) Transfer/Shipment — Contractors shall not transport or arrange for the shipment of IW to the sewer, OWTF, CWTP or a treatment facility off-site without approval from EH&S.
- 4) Unusual Discharges — Contractors shall immediately notify the Communication Center at *911, 0-2222 or 380-2222 for cell phones to report unusual or extraordinary discharge that enters, or could be expected to enter, the sanitary sewer. This notification shall include as much of the following information as possible:
 - (a) Description of the discharge and its source;
 - (b) Exact date, time, and duration of the discharge;
 - (c) Actions taken to correct and clean up the discharges;
 - (d) Actions planned to prevent a recurrence of the discharge; and
 - (e) An MSDS of the product.

- 5) Direct discharges shall not be made without prior authorization from EE.
- d. Vessel discharges and cleanings -- potable IW & Sanitary (CHT) IW
 - 1) Contractor Employers shall:
 - (a) Discharge sanitary wastewater from vessels into holding tanks or into the sewerage system.
 - (b) Make certain that connections, valves, pipes, hoses and soil chutes used to transfer IW from vessels into the sanitary sewer are tightly connected and leak free prior to transfer.
 - (c) Immediately repair any leaks during the transfer.
 - 2) Potable Wastewater Cleanings and Discharges – before performing this operation:
 - (a) Contact your contractor coordinator and obtain a copy of NNS procedure *Y-1112*

NOTE: O67-18.1 has been cancelled.
 - (b) Follow the steps in that procedure.
 - e. CWTP/OWTF Pretreatment Plant IW Transfers
 - 1) Wastewater that is **not** authorized for direct discharge to the James River or HRSD sanitary sewage system may be suitable for pretreatment at the CWTP or OWTF.
 - (a) Before pretreatment at the plants and/or discharge to the HRSD sewage system, NNS must:
 - (b) Pre-treat specific types of approved IW at the plants (these must be pre-approved by EE).
 - (c) Obtain EE approval for discharges from CWTP/OWTF plants of treated IW to the HRSD sewerage system.
 - (d) Sample treated wastewater to ensure compliance with the permit discharge requirements.
 - (e) Prevent certain wastes from entering the sanitary sewage system.

2) Responsible departments **must** coordinate closely with EE and the CWTP/OWTF supervisor to make sure untreatable or prohibited wastes do not enter the plants.

(a) CWTP Acceptable Wastes:

- (1) Electroplating
- (2) Photo processing
- (3) Phosphating
- (4) Reproduction
- (5) Lead-laundry water
- (6) Pipe-cleaning
- (7) Acid/Caustic waste
- (8) Developer
- (9) Hydro-testing
- (10) Metal Finishing

(b) OWTF Acceptable Wastes:

- (1) Oily bilge wastewater
- (2) Cutting Oils
- (3) Pipe-cleaning wastewater
- (4) Paint spray curtain wastewater
- (5) Special Gosh / Industrial Strength Gosh
- (6) Condensate
- (7) Bunker C Oil
- (8) Boiler blow-down
- (9) Cooling fluids
- (10) Glycols

- 3) Contractor Employers shall meet the requirements listed below before transferring IW:
 - (a) Notify your contractor coordinator or the supervisor of CWTP/OWTF (380-3824) for authorization of all transfers to the plants.
 - (b) Information required for IW transfers shall be given to the plant supervisor as listed below:
 - (1) Generator/contact name, department and telephone number
 - (2) Description, source and generating process of IW
 - (3) Volume generated
 - (4) MSDS
 - (5) Sample of the wastewater (see bench testing below)
 - (c) **Exception:** If the IW has been previously approved for discharge to the plants, the above information is not necessary.
- f. New IW for CWTP/OWTF
 - 1) **Bench Testing**--If a wastewater has never been treated before at either plant, a sample of the new wastewater will be required to determine treatment requirements. Contact the Environmental Engineering section of EH&S for sampling requirements.
 - 2) Transfer of IW
 - (a) Contractor employers shall not transfer a new IW to the plants without approval from the Environmental Engineering section of EH&S and the treatment plant supervisor.
 - (b) If the operation generating a previously approved wastewater is changed, then the wastewater shall be considered a new wastewater.
 - (c) Contractor employer requesting approval to transfer a new IW or change a currently approved IW shall provide the following information to the Environmental Engineering section of EH&S and the treatment plant supervisor:
 - (1) A brief description of the process generating the IW

- (2) A schematic process diagram which indicates points of discharge and sampling points
 - (3) The expected average daily and maximum daily flow rate in gallons/day
 - (4) Potential pollutants in the IW
 - (5) MSDS
- (d) Prohibited Wastes -- Departments shall **NOT** use or transfer an IW containing a prohibited waste to the CWTP, OWTF or the sewage system (see Appendix D, EM-1000).
- g. Transfer of Oily IW
- 1) Wastewater that has visible petroleum or sheen on the surface will be considered oily waste.
 - 2) Federal regulations dictate that oily waste is considered an oil with reference to transfer operations.
 - 3) Transfers of oily waste to the OWTF must, therefore, follow rules assigned to an oil transfer, including the completion of a pre-transfer Declaration of Inspection and origination to destination communication.

7. Industrial Wastewater to Specific Outfalls to the James River

- a. NNS has a Virginia Pollutant Discharge Elimination System (VPDES) permit with the State of Virginia to discharge specific types of industrial wastewater (IW) from specific outfalls to the James River. Any changes or additions to this permit, such as plans to discharge **new** sources of industrial wastewater, must be approved and added to the current permit by the Environmental Engineering section of EH&S (O27).
- 1) Contractor employers must comply with the Best Management Practices (BMPs) requirements to prevent pollution. These BMPs are issued by the VDEQ specifically for the shipbuilding industry. Because dry docks, piers and outfitting berths are major sources of NNS IW discharges to the James River, NNS developed SSP Y-1075, "Water Pollution Control for Dry Docks, Piers and Outfitting Berths." Specific instructions and responsibilities are included in SSP Y-1075 to minimize water pollution and help ensure compliance with Yard BMPs and the VPDES permit. Contractor employers shall:
 - (a) Obtain a copy of this procedure from their contractor coordinator.

- (b) Review this procedure and use it where applicable.
- 2) The **SSP Y-1075** requirements for contractors are as follows:
- (a) Water Discharges from Vessels/Production Equipment. The NNS responsible department, contractor employer, or Construction Project shall ensure that all production equipment (compressors, vacuum pumps, etc.) and vessel water discharges (cooling, blasting, and other permitted aqueous dry dock discharges) are directed away from vessel/equipment by one of the following methods (These methods will minimize aqueous discharges from running across the dock floor and minimize the possible migration of pollutants to the dry dock ditches.):
 - (1) Direct pipe line to the dry dock sump or longitudinal drainage trench.
 - (2) Chute or flume water discharges to longitudinal drainage trenches.
 - (3) Direct pipe line over the gate to the river with prior approval from the Environmental Engineering section of EH&S (O27).
 - (b) NOTE: The above actions are not required if Construction Management advises the Environmental Engineering section of EH&S (O27):
 - (1) No abrasive blasting is planned.
 - (2) Blasting has been completed and the dry dock has been cleaned as indicated in Section II.E.7.c.1) Page 18 of this procedure.
 - (3) There has been no application or removal of anti-foulant or organotin coatings.
 - (4) Bilge water will not be permitted to discharge to any dry dock or the water at piers and outfitting berths. Vessel discharges described below have special conditions that must be followed prior to discharge:
 - (5) Any discharges suspected to contain any toxic substances (including but not limited to microbiocides and germicides) must be coordinated through the Environmental Engineering section of EH&S (O27). These discharges will be evaluated on a case by case basis and may require laboratory analysis to determine proper disposal procedures.

- (6) Any discharges which are suspected to contain oil and/or grease must be analyzed for pH, oil and grease; the results must be reviewed by Environmental Engineering prior to discharge. Contact the Laboratory Services Department (O31) when sampling is required.
- b. Contractors shall prevent solids, floating debris, paint, oil and grease from entering the James River, by doing the following:
 - 1) Use drip pans to contain and prevent discharges of oil and/or oily wastes from reaching the floor of the dock during any operation that can be expected to result in the discharge of oil.
 - (a) The X33 Department or the X65 Department will provide oil boxes.
 - (b) Clean up all spilled oil and clean-up material immediately.
 - (c) Comply with The Manual for the Transfer of Oils and Oily Wastes for all oil and oily waste transfers (contact your contractor coordinator and obtain a copy of that Manual).
 - 2) Prevent the spillage of paint, float coat/preservatives, paint thinners, and other solvents in the docks.
 - (a) Paint shall not be mixed on top of gratings, pits, deck drains or trenches.
 - (b) Drip pans, sheet plastic or other suitable material for containment will be used under all mixing or pouring of paints.
 - (c) All spilled paint, solvents, and thinners will be cleaned up immediately.
 - (d) The amount of paint stored on the dry dock floor or at piers and outfitting berths shall be kept to a minimum.
 - 3) Use acceptable methods of control during abrasive blasting and spray painting to prevent blast dust and overspray from entering the James River.
 - 4) Inspect to ensure that all ditches and trenches are covered with rubber mats during blasting/painting operations.
 - (a) Rubber matting may be substituted with materials having equal protective properties only with prior approval from the Environmental Engineering section of EH&S (O27).

- (b) Ensure all blast material and equipment are kept clear of ditches and trenches.
 - (c) Place equipment over trenches **only** if all grate covers are in place and properly covered.
 - (d) Frequently inspect the covers to ensure adequate coverage. (NNS personnel will be inspecting the contractor employer as well.)
- c. Contractor Employers shall clean up spent abrasive/paint over-spray and shall ensure the following:
- 1) As soon as practicable after the completion of an abrasive blasting/spray painting event, clean the area of the dry dock floor affected by the blasting/painting to the equivalent of a scraped or broomed clean condition.
 - (a) Remove blast grit and paint overspray from the dry dock as soon as practicable and do not allow it to accumulate.
 - (b) Do not allow blast grit or paint to accumulate in work areas.
 - (1) Equipment placement that inhibits mechanical clean-up operations will not be an acceptable reason for not cleaning work areas. Place any such material that cannot be immediately removed from the dock into manageable piles and cover with a waterproof cover.
 - (2) Anchor the cover firmly over the pile and maintain coverage until removal can be achieved. Cover all containers (drums, skiffs, roll-off boxes, tractor trailers) containing blast grit/paint debris with a waterproof cover. Maintain this coverage when material is not being added to these containers.
 - (c) In the case of paint overspray cleanup, use equipment such as wet-vacuums, brooms, and mechanical sweepers to accomplish a broom clean condition.
 - (d) Scraping the dock floor with the bucket of a front-end loader (uniloaders) will be a sufficient means of cleaning after the blasting/spray painting event. Operations will be conducted to allow maximum use of this equipment.
 - (e) Manually clean areas that cannot be reached by uniloaders.
 - (f) Excess blocks will be removed by the X36 Department from, or stored in, the dock in such a manner as to facilitate ship work and cleaning of the dock.

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- (g) X36 Department will remove equipment such as oil boxes, pipe, hose, staging, etc., from the dock when no longer needed or placed in such a manner so as to minimize interference during dock cleaning.
 - (h) During scraping and sweeping operations of spent abrasives from lead or cuprous oxide coatings spray a fine mist of water to suppress dust, but do not allow puddles to form.
- 2) After work has been completed on a vessel and prior to flooding the dock, clean-up shall be as follows:
 - (a) Broom clean the dry dock floor. Remove all blast grit/painting debris and trash from the dock prior to flooding. Do not allow any solid material to be placed into longitudinal ditches, cross trenches or pump sump areas.
 - (b) In the case of paint overspray, use cleanup equipment such as wet vacuums, brooms, and mechanical sweepers to accomplish a broom clean condition.
 - 3) Once the vessel has left the dock and de-watering is complete, additional clean up shall be as follows:
 - (a) Clean all longitudinal ditches, cross trenches and pump sump area to remove any visible sediment and debris. Use of a vacuum system is recommended to achieve maximum cleanliness.
 - (b) Complete this cleaning within one (1) week of ship's departure. No other vessel will be allowed to enter any dry dock that has not been cleaned to the above requirements.
 - (c) In addition to the above requirements, prior to job completion, all longitudinal ditches, cross trenches and pump sump areas will be cleaned to remove any sediment and debris if deemed necessary by the X36 Dockmaster and/or the Environmental Engineering section of EH&S (O27).
 - (d) Any variances to these requirements must be approved by the Environmental Engineering section of EH&S (O27).
- d. Contractor employers are responsible for reporting and controlling oil spills:
 - 1) The discharge of oil through dry dock pumps or at piers and outfitting berths will subject the company to monetary fines and clean-up costs. These costs will be passed on to contractors who are responsible for the spill.

- (a) If oil is spilled or discharged into the dry dock during de-watering, the de-watering and sump pumps must be immediately stopped and the oil must be cleaned up to prevent polluting the river.
 - (b) If oil is spilled or discharged into the dock during flooding, the oil must be cleaned from the dock before the gate is removed.
 - (c) If oil is spilled or discharged into the dock while the gate is not in place, or if oil is spilled or discharged to the water while a vessel is pier-side or at an outfitting berth, the waterborne oil must be contained and cleaned up as practicable and reported by Environment Engineering in accordance with company practices and U.S. Coast Guard regulations.
- 2) Report all oil spill incidents to the Communications Center at *911 or 0-2222, (380-2222 for cell phones). The person reporting any spill shall:
- (a) Give their name, and department number, the location of the spill, and identification of the material being spilled, if known, and an estimation of the quantity.
 - (b) Follow all operator instructions and remain at the spill location until the arrival of the spill team.
- e. Other:
- 1) The discharge of floating debris is prohibited.
 - (a) Trash, wood and other debris will be cleaned from the dry docks before flooding operations start.
 - (b) Any debris floating in the dry dock after flooding will be removed before the dry dock gate is removed or means will be taken to prevent debris from floating or washing out of the dock while the gate is removed.
 - 2) Any variances to these procedures must be approved by the Environmental Engineering section of EH&S (O27).

8. ***Best Management Practices for Abrasive Blasting and Painting***

- a. NNS developed SSP Y-1004 “Best Management Practices for Abrasive Blasting and Painting” because these activities can contribute to water pollution.

- 1) Specific instructions and responsibilities are included in SSP Y-1004 to minimize potential water pollution and to help ensure compliance with Yard BMPs and the VPDES permit.
 - 2) Contractors shall obtain a copy of this procedure from their contractor coordinator, review it and use it where applicable at all locations where they perform blasting and painting operations.
- b. Land Surfaces
- 1) Contractors shall clean work areas adjacent to blasting/coating activities on a daily basis. This is necessary to minimize runoff carrying spent abrasives, paints, solvents, cleaners, anti-corrosive compounds, paint chips, scrap metal, trash, garbage, petroleum products, or other debris into the State waters.
 - 2) Daily cleanup of these areas shall consist of mechanical or manual methods to sweep up and collect the debris. Piles of spent abrasive awaiting removal shall not be located near storm drains or dry dock drains. The material shall be gathered into manageable piles and must be covered with a waterproof cover. The coverage is to be securely anchored and maintained.
 - 3) Clean dry dock floors of all industrial rubbish on a daily basis. Employ good housekeeping procedures to prevent the discharge of any and all pollutants into the waterways. Do not consider short docking intervals justification for not cleaning a dry dock before it is flooded.
- c. Blast Dust and Overspray Control
- 1) Use acceptable methods of control during abrasive blasting and spray painting. These methods typically include down-spraying blast and paint materials and erecting effective barriers/shrouds to confine blast dust and overspray. Constructing temporary structures may be necessary for this purpose. Maximum containment effort is mandatory. All methods of operation are subject to the approval of Dept. X33 or the contractor coordinator. Shrouding of superstructures and the use of fixed or floating platforms when working at the water surface is required.
 - 2) Containment areas shall be properly ventilated for environmental control, vapor explosive limit control, and personnel exposure to dust or vapor levels.
 - 3) When abrasive blasting, cover openings and open areas between decks (including but not limited to scuppers, railings, freeing ports, ladders, and doorways) if they may allow discharge into State waters.

- 4) Contain exterior work on vessels that extend beyond the length of the dry dock.
 - 5) Use fixed or floating platforms as work surfaces when working at the water surface in order to provide a surface to catch spent material. Bridge gaps between the vessel and the platform with Herculite[®] or a material of equal protection to funnel dust to the platform so that pollutants do not fall into the adjacent waters. Clean platforms at the end of each work shift.
 - 6) Control dust and overspraying from abrasive blasting and painting in yard facilities as well as on the water. The practices outlined will minimize the spreading of wind blown materials. Cleanup and proper management of blasting materials is necessary to prevent the waste from being washed into storm drains. Clean up blast grit following blasting operations on a daily basis. Place spent blast grit into appropriate containers for disposal. Ensure that these containers are lined with clear poly to prevent leakage and covered with a waterproof cover to prevent contact with rainwater.
 - 7) If sustained winds exceed 20 MPH suspend blasting and painting operations and/or implement additional control measures.
 - 8) Compliance with these practices will be monitored daily by the trades' supervisor or contractor coordinator.
 - 9) Ensure that, when water blasting, hydroblasting, or water-cone blasting (in dry docks or on the floating dry dock) to remove paint from surfaces, the resulting water with debris is filtered or collected, and either delivered to appropriate containers for removal or subjected to a treatment to concentrate the solids for proper disposal. Use shrouding to confine paint debris to the work area. All methods of operation are subject to the approval of the Dept X33 or contractor coordinator. Contact Environmental Engineering for additional information on disposal.
- d. Storm System Maintenance: Contractor employers shall take precautions and employ stringent cleaning procedures to remove waste materials, thus preventing their introduction into the storm drainage system.
- e. Spillage Control
- 1) Locate the nearest spill kit prior to the commencement of any work that may result in a spill. These spill kits have been placed at dry docks, piers and outfitting berths. Use the contents of these spill kits to contain and cleanup oil, grease, paint or fuel spills. Oil containment booms are stored so as to be immediately deployable if necessary. Carry out

cleanup promptly to keep the pollutants from reaching State waters. Remove contaminated materials from the spill area or dry dock as soon as possible and in all cases prior to submersion/flooding of a dry dock. These procedures also apply to all hazardous substances. Emulsifiers and dispersants are not suitable cleanup agents. For any spills always call *911 or 0-2222 (380-2222 for cell phones). This will initiate a response to the spill and serve to determine if local, state or federal reporting is required.

- 2) Use drip pans or other protective devices for all oil or oily waste transfer operations to catch incidental spillage and drips from hose nozzles, hose rack, drums, or barrels. Carry out the mixing of paints and solvents under conditions that will minimize the possibility of a spill.
- 3) Use drip pans, drip cloths or tarpaulins unless the mixing operation is carried out in a controlled area away from storm drains, surface waters, shorelines, and piers. Keep sorbents on hand to soak up spills.
- 4) Keep the amount of paint stored in the dry dock to a minimum. Store solids, metal finishing solutions, paints, oils, solvents, acids, rinse-water, caustic solutions, and waste materials, including used batteries in a manner which will prevent overfilling, tipping, ruptures, or other accidents and the entry of these materials into waters of the State.

f. Miscellaneous

- 1) Execute all washing tasks in a manner that prevents debris and industrial waste from entering any drainage system or discharge into State Waters. Exercise special care when washing adjacent surfaces that may have had a blast residue deposited on them.
- 2) Direct all shipboard cooling and process water away from contact with spent abrasives, paints, and other debris. Direct these waters to the dry dock trenches. Segregate spent abrasives, paint etc. to prevent the pollution of water systems.

9. ***Additional Best Management Practices and other requirements***

- a. Submit to your contract coordinator or to the Environmental Engineering section of EH&S (O27) any new practices or innovative measures for collecting contaminants for evaluation prior to the start of work. .
- b. Additional Yardwide Best Management Practices (BMPs) which must be adhered to in order to comply with the NNS VPDES permit. All contractors shall ensure that:

- 1) All liquid material containers are stored away from drains in a way that prevents spillage of the material.
 - 2) All liquid material containers are kept closed and secured when not in use.
 - 3) Drip pans that are 1/3 full or greater are pumped down and the material is disposed of the material properly. (Contact Department 046 for pump down of the drip pans.)
 - 4) Liquid material storage areas have absorbent material on hand to contain any incidental spills.
 - 5) Liquid material containers are kept in good condition (not heavily rusted or dented).
 - 6) Storm drains are kept clear of trash and debris.
 - 7) Liquid materials are mixed away from the following:
 - (a) All drain gratings
 - (b) Pits
 - (c) Deck openings
 - (d) The water's edge
 - 8) Lead and zinc materials and components assembled with these materials are protected from contact with storm water by making sure that they are:
 - (a) Stored off the ground
 - (b) Covered with firmly anchored Herculite[®] covers, a covered structure, or equal protection which:
 - Shields the material from contact with storm water completely.
 - Is maintained in good repair.
 - 9) All work areas are kept free of unwanted/scrap materials, such as empty paint cans, buckets and drums. (These materials shall be disposed of properly).
- c. Contractor employers must not do the following activities without approval from the Environmental Engineering section of EH&S (O27)

- 1) Construct or modify any point source discharge from areas used to discharge to the James River.
 - 2) Discharge a new source of IW.
 - 3) Change a currently permitted IW discharge (e.g., change in operations).
- d. Contractors requesting approval to discharge a new IW, or change a currently permitted IW, shall provide the following information to EE:
- 1) A brief description of the process generating the IW.
 - 2) A schematic process diagram which indicates points of discharge and sampling points.
 - 3) The expected average daily and maximum daily flow rate in gallons/day.
 - 4) An MSDS for all materials found in the IW discharge.
- e. Contractors shall take all reasonable steps to prevent and/or correct any non-permitted IW discharges, including securing the operation generating the discharge.
- f. Contractors shall immediately notify EE of any suspected non-permitted discharges:
- 1) This includes any discharges that may enter, or could be expected to enter any of the following areas:
 - (a) Dry Docks,
 - (b) Piers,
 - (c) Outfitting Berths,
 - (d) Storm Drains,
 - (e) IW Drain,
 - (f) Sanitary Sewer Drain or
 - (g) Directly to the James River.
- g. This notification shall include as much of the following information as possible:
- (a) Description of the discharge and its source.

- (b) Exact date, time, and duration of the discharge.
 - (c) Actions taken to correct and/or clean up the discharge.
 - (d) Actions planned to prevent a recurrence of the discharge.
- h. Requirements for paint mixing/scrapping operations:
- 1) Place protective devices beneath the work area to contain incidental spills. These devices include drip pans, drop cloths, tarps and plastic. Remove, drain or replace these devices as needed.
 - 2) Locate absorbent materials at paint mixing/scrapping areas so that any incidental spills can be contained immediately. Clean up materials used to clean up these spills immediately and do not allow them to accumulate in work areas.
 - 3) Store all painting materials in such a way to prevent tipping, rupture, overfilling or spillage. Ensure that proper container tops are on all containers when not in use (*e.g.* bungs, lids, caps).

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Paint Tracking Requirements

PAINT TRACKING REQUIREMENTS

1. **Applicability**

This section applies to all painting at NNS by contractors.

2. **Painting of Ships and/or Ship Parts**

a. Regulatory References

- (1) The Clean Air Act Amendments (CAAA) of 1990 included paint and coating rules specifically for the shipbuilding and ship repair industry, the National Emission Standards for Shipbuilding and Repair - Surface Coating (40 CFR 63 Subpart II).
- (2) These rules provide an absolute upper limit on the amount of certain solvents that can be contained in paint and require an accurate system to record **daily** paint use at NNS by all persons applying paint to ships, submarines and any other.
- (3) Strict compliance with this regulation is required. Violations can result in significant fines. If enforcement fines result from a violation, the cost will be passed down to the offending contractor.

b. Operating Standards

(1) Emission Limitations

- (a) All coatings applied to ships and/or ship parts must have an as-applied Volatile Organic Compound (VOC) content less than or equal to those limits listed in the VOC Limits For Marine Coatings Table (Paint Coating Categories) in the Appendix of this manual.
- (b) NNS has a “**NO THINNING POLICY.**” If the use of thinner is necessary, the contractor must submit a WAIVER REQUEST FOR THINNING COATINGS (NN Form 9223), located in the Appendix to this manual) to their Contract Coordinator so that the allowable amount of thinner that can be added to each gallon of coating can be calculated. Under no circumstance shall thinner be added in a quantity that exceeds that granted through the Thinning Waiver Approval process.

(2) Batch Certifications:

- (a) The coating manufacturer must certify the as-supplied VOC content of each batch of coating applied at NNS. The certification must include the following items:
- (1) The manufacturer's name;
 - (2) The coating identification name;
 - (3) The batch number;
 - (4) The VOC content;
 - (5) A statement that says the VOC content was determined by Federal Reference Method 24 or that the "VOC formulation value presented has a consistent and quantitatively known relationship to Method 24 results"; and,
 - (6) A signature.
- (7) If the contractor is supplying the paint, the contractor must obtain and forward copies of all VOC Batch Certifications to their Contract Coordinator prior to the application of that batch of coating. Contractors must not take delivery of any paints for use on ships or subs without an accompanying VOC Batch Certification for each separate batch number/lot number.

c. Record-keeping Requirements

(1) Paint Crew Usage Forms

- (a) All coatings applied shall be recorded on Paint Crew Usage Forms (NN Form 9221), located in the appendix to this manual), or similar form containing required information. If contractors use a form that they have developed, the form shall list a revision number and a revision date.
- (b) The completed Paint Crew Usage Forms must be legible and accurate. Failure to submit paint usage information accurately may result in significant fines and penalties for NNS and the contractor.
- (c) The following information must be included on the Paint Crew Usage Form, at a minimum:

- (1) The correct Manufacturer
 - (2) The correct coating product identification name and color
 - (3) The correct batch number. If the coating has more than one part, the batch number for each part must be included.
 - (4) The VOC/Coating category
 - (5) The VOC content of that batch
 - (6) The amount of paint applied, in gallons (do not include waste or discarded paint in the amount applied).
 - (7) The date applied
 - (8) The type and amount of thinner added, in ounces, if applicable.
- (d) Contractors shall compile Paint Crew Usage Forms weekly, at a minimum, and submit them to their Contract Coordinator.
- (2) Records of VOC Batch Certifications shall be maintained, as described in the Operating Standards section above.

3. Painting of non-ship parts (buildings, machinery, roadways, equipment, etc.)

- a. Contractors shall only use paint that has been approved for use at NNS by Department O27.
- b. Contractors shall track the amount of paint applied to non-ship parts such as buildings, equipment, etc. using the Contractor MSDS Cover Sheet found in Appendix F. All information required on the cover sheet must be supplied.
- c. Contractors shall submit the Contractor MSDS Cover Sheet to their Contract Coordinator. If the actual amount to be used is not known prior to application of the paint, the Contractor MSDS Cover Sheet shall be submitted immediately following completion of the project.

4. Cleaning Solvent Usage

- a. Contractors shall only use solvent that has been approved for use at NNS by Department O27.
- b. Contractors shall track the amount of cleaning solvent used to clean pumps, hoses, etc. using the Contractor MSDS Cover Sheet found in Appendix F of this manual. All information required on the cover sheet must be supplied.
- c. Contractors shall submit the Contractor MSDS Cover Sheet to their Contract Coordinator. If the actual amount to be used is not known prior to

application of the paint, the Contractor MSDS Cover Sheet shall be submitted immediately following completion of the project.

5. Container Compliance

- (a) Contractors shall ensure that the handling and transfer of paints and solvents to and from containers, tanks, vats, drums, and piping systems is conducted in a manner that minimizes spills.
- (b) All containers, tanks, vats, drums, and piping systems housing paints and solvents shall be free of cracks, holes, and other defects.
- (c) All containers, tanks, vats, drums, and piping systems housing paints and solvents shall remain closed at all times when not adding to or removing material from them. Open-top containers of paint and solvent shall never be transported or left unattended.
- (d) Report damaged containers that are not leaking to NNS Onsite Hazardous Waste Contractor by calling 688-7804.
- (e) Report leaking containers by calling 380-2222, or *911 from a shipboard landline phone.

6. Best Management

The following practices shall be part of the contractor's ongoing policies and procedures to the maximum degree practical to ensure that all handling and transfer operations are conducted in a manner that minimizes spills and leaks:

- a. Maintain a neat and orderly work environment, including storing hazardous materials and wastes in a way that minimizes the potential for accidental releases.
- b. Keep lids on all containers housing VOC-containing materials at all times when not directly in use.
- c. Avoid the use of VOC-containing products for surface preparation and cleanup whenever possible (i.e., substitute aqueous cleaners where possible).
- d. When using volatile solvents for surface preparation and cleanup, apply the solvent directly to the rag and avoid spraying solvent directly onto the surface.
- e. Dispose of solvent contaminated rags, cloths, and materials immediately after use and store in a covered container.
- f. Keep drums closed when not in use and equip drums with tight-fitting lids.
- g. Use funnels when filling and replace the cap covering the hole once filling is completed (or replace the funnel's lid, if used).
- h. Maintain paint guns and pots to minimize the potential for leaks and improper spraying.

- i. Clean lines or paint guns in a closed system to capture solvents.
- j. Provide containment for VOC-containing material storage areas.
- k. Perform mixing and transfer operations only in designated areas with containment.
- l. Implement the use of paint totes (large 200-500 gallon tanks) where practical.

**Newport News Shipbuilding
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PCBs

POLYCHLORINATED BIPHENYL (PCBs)

1. PURPOSE

This section establishes:

- a. Guidelines for the evaluation and management of polychlorinated biphenyls (PCBs)
- b. The types of PCB items found in NNS facilities and in work areas on vessels

Note: Contact Health & Safety at 8-5523 regarding PPE concerns and/or PPE questions.

2. SCOPE

This section includes the requirements for the identification, handling, and disposal of PCBs and PCB Items.

3. APPLICABILITY

- a. All personnel performing operations at applicable facilities and vessels.
Personnel working in radiological areas must contact RadCon Engineering for additional requirements when handling PCBs or PCB-suspect items.
- b. All NNS facilities constructed before 1985 or any areas known or suspected to have contained PCBs.
- c. All vessels docked at NNS.

Exception: New vessels under construction

4. REFERENCES

- a. 40 CFR Part 761

5. DEFINITIONS AND ACRONYMS

Refer to Appendix A for definitions of terms used in this section. The requirements in this chapter are based on federal regulations (reference 1) developed by the Environmental Protection Agency (EPA) in accordance with the Toxic Substances Control Act (TSCA). Certain definitions are different than those published by the EPA. This was done to either simplify the regulations, or to better control those NNS practices with the greatest potential for non-compliance.

6. VARIANCES

Only the Environmental Engineering section of the Environmental, Health and Safety Department (027) may grant variances to this section.

7. TRAINING FOR HANDLING OF PCBs

- a. Prior to working on known PCB items such as felt gaskets, septum plates, PCB transformers, PCB light ballasts, or other known PCB items, contractors shall ensure their employees receive awareness training per general PCB awareness training (see section L) prior to beginning work per the contractor's EH&S procedures.

8. IDENTIFICATION OF PCBs

- a. Evaluation
 1. Most PCB waste items are regulated for disposal under the Toxic Substance Control Act (TSCA) at concentrations of 50 ppm or greater.
 2. To identify what regulatory requirements apply to material containing PCBs, a person can do one of the following:
 - a) Determine the PCB concentration, and apply the regulations for that concentration and material type
 - b) Assume the material is 500 ppm or greater
 3. Contractors are responsible for evaluating material suspected of containing PCBs under their direction in the following situations:
 - a) When disposing or recycling the material is planned
 - b) If suspect materials are to be worked in such a manner that could present an occupational hazard
 - a) If a release/spill occurs from a suspect-PCB item.
 4. Contact Environmental Engineering at 688-5523 with any questions concerning the material used.
- b. Document Review
 1. PCB samples should be collected and analyzed only when the information available in drawings, specifications, and history files does not permit classification of the expected waste in support of management decisions.
- c. Visual Site Inspection
 1. The material may be properly characterized by performing a site inspection of the area. Look for residue leaking from known or assumed PCB sources.

d. Potential Sources of PCBs

Paints and Coatings		
Material Subcategory	Evaluation Required	Uses/Notes/Exceptions
Miscellaneous Paints	Y	<ul style="list-style-type: none"> Items with dried surface coatings which have been applied in 1982 or earlier.
Heat Resistant Aluminum Paint (HRA)	Y	<ul style="list-style-type: none"> Used in high-temperature or fire-resistant applications, such as ovens, furnaces, boilers, steam systems, etc.
Plastisol	Y	

Rubber Products		
Material Subcategory	Evaluation Required	Uses/Notes/Exceptions
Rubber Ventilation Gaskets	Y	<ul style="list-style-type: none"> Includes composite ventilation gaskets

Insulating Materials		
Material Subcategory	Evaluation Required	Uses/Notes/Exceptions
Electrical Cabling Insulation	Y	<ul style="list-style-type: none"> Evaluate only undated cables and cables manufactured before 1/1/84. Low smoke cables (MIL-C-24843, MIL-C-24640 and any with LS prefix designation) and low current carrying cables (lighting, telephone, computer, etc) have been verified to contain < 50 ppm PCBs. Cables suspect for PCBs must also be managed as asbestos-containing unless sample results show otherwise.

Adhesives		
Material Subcategory	Evaluation Required	Uses/Notes/Exceptions
Glue	Y	
Cloth Reinforced Double Sided Tape	Y	
Miscellaneous		
Wool Felt Gaskets, Sound Dampening	Y	<ul style="list-style-type: none"> Sampling of all surfaces that have been in contact with the wool felt gaskets is required. All grease/grime in contact with wool felt gaskets must be sampled
Oily Residue/Stain	Y	

<p>Sand Tile Dampening Material</p>	<p>Y</p>	<ul style="list-style-type: none"> • Sand tiles have a chlorinated wax base and have been sampled once at 2400 ppm. • Sand tile is a 1” thick tile that usually measures 1x1 foot. It is made of sand with an adhesive that holds it together. • This product is used as sound dampening and is usually found in inaccessible voids. It is installed during vessel construction.
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<p>Marked PCB Items</p>		
<p>Material Subcategory</p>	<p>Evaluation Required</p>	<p>Uses/Notes/Exceptions</p>
<p>1) Transformers: Large High and Low Voltage Capacitors 2) Equipment or Containers with the above Items Marked</p>	<p>N</p>	<ul style="list-style-type: none"> • 500 ppm or greater
<p>Electric Motors, Hydraulic Systems, Heat Transfer Systems, and Containers with the above Items Marked</p>	<p>N</p>	<ul style="list-style-type: none"> • 50 ppm or greater
<p>Equipment Marked with the Statement "This equipment contains PCB capacitor(s)."</p>	<p>N</p>	<ul style="list-style-type: none"> • 500 ppm or greater

Electrical Equipment		
Material Subcategory	Evaluation Required	Uses/Notes/Exceptions
Including but NOT limited to the following: transformers, capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and electronic dummy loads	N	<ul style="list-style-type: none"> • 50 ppm or greater • Low-voltage capacitors containing more than 3 pounds of dielectric fluid and capacitors containing less than 3 pounds of dielectric fluid normally used in alternating current circuits manufactured before July 1, 1998 that are marked "No PCBs" or those that will be manufactured after July 1, 1998.

NOTE 1: Items manufactured in 1979 or later are generally considered to be PCB-free, with the exception of electrical cables. However, stock materials containing PCBs remained in use after 1979 and the use of materials containing PCBs in foreign-built vessels past 1979 are also unclear.

NOTE 2: PCBs have been found above the TSCA limit of 50 ppm in approximately 24% of cables removed from naval vessels.

NOTE 3: Felt gasket material was used extensively with ventilation system flange gaskets since 1950 and can contain 0% to 50% PCBs by weight. The material is a greasy or waxy felt fabric that is dark green or gray. After many years of installation, the material may be hardened and stuck in place, particularly on the adhesive side. PCB felt can **NOT** be distinguished from non-PCB felt unless by laboratory analysis. Wool felt is also classified as a RCRA hazardous waste that fails for chromium (D007) and lead (D008).

NOTE 4: Material, such as paint contaminated by PCB residue leaching from felt gaskets, may **also** be classified as a RCRA hazardous waste, as well as a PCB waste.

WOOL FELT USES:

1. Three major uses include:
 - a. Sound dampening on machinery foundations, ships structure and hull surfaces in nuclear submarines

- b. Sound dampening on main propulsion reduction gears in many surface ships and submarines
 - c. Flange gaskets in ventilation systems
 2. Some vessels may have been built without PCB-contaminated wool felt gaskets. However, PCB felt may have been added later during maintenance. Therefore, all felt gasket material is assumed to be PCB- contaminated until laboratory testing proves otherwise.
 3. PCBs in felt do **NOT** evaporate while in normal service. The PCBs can become airborne only if the material is sanded, chipped, ground with power tools or heated. The compound may leach from the felt during normal service and contaminate adjacent surfaces. During handling, the compound may be transferred to the skin or clothing.
 4. PCB felt can leave surface residues of PCBs which may be very difficult to decontaminate.

PCB MARKINGS

9. SAMPLING SUSPECT PCB ITEMS

- a. Suspect PCB Items
 1. The suspect item may be presumed to be a PCB waste *without* characterization, if the cost of characterization will significantly exceed the cost of waste disposal.
 2. A suspected PCB item must be assumed to contain PCBs ≥ 500 ppm. This evaluation shall be limited to those items affected by contracted work on either:
 - 1) Vessels or
 - 2) Authorized facility work
- b. Potential PCB-Containing Items
 1. In some cases, a large component may include a PCB-containing item, such as a PCB-capacitor. The entire component must be managed as a PCB item.
 2. In other cases, there may be an item within a component that may or may not contain PCBs, but the disassembly of the component is not practical. If there is no evidence, such as drawings, military specifications, or preexisting sampling data for similar items, indicating the internal items are not suspected of containing PCBs, then it may be inferred that the component does not contain PCBs.
- c. Contractors shall contact EH&S prior to performing sampling.

d. PCB Items That May Contain Asbestos

1. When sampling suspected PCB items, many of the materials may contain asbestos.
2. Only qualified asbestos personnel may sample a suspect PCB item known or suspected to contain asbestos.

e. PCB Items Containing RCRA Hazardous Constituents

1. PCB Items can also be regulated under RCRA as hazardous waste.

Example: PCB wool felt is regulated by RCRA for chromium.

2. PCB-RCRA waste must be labeled for both PCBs and RCRA hazards.

f. Specific Requirements Applicable to Sampling an Individual Item

1. **Sampling Dissimilar Materials**

- a) Separate samples shall be obtained when dissimilar materials are detected within a work area.

Example: Varying shades of one color/type of paint on a bulkhead

- b) Some dissimilar materials may be the same type but have different characteristics, such as thickness, color, and application.

Example: Sampling rubber applied to a pipe for insulation vs. rubber applied to a bulkhead for sound dampening.

2. **Sampling Dried Paint**

- a) Paint samples shall be collected by scraping the painted surface.

- b) Different sampling areas:

- 1) With large surface areas, divide the sample area into one square meter blocks.
- 2) With three or fewer blocks, collect one sample for each area.
- 3) With four or more blocks, randomly select 10% of the areas or a minimum of three areas, whichever is more. If there is evidence that portions of the area have been repainted with the same color, the repainted portion will also be sampled.
- 4) With paint on piping, a sample from every 10 feet of pipe shall be obtained.
- 5) Contact Environmental Engineering for questions regarding locations and the number of samples required.

- c) Each sample shall include all paint layers. However, care should be taken not to include any of the substrate, such as the item that was painted.

Note: Contact Environmental Engineering when taking multiple samples of the same item, such as valves covered with Heat Resistant Aluminum (HRA) paint.

- d) If dissimilar paint is found, samples of each type shall be obtained.

3. **Sampling Mastics, Adhesives, Double-sided Tape**

A plug sample from each system or application within a compartment shall be obtained.

Examples:

- a) Adhesive used to apply rubber and cork
- b) Decking underlayment

4. **Sampling Wood Felt**

Typically, wool felt is assumed to be contaminated with PCBs > 500 ppm and does not require sampling. Also, wool felt must be managed as a hazardous waste for chromium.

- a) A sample from each system or application within a compartment can be obtained to verify the PCB concentration or to verify the fact that the material contains PCBs.
- b) In ventilation systems, dust and interior surfaces within six (6) inches of the exposed felt shall be assumed to be contaminated with PCBs. Exterior surfaces within 6 inches shall be considered non-TSCA regulated unless the surfaces show evidence of a spill or leak.
- c) If necessary, these areas shall receive a standard wipe test survey in accordance with 40 CFR 761.123.

5. **Sampling Electrical Cable**

- a) A sample from each type and each size of cable within a compartment shall be obtained.
- b) If free liquid is present, ask the analytical laboratory to determine the PCB concentration of the liquid as a separate component.
- c) These cables are considered to be **non-PCBs**, and no sampling is required:
 - 1) "LS" designation for low smoke
 - 2) Mil-24643/Mil-24640
 - 3) Manufactured after 1984
- d) Low-current cable wire for telephone, instrumentation, lighting and computers is considered to be a non-PCB Item.

6. Sampling Electrical Equipment

- a) A sample from each component suspected of containing PCBs shall be obtained.
- b) If it is not practical to collect samples of each component, make sure that the laboratory performing the analysis knows to determine the PCB concentration of only the suspected components.

7. Sampling Sludge or Multiphase Material

- a) A one-quart sample of sludge will be obtained whenever possible.
- b) Do not use glass sample jars for liquid PCB samples.
- c) Request the analyzing laboratory to separate the phases and determine the PCB concentration for both the liquid phase and the solid phase.

g. Sampling For PCB Surface Contamination

1. If there is evidence of an oily residue or oily liquid in the vicinity of wool felt gasket material, wool felt sound dampening material, or any other suspect items, perform a standard wipe test to determine the amount of PCB surface contamination. Departments responsible for identifying PCBs in their individual work areas shall contact EH&S to arrange for swipe sampling.

10. VISUAL INSPECTION OF SUSPECT AREAS**a. Signs of Suspect PCB Areas**

1. Look for residue or drips, such as dark stains and waxy-looking residue.
2. If the visual inspection reveals any leaching or leaking residue, note the location and the affected area. Place a large PCB label on the affected area. Contact EH&S to arrange for surface wipe sampling.
3. Special care must be taken while cutting and draining hydraulic lines. Hydraulic fluid leaking from cut lines can be in contact with PCB residue and spread contamination to other surfaces.

b. Areas Requiring Visual Inspections:

1. Felt gaskets
2. Vent flanges
3. Septum plates
4. Light ballasts
5. Areas/equipment containing transformers & capacitors

11. ANALYSIS OF PCB SAMPLES

Analytical laboratories shall analyze PCB samples in accordance with this section.

a. Items with More Than One Component

The concentration of PCBs in an item with more than one component, such as electrical cables, shall be based on the maximum concentration of PCBs in any one component of the item.

Example #1:

An electrical cable may consist of a conductor and insulation. The insulation is the component suspected to contain PCBs. Therefore, it is the component that is analyzed. If the PCB concentration of the insulation is 75 ppm, then the entire cable is considered to be a PCB Item with a PCB concentration of 75 ppm.

Example #2:

A sludge with liquid and non-liquid phases needs to be separated into the various phases, and then each phase shall be analyzed for PCB concentrations.

Example #3:

Heat-resistant aluminum (HRA) paint with a PCB concentration of 75 ppm, painted on a pipe, would cause the pipe and paint to be managed as a PCB Item, unless the paint is removed from the pipe.

b. Detection Limit

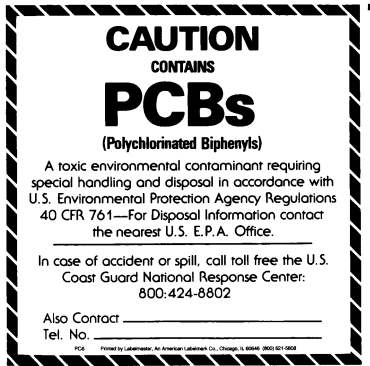
1. Obtain a minimum detection limit as close to less than one (< 1) ppm as possible.
2. If a detection limit of one (1) ppm cannot be obtained, provide a brief explanation in the lab report.
3. Analytical results showing non-detectable PCBs ≥ 50 ppm are not acceptable and shall be re-analyzed. If necessary the item shall be managed as PCBs ≥ 50 ppm.

12. MARKING PCB ITEMS

A. Specific Areas to be marked as a PCB Item

The following PCB Item areas shall be marked with Mark M_L . If the item is too small for the Mark M_L , then Mark M_S :

- a. Use the PCB markings below to label PCB Items.

Mark M_LMark M_S

Note: Labels with these markings may be obtained from the On-site Hazardous Waste Contractor (OHWC) at 8-7804 or EH&S at 8-5523.

1. PCB containers (bags, boxes, drums & rolloff boxes)
2. Waste PCB Items not packaged in PCB containers
3. Electric motors, hydraulic systems, and heat transfer systems with fluid that contains PCBs in concentrations of 50 ppm or greater
4. Transport vehicles loaded with one (1) or more PCB transformers, or two (2) PCB container(s) with more than 99 pounds of fluid containing PCBs in concentrations of 50 ppm or greater.

Note: These vehicles shall be marked on each end and each side.

5. Storage areas, including temporary areas at work sites, such as skiffs, used to store Waste PCB Items and PCB containers.
 6. Storage areas used to store PCB Items awaiting reuse
- b. Placement of Marks

All Mark M_L and Mark M_S labels shall be placed in such a way that is easily read by any person inspecting or servicing the PCB Item, vehicle, or storage area.

13. HANDLING PRECAUTIONS

a. General Information

1. Contractors responsible for identifying PCBs in an item shall handle them in accordance with this section. Contact Health & Safety at 688-5523 for questions or additional information concerning PPE.
2. Appropriate PPE at NNS consists of the type that is necessary to:
 - a) Prevent skin and eye contact and

- b) Protect against ingestion.

Note: PCBs are not significantly volatile and do not present an airborne hazard under normal conditions.

- b. General Requirements

- 1. Other Potential Hazards

- a) PCBs are frequently found in conjunction with other hazardous materials, such as asbestos and RCRA hazardous constituents.
 - b) The requirements for handling these other materials shall also be observed in addition to the handling requirements for PCBs. Refer to the appropriate chapter of Reference (s) when working with additional hazards.

- 2. Contact EH&S at 688-5523 before removal of fluid containing PCBs.

- c. Solid Materials

- 1. Potential Sources of PCBs:

- a) Dried paint
 - b) Dried adhesive
 - c) Double-sided tape
 - d) Electrical cables with no visible oily residue or liquid

- 2. Minimum PPE

- a) Disposable rubber gloves shall be used to prevent prolonged skin contact for persons working directly with the material. This applies to such activities as gasket removal, cleaning, and sample taking.
 - b) An air-purifying respirator [see Reference (s) for specific respirator] is required for paint removal by scraping, needle gunning, sanding and other similar removal methods.
 - c) Gloves are not required for persons working in the vicinity of PCB activities.
 - d) Additional protection, such as disposable coveralls, may be required if work is of a nature where extensive skin and clothing contact is possible.
 - e) Contact H&S for questions regarding PPE for PCBs at 688-5523.

- d. Solids with Oily Residue

See below:

Sources	<ul style="list-style-type: none"> • Wool felt gasket • Certain electrical cables
Minimum PPE	<ul style="list-style-type: none"> • Rubber gloves shall be used for handling wool felt and electrical cables with exposed ends
Other Considerations	<ul style="list-style-type: none"> • Additional protection, such as face-shields, chemical goggles, and disposable coveralls, shall be used if any free liquid can drip or ooze from the felt or electrical cable or if the work is of a nature that more extensive skin and clothing contact is possible. • Dust and surfaces in ventilation systems near the wool felt shall be considered to be contaminated with PCBs and shall receive a standard wipe test survey. • Surfaces contaminated by residue leaking from electrical cables shall be assumed to have PCBs > 500 ppm unless the cables have been previously sampled and tested. EH&S will perform a wipe test in the area. Workers must wear proper PPE when in contact with residue. • Cut electrical cable will have the ends sealed with tape to prevent residue leaking.

Table 4 - Solids with Oily Residue

e. Fluids

1. Potential Fluid Sources include the following:

- a) Transformers
- b) Hydraulic systems
- c) Electric motors

Note: Many transformers at NNS and at outside facilities have been replaced or cleaned and contain non-PCB fluid. Transformers and equipment containing no PCBs often have a label that says “Non-PCB.”

2. Minimum PPE:

- a) Impenetrable gloves and face-shields or chemical goggles shall be used for handling small amounts of liquid (less than a pint).

- b) Disposable coveralls shall be used if handling larger amounts of fluids (greater than a pint) or if cleaning small amounts of fluid from more complicated surfaces.
 - c) Spill response and cleanup shall be performed in accordance with this Section.
- f. PCB Airborne Hazards

Contractor personnel in an area where an airborne PCB hazard has occurred should anticipate the need for PCB decontamination of the area. Contact EH&S and your contract coordinator to determine if PCB levels are high enough to contaminate the surrounding area above acceptable limits.

14. DISPOSAL

a. General Disposal Requirements

1. All waste containing PCBs shall be managed by the Onsite Hazardous Waste Contractor. Contractors shall be responsible for proper identification and marking PCB Items and Waste Non-TSCA Regulated Items in accordance with this section.
2. Contaminated porous surfaces, such as wood, concrete, and coated metal surfaces, can be managed in-place by restricting further mitigation of the PCBs from within the porous material.

Note: Contact Environmental Engineering for requirements to manage PCBs in-place.

3. Accumulation Time Limit

- 1) Disposition of Waste PCB Items shall be arranged as quickly as possible.
- 2) Whenever possible, all PCB waste shall be characterized before removing the item from its in-service location.
- 3) NNS is not permitted to store Waste PCB Items for over 30 days.

b. PCB Item Disposal Requirements

1. Item Marking

Marking an item with "Date of Removal from Service for Disposal" (DORSFD) is critical to make sure Waste PCB Items are shipped off-site within the required timeframe.

- a) An item **known** to contain PCBs shall be considered a waste on the date of removal from service for disposal.

- b) An item **suspected** to contain PCBs shall be considered a waste when laboratory analysis confirms the waste contains PCB \geq 50ppm.

2. Packing Solids

- a) Package the waste in a UN approved 55-gallon steel drum.
- b) Obtain approval for bulk containers, such as rolloff boxes and cubic yard boxes, from Environmental Engineering.

Note: Items with PCBs bound within solid material, such as painted items and electrical cables, may be exempted from this requirement **with approval** from EH&S.

3. Packing Liquid

Package PCB items containing liquid, such as capacitors and transformers, in an UN-approved steel drum surrounded by enough absorbent material to soak up twice the amount of liquid.

4. Labeling

- a) Label the container or item by completing a Waste Label (WL) (NN 4651, rev 4) and the PCB M_L label with a durable marker.
- b) If a Waste Label (WL) (NN4651, rev 3) is used, a Hazard Warning Label (HWL) (NN4694 rev 2) must be used.
- c) Include the "Date of Removal From Service for Disposal" on the PCB Label.
- d) Include the statement "Contains PCBs" on the Waste Material label.
- e) Personnel labeling the container shall write "Environmental Engineering at 688-5523" on the "also contact" section of the PCB M_L label.
- f) Labeling suspect-PCBs "awaiting analysis"
 - 1) Mark the item with a Waste Label (WL) (NN4651).
 - 2) Date the label when the item was removed.
 - 3) **Do not** use a PCB label on the item. Once the laboratory results are complete, the waste will be marked accordingly.

5. Removed from Service PCB Items

Items, such as felt gaskets and electrical cables, which are placed in poly bags for disposal, will have the "Date of Removal from Service for Disposal" clearly marked directly on the bags. Each bag will be dated and marked to insure they are dispositioned within acceptable disposal timeframes.

Note: Cables and lagging/insulation may also require additional packaging and labeling requirements for asbestos. Refer to the asbestos section

of this manual for instructions.

6. Accumulation Time Limit
 - a) Do not accumulate the waste at a work site for longer than 24 hours.
 - b) When the waste is generated, make certain that it is packaged, labeled. Contact the OHWC at 8-7804 for material pick-up.
 - c) NNS is **not** legally permitted to store this waste for greater than 30 days, unless approved by Environmental Engineering for PCB bulk product/remediation storage.

7. Transportation from the Work Site
 - a) Contact the OHWC at 8-7804 to arrange for transportation of the waste from the work site to the NYAA.
 - b) Contractors shall **not** transport the waste to the NYAA.

8. Material Receipt
 - a) Retain a copy of the Waste Material Transfer form completed by the OHWC.
 - b) In addition to the information required by the form, provide the following:
 - 1) The customer contract number or hull number on the form if the waste was created on a vessel.
 - 2) Navy programs may dictate disposal methods for certain waste types. Indicate the disposal method on the forms when applicable.
 - 3) If no designation is indicated, then the type of disposal shall be as agreed to between the OHWC and Environmental Engineering.

15. SPILLS AND SPILL RESPONSE

- a. Contact *911 or 0-2222 (cell phones dial 380-2222) immediately for spills involving liquid containing PCBs. Control the spills in accordance with the following procedures:
 1. Secure the area to prevent tracking the PCB liquid.
 2. Protect any drains that may become contaminated by the material.
 3. Place absorbent material (clay, cloth) on the spill.

Newport News Shipbuilding, a division of
Huntington Ingalls Industries
Contractor Environmental, Health and Safety
Resource Manual

Part IV - Appendices

Part IV — APPENDICES

A. TABLE OF DEFINITIONS AND ACRONYMS

Term	Definition
Air Emissions	The release or discharge of a pollutant into the ambient air through a stack or as a fugitive dust mist or vapor.
Air Pollutants	Combustion exhaust or industrial smoke, dust, fumes or vapors from any process, and solid or liquid material that has anything evaporating from it other than water.
Allowable Emissions	The maximum rate of air emissions from a stationary source as determined by the DEQ.
Ambient Air	The air outside a building that is open to the atmosphere.
Baghouse	An enclosed filter system designed to capture and contain particulate.
Bench Testing	Simulation of treatment for the IW used to determine if OWTF or CWTP plant could handle the waste stream.
BMP	Best Management Practices
Boiler	An enclosed piece of equipment using controlled flame combustion to generate steam, heat fluids or other gases.
CAA	Clean Air Act (1955).
CAAA	Clean Air Act Amendments (1970, 1977, and 1990).
Carbon Monoxide (CO)	A pollutant caused by inadequate oxygen in the combustion process.
CFC	Chloroflourocarbon
CFC Coordinator	Employee responsible for recording the amount and type of regulated refrigerant installed, used, removed, or reclaimed by the department.
CFR	Code of Federal Regulation
Characteristic Hazardous Waste	Any waste that meets the EPA definitions of flammability, corrosivity, toxicity, or reactivity. Generators are responsible for determining whether a waste meets the EPA definitions. This determination is based on lab analysis or knowledge of the process and materials generating the waste.
CHASE	Contractor Health and Safety Evaluation form.
Chlorofluoro-carbon (CFC)	A group of substances regulated by the EPA because they delay the natural regeneration of the stratospheric ozone layer.
CHT	Collection Holding Transfer
CO	Carbon Monoxide

Term	Definition
COC	Chain of Custody form for laboratory samples.
COC	Certificate of Compliance form for cranes.
Cold Work	Any operation involving the use of flammable and combustible materials such as fuels (including disassembly and removal of fuel lines), solvents, paints, adhesives, plastic resins, penetrants, and coatings. Tank cleaning operations involving cargo and fuel tanks having contained flammable or combustible liquids or gases are also considered cold work.
Combustible Liquid	A liquid having a flash point at or above 100° F.
Construction/ Demolition Debris	A type of debris that contains mostly inert material generated from the construction, repair, or demolition of pavements, buildings, or structures. Examples include soil, lumber, sheetrock, brick, shingles, concrete, glass, pipe, and pavement.
Contractor	Any legal entity with a contract to perform production work on NNS property or on an NNS-controlled worksite.
Contractor Coordinator	An NNS employee is assigned to monitor contractor activities, with additional specific responsibilities for contractor health and safety.
Control Technology	The method used to control emissions. May be either a piece of equipment or a process or material change.
Conventional paints	Paints containing drying oils and resins, including alkyd, which give off flammable vapors with a flash point of 80° F or higher.
Corrosive Waste	Waste with a low or high pH (i.e. acid or caustic), or capable of corroding metal.
Crane Accident	An undesired event within the envelope of operation of the lifting and handling equipment that results in physical harm to a person or damage to property.
Crane Incident	An undesired event within the envelope of operation that could result in physical harm to a person or damage to property. Incidents are the “near misses” that have the potential to be an accident.
Customer	At NNS, the non-employee entity which provides work to NNS, such as the Navy or a ship owner.
CWA	Clean Water Act (1972).
CWF	Consolidated Waste Facility
CWTP	Chemical Waste Treatment Plant
Cyclone	An enclosed duct or stack designed to spiral gases and remove heavy particulate by settling.

Term	Definition
Date of removed from service for disposal	A PCB Item is considered removed from service when it is completely removed from its in-service application and it is designated for disposal. 40CFR761.65(c)(1)
DEQ	Department of Environmental Quality
Domestic Wastewater	Wastewater from toilet, sink, laundry waste, etc.
DOT	U. S. Department of Transportation
EE	Environmental Engineering (in NNS Dept O27)
EH&S	Environmental, Health and Safety (EH&S), NNS Department O27.
EH&S	Environmental, Health and Safety
End Use Containers	Portable containers for hazardous chemicals which are intended only for the immediate use of the employee who performs the transfer.
Envelope of operation	The environment around a load handling operation which includes the mechanical, electrical and structural components of the crane(s) involved including structural supports such as ground rails, pilings, columns, etc., the rigging gear used to attach the load to the crane, the operating team including (but not limited to) the operator, hook-on personnel, track walkers and supervision, and the load being lifted.
EPA	U. S. Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide and Rodenticide Acts (1947)
Fire watch	Person who has had specific fire prevention and control training and has been certified by demonstration and a written examination and is assigned to monitor hot work operations for fire prevention.
Flammable Liquid	A liquid having a flash point below 100° F.
FP&C	Fire Prevention and Control.
Free Liquids	Liquids which readily separate from the solid portion of a waste under ambient temperature and pressure. (As determined by the paint Filter Liquids Test, Method 9095, U.S. EPA, Publication SW-846) {9VAC20-80-10}
Fugitive Emission	Any air pollutants emitted directly to the atmosphere other than through a stack.
Garbage	Waste that contains organic material, such as food, which can decompose and cause odors.
Generator Knowledge	Identification of a waste based on knowledge of the operation, the materials making-up the waste and testing performed on previous or similar operations.
Handling	Includes packaging, repackaging, leak correction, spill cleanup, and decontamination.

Term	Definition
HAP	Hazardous Air Pollutant
Hazardous Air Pollutant (HAP)	A chemical substance that has been shown to be toxic to human health or the environment and is included on the EPA list of over 200 chemicals and compounds included in Title III of the Clean Air Act Amendments of 1990.
Hazardous Material	Any material that has the potential to present a hazard to human health, the environment, or property. Hazardous waste is considered a hazardous material.
Hazardous Material Emergency	An unplanned event that involves a hazardous material; presents a danger to human health, the environment, or property; and requires immediate response actions. Examples include: a fire caused by, or threatening to release, hazardous material; an injury or illness resulting from accidental contact with hazardous material; or a release of a hazardous material that cannot be controlled by NNS personnel.
Hazardous Material Incident	An unplanned event that involves a hazardous material; DOES NOT present a danger to human health; but requires immediate response actions to protect the environment or property. Examples include: personnel exposure above established (OSHA, ACGIH, etc.) limits resulting from accidental contact with hazardous material that does not require immediate action to prevent an illness or injury; or a release of a hazardous material that can be controlled by NNS personnel.
Hazardous Waste	A waste that meets the EPA definitions of ignitability, corrosivity, toxicity, or reactivity; or presents a hazard to human health and the environment when improperly managed. For the purposes of this manual a hazardous waste is a waste that is determined to be a "hazardous waste" according to the criteria in 9VAC 20-60-140, "Virginia Hazardous Waste Management Regulations", "Identification and Listing of Hazardous Wastes". EE (O27) will provide guidance to personnel generating waste in making this determination.
HCFC	Halogenated Chloroflourocarbon
Hot Work	Any operation involving an electric arc or open flame from a torch, including flame cutting and heating, carbon arc cutting, arc welding, stud welding, tack welding, torch brazing. Also includes, in ship construction and repair, grinding, drilling, chipping, abrasive blasting and the use of heater bars, except when these are excluded by a NFPA-certified Marine Chemist.
HRSD	Hampton Roads Sanitation District
Hydrochloro-fluoro-carbon (HCFC)	A group of substances regulated by the EPA because they deplete the stratospheric ozone layer.

Term	Definition
Ignitable Waste	<ol style="list-style-type: none"> 1. Waste that contains liquid and has a flash point < 140°F or 2. Waste that is solid that can catch fire by friction or absorption of moisture (by water or air) and burns vigorously, or 3. Is an ignitable compressed gas, or 4. Is an oxidizer.
Industrial Debris	A type of debris that contains mostly solid inert material generated from industrial processes. Examples include spent abrasive, street sweepings, and foundry sand.
Industrial Sludge	Waste sludge that cannot be verified to be completely solid, and therefore must be managed as a liquid.
Industrial Wastewater (IW)	Water that has been used and contaminated by industrial operations. For the purposes of this procedure, IW does not include hazardous waste. Examples include steam condensate, dry dock drainage, dry dock pumpdown, OWTF/CWTP effluent, hydro-testing effluent, laundry effluent, spent detergent solutions, sewage and storm water.
Industrial Wastewater Outfall	An outfall that is intended to discharge IW to the James River.
Item	An article, unit or object (e.g., equipment, electrical cable) and materials (e.g., paint, adhesive, insulation).
IW	Industrial Wastewater
IWD	Industrial Waste District
Less Than 90 – Day Area	A generator may accumulate hazardous waste on-site up to 90 days without a permit or without having interim status provided that the waste is placed in containers/tanks and/or drip pads. The container must clearly be labeled, specifically identifying waste type, marked as “Hazardous Waste” and dated, indicating the start of accumulation.
Liquid Wastewater (LW)	Includes any discarded fluid that is not domestic or hazardous wastewater. For the purposes of this procedure, liquid waste does not include hazardous waste. Examples of LW include antifreeze, used oil, hydraulic fluid, liquid detergent, aqueous film forming foam (AFFF), tank bilge water, and water based paints.
Listed Hazardous Waste	A specifically named waste (e.g. Toluene) designated by the EPA as hazardous waste because it meets the EPA definitions of flammability, corrosivity, toxicity, or reactivity; or presents a hazard to human health and the environment when improperly managed. Generators are responsible for determining whether a waste meets the description on the EPA list. This determination is based on knowledge of the process and materials generating the waste, not lab analysis.

Term	Definition
Local Landfill	NNS currently uses Sanifil Bethel Landfill, located in Hampton, Virginia.
Long-term	Continuous exposure to PCBs has been shown to cause cancer and reproductive damage in certain laboratory animal tests. Therefore, PCBs are considered a probable carcinogen and reproductive hazard. A severe acne-like rash (chloracne) that may persist for years is another health hazard.
LW	Liquid Wastewater
Mixed Waste	A waste that is determined to be a "hazardous waste" according to the criteria in 9VAC 20-60-140, "Virginia Hazardous Waste Management Regulations", "Identification and Listing of Hazardous Wastes", and is also radioactive material. EH&S will provide guidance to personnel generating radioactive waste in making the determination that the waste is a "hazardous waste".
MSDS	Material Safety Data Sheet.
NACE	National Association Corrosion Engineers
NESHAPS	National Emission Standards for Hazardous Air Pollutant
New Liquid Waste	If an operation generating a previously approved liquid waste is changed, then the waste shall be considered a 'new' liquid waste' and will require approval from EE before discharging.
NNS	Newport News Shipbuilding
Nitrogen Oxides (NOx)	A category of air pollutants generated from combustion processes. NOx is converted to ground-level ozone when subjected to sunlight.
NNPN	Newport News Part Number
Non-liquid PCBs	Materials containing PCBs that by visual inspection do not flow at room temperature (25C or 76F).
Non-PCB Item	Any item or material that contains PCBs in a concentration less than 1 ppm.
Non-Porous Surface	A smooth unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface.
Non-TSCA Regulated Item	Any item or material that contains PCBs in a concentration of 2 ppm up to 49 ppm. This includes any item or material that has been tested and in which the results do not verify that the PCB concentration is less than 1 ppm. For example, if analysis of a sample detects no PCBs, but the minimum detection limit is 23 ppm, then the sample shall be considered to have up to 23 ppm PCBs.
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System

Term	Definition
NYAA	North Yard Accumulation Area
O27	NNS Department O27, Environmental, Health and Safety
O31	NNS Department O31, Laboratory Services
ODC	Ozone Depleting Compound
OHWC	Onsite Hazardous Waste Contractor. Hazardous waste generated at NNS shall be managed by the OHWC.
On-Site Hazardous Waste Management Contractor	A company contracted by NNS to provide waste management & waste disposal services. They are located at the North Yard Accumulation Area (North Yard Paint Storage - Stop 788). Their phone number is 8-7804.
Opacity	The degree, to which emissions reduce the transmission of light and obscure the view of an object in the background, expressed as a percentage.
Open Burning	The combustion of any material without adequate temperature or combustion time and without emissions control.
OSHA	Occupational Safety and Health Administration.
OSHA	Occupational Safety and Health Act (1970).
OSHA 300 log	Annual log of injuries and illnesses which OSHA requires employers to maintain in a specific format.
Other (non-conventional) paints	Paints which contain drying oils and resins, including alkyd, and give off flammable vapors with a flash point (closed cup) of less than 80° F.
Outfall	The location where a point source discharges to the James River. This location may be located off of NNS property (also known as point source discharge).
OWTF	Oily Waste Treatment Facility
Ozone Depleting Compound (ODC)	Any substance which delays or interferes with the regeneration of the stratospheric ozone layer, typically a chlorofluorocarbon cleaner or refrigerant such as Freon [®] that evaporates or is released from a vent.
Paint Debris	Waste sludge that contains paint, or a waste that contains paint and in which the waste cannot be verified to be completely solid, and therefore must be managed as a liquid.
Particulate	Finely divided solid <u>or</u> liquid fume, dust or mist.
PCB	Polychlorinated Biphenyl — Any chemical substance, or combination of substances, that contains the polychlorinated biphenyl type of molecule.

Term	Definition
PCB Bulk Product Waste	Waste derived from manufactured products containing PCBs in a non-liquid state (not including manmade items contaminated by a PCB spill).
PCB Container	Any package used to contain PCBs, a PCB Item, or a Waste PCB Item regardless of whether or not the inside of the container is contaminated with PCBs.
PCB Item	<p>Any item or material that contains PCBs in a concentration of 50 parts per million (ppm) or greater. This includes any item or material that has been tested and in which the results do not verify that the PCB concentration is less than 50 ppm.</p> <ul style="list-style-type: none"> • For example, if analysis of a sample detects no PCBs, but the minimum detection limit is 75 ppm, then the sample shall be considered to have up to 75 ppm PCBs. • If an item or material contains a smaller PCB Item (e.g. electrical cable insulation), then the whole item shall be considered a PCB Item. • If an item is a multi-phasic waste, the disposal requirements are generally based on the highest PCB concentration. A sample of sludge containing both a liquid and non-liquid phases would first need to be separated into its various phases, and each phase analyzed for PCB concentration.
PCB Remediation Waste	Waste containing PCBs as a result of a spill, release, or other unauthorized disposal.
PCBs	Polychlorinated biphenyls. Any chemical substance, or combination of substances, that contains the polychlorinated biphenyl (PCB) type of molecule.
Permitted Discharge	A discharge of IW/stormwater that has been approved and permitted for discharge by a regulatory agency or EE.
Point Source	The system that carries an IW/stormwater discharge from a source to the James River. This includes any dry dock drainage system, vessel discharge system, pipe, hose, ditch, channel, tunnel, conduit, well or container.
Point Source	Air emissions from a stack. In some cases, entire facilities are considered to be point sources from a regulatory standpoint.
Polychlorinated Biphenyl	PCB
POTW	Publicly-Owned Treatment Works
PPB	Parts Per Billion
PPE	Personal protective equipment.

Term	Definition
PPM	Parts Per Million
Production Area	All areas in the shipyard at NNS except: the main roadway between the Clinic, Building 86 and the 37 th St. gate, inside offices, and the roadway between Building 1744 and Building 1821.
Production Work	Operations which involve hazards to personnel, such as construction, demolition, hot work, blasting, painting, material handling, working with hazardous materials or equipment and any other similar operations, but not: clerical and other office work, and similar operations.
RCRA	Resource Conservation and Recovery Act (1976).
Reactive Waste	Waste is reactive if it presents any of the following properties: normally unstable, reacts violently with water, forms potentially explosive mixture with water, generates toxic gases or fumes when mixed with water, it is a cyanide or sulfide bearing waste which can generate toxic gases, it is capable of detonation at standard pressure, or is a forbidden explosive. Reactive waste has a D003 waste code.
Recyclable Waste	Waste that potentially has value when segregated from other waste and meets the following criteria: <ul style="list-style-type: none"> • A written agreement exists with a recycler. • The material conforms to the recycler's material characterization. • The Commonwealth of Virginia has mandated recycling. (The local jurisdictions have to meet a 25% goal.)
Recyclable Waste	Waste that potentially has value when segregated from other waste and meets the following criteria: A written agreement exists with a recycler. The material conforms to the recycler's material characterization. At least 75% of the accumulated material is sent to the recycler annually.
Regulated Refrigerant	Refrigerants regulated by the EPA because they are Ozone Depleting Compounds. Regulated refrigerants are CFCs and HCFCs.
Removal From Service Date	Determination of the date when a PCB Item is removed from service affects storage and labeling requirements. Refer to Part II.E for guidance on determining this date.
Removed From Service	A PCB Item is considered removed from service when it is completely removed from its in-service application and it is no longer intended to be used.
Rubbish	Waste that contains naturally-occurring organic material which decomposes slowly without odor. Examples include trimmings from trees or shrubs, leaves, and grass.
SAA	Satellite Accumulation Area

Term	Definition
Safety Dispensing can	A metal container equipped with a spring-loaded self-closing lid on the pour spout and a flash arrestor screen in the spout. It shall be painted red and prominently labeled identifying the contents.
Satellite Accumulation Area	Temporary storage area for hazardous waste where a generator may accumulate up to a total of 55 gallons waste “in containers at or near a point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste.” Once a container is full it must be dated and moved in no later than 72 hours.” The waste containers must be marked with the words “Hazardous Waste” or other words which identify the waste.
Ship	Movement of material or waste from an NNS facility to another organization such as a disposal site or customer.
Short-term	Exposure to high levels of PCB vapors over a short period of time can cause irritation to the eyes, nose, and throat. It can also cause liver damage.
Solid Waste	A “solid waste”, as defined by the EPA, can be solid, liquid or a contained gas. Hazardous waste, liquid waste and refuse are all examples of solid waste.
Source	Any building, structure, facility, vessel or installation from which there is or may be a discharge of pollutants.
Sourcing	NNS Department O51 formerly called “Purchasing.”
SOx	Sulfur oxides.
SPCC Plan	Spill Prevention, Control and Countermeasures Plan
SPCCP	Spill Prevention, Control and Countermeasures Plan
Speculatively Accumulated Material	<p>A type of recyclable waste that must be disposed of because it has been stored for over 30 days and <u>does not meet</u> the following criteria: (Waste that <u>does meet</u> this criteria can be stored for longer than 30 days and is considered recyclable waste.)</p> <ul style="list-style-type: none"> • A written agreement exists with a recycler. • The material conforms to the recycler’s material characterization. • At least 75% of the accumulated material is sent to the recycler annually.
SSP	Standard Shipyard Procedures
STAR	The highest level of achievement in the VPP.
Stationary Source	Building, structure, facility or installations that emits or may emit air pollutants.
Storm Water	Rainwater runoff, melting snow runoff, surface runoff and drainage.

Term	Definition
Storm Water Outfall	An outfall that is intended to discharge only storm water runoff, snow melt runoff and surface runoff and drainage to the James River.
Sulfur oxides (SO _x)	A category of air pollutants from the combustion of fossil fuels or other industrial processes. SO _x contributes to industrial haze and acid rain.
Suspected PCB item	An item or type of material suspected of containing PCBs. Suspected PCB Items are listed in Appendix B.
SWMR	Solid Waste Management Regulations
Task Teams	EH&S task teams are formal teams of employees who perform specific health and safety activities in assigned areas of responsibility. These teams consist of volunteer hourly and salaried employees, and in some cases, representatives of ship's force and outside contractors. These teams cover all production areas of the shipyard. Team responsibilities include quarterly safety inspections, documentation and follow-up of discrepancies and assisting in accident investigation and training.
TCLP	Toxicity Characteristic Leachate Procedure
Toxic Waste	Waste that is poisonous to humans or the environment.
Transport	Movement of material or waste within NNS, or on public roads between NNS facilities.
Trash	Waste that contains man-made organic material which decomposes slowly without odor. Examples include newspaper, plastic, cigarette butts, packaging material, and rags.
TSCA	Toxic Substances Control Act. This federal law authorizes the EPA to control the management of PCBs.
Universal Waste	Universal waste is a subset of hazardous waste that includes mercury light bulbs, lead and cadmium batteries and other substances hazardous to human and environmental health. Universal waste is a streamlined management program to encourage the collection and recycling of these commonly generated hazardous wastes.
Universal Waste Handler	A Universal Waste Handler is a person who disposes batteries and bulbs to the appropriate HWAA when batteries and bulbs become waste. A Universal Waste Handler is also defined as a person who stores and labels waste.
Universal Waste Transporter	A person who moves universal waste shipments from handler to handler or to disposal facilities.
VAC	Virginia Administrative Code
VDEQ	Virginia Department of Environmental Quality
VOC	Volatile Organic Compound

Term	Definition
Volatile Organic Compounds (VOC)	Organic compounds usually found in cleaners, solvents and paints that evaporate and contribute to the formation of photochemical smog and ground-level ozone.
VPDES	Virginia Pollutant Discharge Elimination System
VPP	The OSHA Voluntary Protection Program.
Waste	A material, which is no longer usable in the process or operation for which it was designed or obtained.
Waste PCB item	A PCB Item becomes a waste when it is removed from service. A PCB Item is considered in service as long as it remains in use or serviceable in its existing application.

Contractor Environmental, Health and Safety Evaluation Form

NN 9173

**Complete this form if employees of your company will perform work at Newport News Shipbuilding.
If you have any questions, call George Bradby at 757-688-1645 or Ginger Buskee at 757-688-2249.
Mail this form (with supporting documentation) to: Contractor Health & Safety Program, Building 79-1,
Newport News Shipbuilding, 4101 Washington Ave., Newport News, Virginia 23607-2770**

Resource Manual Website: <http://supplier.huntingtoningalls.com>

Company Name:	
Address:	
City/State/Zip:	
Company Officer:	Title:
Phone Number:	SIC (Standard Industrial Classification Code):
Fax Number:	NAICS (North American Industry Classification System):
E-mail:	
Type of work at Newport News Shipbuilding:	
Newport News Shipbuilding Contact / Dept. / Phone	

A. Environmental, Health and Safety Contact			
List the following information about the person who will oversee the EH&S aspects of your Newport News Shipbuilding operations. This person must be competent to recognize environmental, health and safety hazards and have the authority to take corrective action.			
H&S Name:		Position:	
Phone:	Pager:	E-mail:	
Env. Name:		Position:	
Phone:	Pager:	E-mail:	

B. Injury Rates*					
1. Submit copies of your OSHA 300A log summaries for the last three complete calendar years.					
2. List the total number of management/employee hours worked for the last three complete calendar years:					
Year	Hours Worked	Year	Hours Worked	Year	Hours Worked

*Provide the above information for your entire firm

C. Subcontractor Operations	
1. Submit a list of all subcontractors you plan to use at Newport News Shipbuilding.	
2. Copy this form for your subcontractors. Each subcontractor must complete and submit this form.	

D. OSHA Citations or Environmental Notices of Violations (NOVs)	
1. Has your company been issued a citation by OSHA in the last three years? Yes [] No []	
<ul style="list-style-type: none"> ▪ If "Yes" provide the citation date, written description of the citation, code reference and abatement action. 	
2. Has your company received any environmental NOVs in the past three years? Yes [] No []	
<ul style="list-style-type: none"> ▪ If "Yes" provide the date of the NOV, a written description of the NOV, explaining what happened, why it happened and what programs were established to prevent the occurrence from happening again. 	

E. Health and Safety Programs

Contractor Environmental, Health and Safety Evaluation Form

Read carefully and answer the following statements about your health and safety programs. Not all programs or program elements apply to all operations. If the program or program element does not apply to your work at the shipyard, please check the N/A box and be prepared to discuss this selection. If a program does apply check “yes” and provide us a copy of your written program addressing the elements listed for the respective section. If “no” go to the next program number.

1. Abrasive Blasting	Yes	No	N/A
A. Does your operation include abrasive blasting?			
B. Do you have a written abrasive-blasting program to ensure compliance with 29 CFR 1915?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Exposure monitoring (grit, lead, surface coatings, arsenic, etc.?)			
• Surface paint sampling			
• Grit Identification (MSDS)			
• Ventilation requirements			
• Protective work clothing and equipment			
• Personal hygiene (procedures & facilities)			
• Respiratory protection			
• Clean-up and waste disposal			
• Inspection criteria for blasting equipment			
• Additional OSHA standards addressed (noise, lead, fall protection, arsenic, etc.)			
2. Tributyltin (TBT) Antifouling Paint	Yes	No	N/A
A. Will your operation include occupational exposure to antifouling (TBT) paint?			
B. Do you have a written program to ensure compliance with 29 CFR 1915, 40 CFR 63.780 et seq., or 9 VAC 25-260-5 et seq. as applicable?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Pesticide licensing			
• Control procedures (work practices/equipment)			
• Paint receipt, storage, approval			
• Demarcation of regulated areas			
• Respiratory protection			
• Protective work clothing and equipment			
• Personal hygiene (procedures and facilities)			
• Paint cleanup and disposal			
3. Arsenic	Yes	No	N/A
A. Does your operation include occupational exposure to arsenic (Abrasive blasting)?			
B. Do you have a written arsenic program to ensure compliance with 29 CFR 1910.1018 or 1926.1118 as applicable?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Exposure monitoring (initial and periodic)			
• Medical surveillance			
• Work practices			
• Control procedures (work practices/equipment)			
• Respiratory protection			
• Protective work clothing and equipment			
• Personal hygiene (procedures & facilities)			
• Demarcation of regulated work areas			




Contractor Environmental, Health and Safety Evaluation Form

4. Asbestos	Yes	No	N/A
A. Does your operation include occupational exposure to asbestos?			
B. Have you made your employees aware of the hazards of asbestos, and empowered them to stop work if they suspect an asbestos exposure is present? (Mandatory)			
C. Do you have a written asbestos program to ensure compliance with 29 CFR 1910.1001, 1915.1001, or 1926.1101 as applicable?			
D. Your written program needs to contain the following elements: <ul style="list-style-type: none"> • Licensing & Training – Include specific procedural training elements. • Exposure monitoring • Medical surveillance • Worker/supervisor/etc. accreditation &/or licensing • Job specific work plan • Control procedures (work practices/equipment) • Demarcation of regulated areas • Respiratory protection • Protective work clothing and equipment • Personal hygiene (procedures & facilities) • Personnel notification (for work where other than contractor personnel are present) • Procedure for releasing (clearing) work area 			
E. Please provide job specific asbestos work plans for evaluation and approval prior to the commencement of asbestos operations. (Mandatory)			
F. Please provide a DOT Hazmat Security Plan (49 CFR Part 172.800) for evaluation and approval prior to shipping asbestos waste offsite. (Mandatory)			
5. Bloodborne Pathogens	Yes	No	N/A
A. Does your company have a written procedure detailing how injured employees will be provided first aid medical treatment? This program is mandatory.			
B. Does your procedure require outside or host medical services be contacted to provide first aid?			
C. Does your procedure require designated and trained company employees to provide first aid medical treatment?			
D. Do you have a written Bloodborne pathogen program to ensure compliance with 29 CFR 1910.1030?			
E. Your written program needs to contain the following elements: <ul style="list-style-type: none"> • Training – Include specific procedural training elements. • Exposure controls • Methods of compliance (universal precautions, work practices, PPE, etc.) • Post-exposure evaluation & follow-up • Communication of hazards to employees (labels, etc.) • Recordkeeping (medical records – to include retention time) 			
6. Confined Spaces	Yes	No	N/A
A. Does your operation include entering confined & enclosed spaces?			
B. Do you have a written confined space program to ensure compliance with 29 CFR 1915 Subpart B, 1910.146, or 1926.21 (b)(6)(i) as applicable?			
C. Your written program(s) needs to contain the following elements: <ul style="list-style-type: none"> • Training of confined space entrants – Include specific procedural training elements. • Training/Attendants (non-shipboard only) – Include specific procedural training elements. • Requirements for Competent Person or Certified Marine Chemist • Precautions before entering confined spaces • Entry permit (non-shipboard) – Include sample of permit. • Posting of entry signs at space (shipboard) • Exchange of hazard information between employers • Cleaning and cold work • Hot work • Maintenance of safe conditions – to include frequency of testing confined space 			

Contractor Environmental, Health and Safety Evaluation Form

7. Electrical Safety			
	Yes	No	N/A
A. Does your operation include electrical system(s) operations?			
B. Do you have a written electrical safety program to ensure compliance with 29 CFR 1910.147, 1910 Subpart S, 1915 Subpart L, or 1926 subpart K as applicable?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Control procedures			
• Protective work clothing & equipment			
• Arc flash hazard			
• Lockout/Tagout (electrical sources)			
8. Fall Protection			
	Yes	No	N/A
A. Does your operation include unprotected elevated work sites, five feet (5') (NNS policy) or more above the floor, deck, or working surface?			
B. Do you have a written fall protection program to ensure compliance with 29 CFR 1910.23 (b) & (c), 1910.66(j), 1910.67(c), 1915.159, 1926.104, 1926.105, 1926.106, 1926.453(b)(2)(v), or 1926 Subpart M as applicable?			
C. Your written program needs to contain the following elements:			
• Training (body harness and/or positioning devices) – Include specific training elements.			
• Competent Persons (Requirements for Fall Protection Competent Persons.)			
• Criteria for installation of lifelines or anchorage points			
• Criteria for the use of a safety harness			
• Criteria for equipment pre-issue inspection			
9. Hazard Communication			
	Yes	No	N/A
A. Does your company have a written hazard communication program to ensure compliance with 29 CFR 1910.1200, 1915.1200 or 1926.59 as applicable?			
B. MSDSs for all hazardous materials and the quantities used will be provided to Newport News Shipbuilding.			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• MSDS management:			
Acquisition			
Updates			
Access for employees			
Availability to other employers & employees			
• Labeling (original and secondary containers)			
• Non-routine tasks			
D. Your written program needs to require all containers at Newport News Shipbuilding to be labeled, including those for immediate use. (Mandatory)			
10. Hearing Conservation			
	Yes	No	N/A
A. Does your operation include exposures to sound levels above 85 dBA TWA?			
Do you have a written hearing conservation program to ensure compliance with 29 CFR 1910.95 or 1926.52 as applicable?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Equipment/noise controls (if applicable)			
• Periodic exposure monitoring and employee notification			
• Protection threshold (when hearing protection required)			
• PPE selection (types available)			
• Audiometric testing and employee notification			
11. Ladder Safety			
	Yes	No	N/A
A. Does your operation include the use of ladders?			
B. Do you have a written program to ensure compliance with 29 CFR 1910.25, 1910.26, 1910.27, 1915.72, or 1926.1053 as applicable?			
C. Your written program needs to contain the following elements:			

Contractor Environmental, Health and Safety Evaluation Form

<ul style="list-style-type: none"> • Training – Include specific procedural training elements. • Inspection criteria (prior to installation and use) • Installation/securing • Construction methods 			
12. Laser Safety	Yes	No	N/A
A. Does your operation include the use of laser equipment? (Levels, pointers, positioning equipment).			
B. Do you have a written program to ensure compliance with ANSI Z136.1-1993?			
C. Your written program needs to contain the following elements:			
<ul style="list-style-type: none"> • Training – Include specific procedural training elements. • Hazard evaluation and classification • Control Measures • Medical surveillance (Class 4 lasers and laser systems) • Non-beam Hazards (Class 4 lasers and laser systems) 			
13. Lead	Yes	No	N/A
A. Does your operation include occupational exposure to lead above 30 µg/m ³ (TWA).			
B. Do your employees have proper accreditation or licensing as applicable?			
Does your written lead program ensure compliance with 29 CFR 1910.1025 or 1926.62 as applicable?			
D. Your written program needs to contain the following elements:			
<ul style="list-style-type: none"> • Training – Include specific procedural training elements. • Worker/supervisor/etc. accreditation/licensing (if applicable) • Work plan development • Exposure monitoring and employee notification (initial & periodic) • Medical surveillance and employee notification • Protective work clothing and equipment • Ventilation requirements • Demarcation of regulated work areas • Respiratory protection program • Personal hygiene (procedures & facilities) 			
E. Lead work plans must be provided to Newport News Shipbuilding for evaluation and approval prior to the commencement of lead operations. (Mandatory)			
14. Lockout-Tagout (29 CFR 1910 General Industry)	Yes	No	N/A
A. Does your operation expose your employees to hazardous energy sources?			
B. Do you have a written non-shipboard hazardous energy control program to ensure compliance with 29 CFR 1910.147 or 1926.417 as applicable?			
C. Your written program needs to contain the following elements:			
<ul style="list-style-type: none"> • Training (authorized and affected employees) – Include specific procedural training elements for authorized and affected employees. • Energy control procedure • Communication (affected employees) • Placement, removal, and transfer of locks &/or tags • Testing to ensure energy is controlled • Test or positioning equipment (jog mode) • Outside personnel (notification requirements) • Group control devices • Shift/personnel changes (removal of lock/tag by someone other than the individual who placed the device) • Type of control devices (locks/tags): <ul style="list-style-type: none"> Specific type Durable Standardized Identify the employee • Annual documented audit • Retraining requirements 			

Contractor Environmental, Health and Safety Evaluation Form

15. Lockout-Tagout (29 CFR 1915 Maritime)	Yes	No	N/A
A. Does your operation expose your employees to maritime hazardous energy sources?			
B. Do you have a written shipboard hazardous energy control program to ensure compliance with 29 CFR 1915 Subpart J and other sections of 1915 as applicable?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Boilers Boiler isolation controls Warning signs			
• Piping Systems Piping isolation controls Lockout/Tagout procedures			
• Propulsion System Jacking gear engagement procedures & controls Engine/propeller procedures & controls Warning signs			
• Anchor system controls			
D. Your program needs to be consistent with the Newport News Shipbuilding program as described in the Contractor Resource Manual.			
16. New Employee Orientation	Yes	No	N/A
A. Do you have a written program for new employee orientation?			
B. Do you maintain documentation of new employee orientation?			
17. Periodic Safety Meetings	Yes	No	N/A
A. Do you have a written program for periodic safety meetings?			
B. Will you include the Newport News Shipbuilding Health & Safety Bulletin publication in these meetings when performing work at Newport News Shipbuilding?			
C. Documentation of participation is required in these meetings.			
18. Personal Protective Equipment (PPE)	Yes	No	N/A
A. Do you have a written PPE program to ensure compliance with 29 CFR 1910 Subpart I, 1915 Subpart I, 1926 Subpart E or 1926.28 as applicable?			
B. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			
• Hazard assessment			
• Defective and damaged equipment			
• Eye and face protection – List applicable ANSI Standard.			
• Respiratory equipment			
• Head protection – List applicable ANSI Standard.			
• Foot protection – List applicable ANSI Standard.			
• Hand and body protection			
• Lifesaving equipment (fall arrest equipment, positioning systems, floatation devices, etc.)			
• Electrical protective equipment			
• Appropriate dress for work areas, i.e. loose clothing, jewelry, etc.			
• Equipment care and maintenance			
C. Have you completed job hazard assessments as required by 29 CFR 1910.132(d)(1) and/or 29 CFR 1915.152(b)?			
D. Has proper PPE been selected for your employees based on those hazard assessments?			
E. Has PPE training been provided and documented as required by 29 CFR 1910.132(f)(1) & (2) and/or 29 CFR 1915.152(e)(1) & (2)?			
19. Powered Industrial Trucks (Forklifts/Mobil Equipment)	Yes	No	N/A
A. Our operations will include Powered Industrial Trucks (forklifts).			
B. We have a written program to ensure compliance with 29 CFR 1910.178 or 29 CFR 1926 Subpart O as applicable.			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements.			

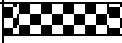






Contractor Environmental, Health and Safety Evaluation Form

<ul style="list-style-type: none"> • Safe operation • Truck-related topics • Workplace-related topics • Refresher training and evaluation • Certification • Truck operations • Truck inspection – Include Operators Daily Checklist. • Fueling or battery handling, storage, and charging • Ambient lighting requirements • Exhaust controls (if applicable) • Loading/unloading precautions (trailers, trucks, and railcars) • Modification approvals • Hazardous atmosphere/location operations (if applicable) 			
20. Powered Platforms & Vehicle-Mounted Work Platforms (JLG's & Scissors Lifts)			
Yes	No	N/A	
A. Does your operation include the use of powered platforms and/or vehicle-mounted work platforms (JLG's, scissors lifts, etc.)?			
B. Do you have a written program to ensure compliance with 29 CFR 1910.67 or 1926.453 as applicable?			
C. Your written program needs to contain the following elements:	[Checkered]		
• Training – Include specific procedural training elements.			
• Daily testing of lift controls – Include Operators Daily Checklist.			
• Fall protection requirements			
• Operational requirements for overhead work, near electric power lines.			
21. Respiratory Protection			
Yes	No	N/A	
A. Does your operation expose employees to areas where respirators are required?			
B. Do you have a written respirator program to ensure compliance with 29 CFR 1910.134 or 1926.103 as applicable?			
C. Your written program needs to contain the following elements:	[Checkered]		
• Training – Include specific procedural training elements.			
• Medical evaluations – Include sample Medical Questionnaire.			
• Fit-testing – Include Fit-Testing procedures.			
• Recordkeeping – Include retention time of records.			
• Respirator selection (based on hazard assessment)			
• Respirator use			
• Respirator maintenance and care			
• Identification of filters, cartridges, and canisters			
• Breathing air quality and use (if applicable)			
• Annual Program evaluation			
22. Rigging and Crane Safety			
Yes	No	N/A	
A. Does your operation include rigging and/or crane operations?			
B. Do you have a written program to ensure compliance with 29 CFR 1915 Subpart G, 1910 Subpart N or 1926 Subpart H & N as applicable?			
C. Your written program needs to contain the following elements:	[Checkered]		
• Training (rigger and crane operators) – Include specific procedural training elements.			
• Inspection criteria			
Lifting gear			
Crane (initial, frequency, periodic)			
Running rope			
• Operating procedures			
• Operator daily checklist			
• Crane testing program/ equipment certification			
• Maintenance program			
• Equipment modification			
• Operator fire extinguisher training			

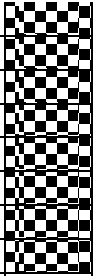

Contractor Environmental, Health and Safety Evaluation Form

23. Safety Program Documentation	Yes	No	N/A
A. Are all safety program documentations available for review by Newport News Shipbuilding?			
24. Self-Inspections	Yes	No	N/A
A. Do you have a written workplace inspection program?			
B. Are inspections and corrective actions documented?			
25. Staging/Scaffolding	Yes	No	N/A
A. Does your operation include Staging/Scaffolding?			
B. Do you have a written program to ensure compliance with 29 CFR 1910.28, 1915.71, or 1926 Subpart L as applicable?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements. Erection and dismantling Competent Persons			
• Design criteria			
• Inspection criteria			
• Safe working load criteria			
• Suspended scaffolds			
• Guardrail system & access criteria			
26. Steel Erection	Yes	No	N/A
A. Does your operation include Steel Erection?			
B. Do you have a written program to ensure compliance with 29 CFR 1926 Subpart R?			
C. Your written program needs to contain the following elements:			
• Training – Include specific procedural training elements. Qualified person to train exposed workers in fall protection Qualified person to train exposed workers engaged in special, high-risk activities			
• Specific Controlling Contractor Duties Notify the steel erector in writing regarding concrete cure and anchor bolt changes Provide adequate site layout areas and onsite access roads Preclude work below steel erection unless there is overhead protection Choose whether to accept responsibility for maintaining fall protection equipment left by erector (otherwise it must be removed)			
• Hoisting and Rigging Minimizes employee exposure to overhead loads through pre-planning and work practice requirements Prescribes proper procedures for multiple lifts (Christmas-treeing)			
• Column Anchorage Minimum 4 anchor bolts per column Written notification of proper curing of concrete in footings, piers, walls for steel columns Written notification of adequacy of anchor bolts modified/repared in the field			
• Beams and Columns Two bolts per connection before releasing hoisting line Safe procedures for making double connections at columns			
• Open Web Steel Joists – Minimize the risk of collapse: Specifying erection bridging and method of attachment Requiring erection bridging to be anchored to terminus point Specifying method of placing loads on steel joists			
• Specific work practices of hoisting deck bundles			
• Systems-Engineered Metal Buildings Requirements to minimize the risk of collapse during erection			
• Provisions that address hazards of falling objects in steel erection			
• Minimizing Falls Hazards Trips hazards Interior holes/openings Slip hazards			

Contractor Environmental, Health and Safety Evaluation Form

<ul style="list-style-type: none"> • Fall Protection <u>Above 30 feet/2 stories:</u> All workers must be protected, including connectors and deckers <u>Between 15 and 30 feet/2 stories:</u> Workers must be protected EXCEPT: - Connectors - Deckers workings in controlled decking zone (CDZ) <u>Connectors between 15 and 30 feet/2 stories:</u> - All equipment necessary to be capable of being used to be tied off (or safety nets) must be in place - Not required to tie off <u>Deckers between 15 and 30 feet/2 stories:</u> - Can use a controlled decking zone (CDZ) instead of fall protection 			
27. Trenching and Excavating	Yes	No	N/A
A. Does your operation include trenching and/or excavating activity?			
B. Do you have a written program to ensure compliance with 29 CFR 1926 Subpart P?			
C. Your written program needs to contain the following elements: <ul style="list-style-type: none"> • Training – Include specific procedural training elements. General Soil Classification Competent Person Employee protection systems (sloping/shoring/protection systems) • Soil Classification • Design & use of employee protection systems (sloping/shoring/protection systems) • Inspections • Hazard Assessments Underground installations Access and egress Hazardous atmospheres Water accumulation Exposures to vehicular traffic & surface equipment Stability of adjacent structures Protection of employees from loose rock or soil 			
28. Welding, Burning and Cutting	Yes	No	N/A
A. Does your operation include welding, burning or cutting?			
B. Do you have a written program to ensure compliance with 29 CFR 1915.14 and Subpart D, 1915 Subpart P, 1910 Subpart Q, or 1926 Subpart J as applicable?			
C. Your written program needs to contain the following elements: <ul style="list-style-type: none"> • Training – Include specific procedural training elements. • PPE (eye, face & skin protection) • Ventilation • Fire prevention (29 CFR 1915.502(b)) • Inert gas uses (if applicable) • Procedures for residues and cargoes of metallic ores • Preservative coatings exposures (welding, cutting and heating) • Welding, cutting and heating on hollow metal containers & structures 			
29. Hexavalent Chromium	Yes	No	N/A
A. Does your operation include welding, cutting or burning on metal containing 2.5% chromium or more?			
B. Does your operation involve disturbing painted surfaces by grinding, sanding, abrasive blasting or similar activities?			
C. Do you have a written Hexavalent Chromium program to ensure compliance with 29CFR1915.1026?			
D. Your written program needs to contain the following elements: (NOTE: refer to the chapter for hexavalent chromium. There are many shipyard-specific rules regarding this material that your written plan should address.)			

Contractor Environmental, Health and Safety Evaluation Form

<ul style="list-style-type: none"> • Training • Exposure monitoring and employee notification (initial & periodic) • Medical surveillance and employee notification • Protective work clothing and equipment • Ventilation requirements • Demarcation of regulated work areas • Respiratory protection program • Personal hygiene (procedures & facilities) 			
30. Ionizing Radiation	Yes	No	N/A
A. Will your operation require you to bring radioactive material or radiation producing equipment into the shipyard?			
B. If yes, please provide a copy of your radiation safety program and detailed description of the material or equipment.			

F. Environmental Programs

1. Hazardous Waste Management	Yes	No	N/A
A. Does your operation include the generation and management of waste(s)?			
B. Are you aware that no waste is to be taken off-site without prior approval from the Environmental Engineering section of EH&S?			
C. Are personnel generating and/or managing a hazardous waste accumulation area(s) trained to meet 40 CFR Part 264.34? This training shall include, but is not limited to the following: <ul style="list-style-type: none"> • Proper waste handling and container storage requirements • Proper container labeling • Emergency response information and spill notification 			
D. Have the personnel that need the training as required by 40 CFR Part 262.34, referenced in the Waste Management Section of the Contractor EH&S Resource Manual been trained?			
E. Are records of said training available upon request?			
2. Pollution Prevention/Best Management Practices Program	Yes	No	N/A
A. Do you have a written program to ensure compliance with Best Management Practices associated with the Virginia Pollutant Discharge Elimination System (VPDES) permit issued to Newport News Shipbuilding by the Virginia Department of Environmental Quality?			
B. Does your written program contain the following elements? <ul style="list-style-type: none"> • Initial employee awareness training on the NNS BMPs that 1) are referenced in the Contractor EH&S Resource Manual (Part III, C.7, 8 & 9) and 2) are applicable to our scope of work. • Annual employee refresher awareness training on NNS BMPs that are 1) referenced in the Contractor EH&S Resource Manual (Part III, C.7, 8 & 9) and 2) are applicable to our scope of work. 			
3. Transfers of Petroleum Products or Other Liquid Hazardous Material Transfer Operations	Yes	No	N/A
A. Our operations will include the transfer of petroleum products (e.g., oils, lubricants, fuels, oily water) or other liquid hazardous materials either 1) from a vessel/platform to the shore 2) from a vessel to another vessel or barge or 3) in close proximity to the river's edge (e.g., on a pier or outfitting berth).			
B. We have a written transfer program to ensure compliance with 33 CFR Part 126, 154, 155 & 156 as applicable.			
C. Our written program contains the following elements: <ul style="list-style-type: none"> • Operations Manual • Applicable Response Plans • Appropriate Training 			
D. Our company does not have a formally written program covering the transfer of petroleum products or other liquid hazardous materials. Instead, we have developed a written program which includes the following elements: <ul style="list-style-type: none"> • Initial employee training on the requirements referenced in the Contractor EH&S Resource 			

Contractor Environmental, Health and Safety Evaluation Form

Manual, (Part III, D) concerning transfer of petroleum products or other liquid hazardous materials.			
<ul style="list-style-type: none"> • Annual employee refresher training on the requirements referenced in the Contractor EH&S Resource Manual, (Part III, D) concerning transfer of petroleum products or other liquid hazardous materials. 			
4. Department of Transportation	Yes	No	N/A
A. Does your operations include shipping of hazardous materials from NNS? If yes, answer the following:			
<ul style="list-style-type: none"> • Do you have a DOT Hazmat Security Plan in place meeting the requirements of 49 CFR Part 172.800. 			
B. Have you submitted your DOT Hazmat Security Plan for evaluation and approval?			
5. Air Program - Painting of Ships and Ship Parts	Yes	No	N/A
A. Does your operations include painting of ships or ship parts? (Section F.3)			
B. Do you have a written program in place to ensure that requirements listed in Section 2 of the Environmental Controls Manual and the Paint Tracking Requirements section of the Contractor EH&S Resource Manual?			
C. Your written program needs to addresses all the following items:			
<ul style="list-style-type: none"> • All paint to be used complies with the VOC content limits set in 40 CFR 63 Subpart II. • No paints will be thinned unless a Thinning Waiver Request is submitted to and approved by our Contract Coordinator. • If we supply the paint, a copy of the manufacturer provided VOC Batch Certification will be forwarded to our Contract Coordinator prior to application of the paint. • All material transfer operations will be handled in a way that minimizes spills. • All containers of paint and solvent will be maintained in good condition, without damage that could allow liquid or vapor leaks. • All containers of paint and solvent will be closed unless material is being added to or removed from them. • Every ounce of paint applied will be documented daily using a Paint Crew Usage Form. The Usage Form will include, at a minimum, the Paint Manufacturer, Product ID and color, Batch Number, VOC/Coating Category, VOC content, Gallons of paint used, Date applied, and type and amount of thinner used if applicable. 			
Section F.4 – Painting of Non-shipbuilding, structures, etc.			
A. Does your operations include painting of buildings, structures, etc. that are not considered ships or ship parts?			
B. Do you have a written program in place that contains the following elements?			
<ul style="list-style-type: none"> • All paint and solvent used will be documented monthly, at a minimum, and submitted to our Contract Coordinator. Usage records will include the paint manufacturer, product ID, VOC content, gallons used, and location of use. • All material transfer operations will be handled in a way that minimizes spills. • All containers of paint and solvent will be maintained in good condition, without damage that could allow liquid or vapor leaks. • All containers of paint and solvent will be closed unless material is being added to or removed from them. 			
Section F.5 – Abrasive Blasting			
A. Does your operations include abrasive blasting?			
B. Do you have a written program in place to ensure that particulate matter does not become airborne?			
C. Your written program needs to contain the following elements:			
<ul style="list-style-type: none"> • Adequate containment tarps will be used to minimize particulate matter from becoming airborne during blasting operations. • Abrasive blast material transfer operations will be operated in a manner to prevent particulate matter from becoming airborne with the use of fabric filtration systems, when needed. • All containers of new and spent blast media will be covered to prevent particulate matter from becoming airborne, if needed due to wind speed conditions. 			

Contractor Environmental, Health and Safety Evaluation Form

Release to Include Your Company in an Approved Contractor List

Newport News Shipbuilding would like to list your company as approved to work at our Shipyard based on our review of your environmental, health and safety programs. This list will be made available to general contractors and others bidding on work at the shipyard. Your company's listing will include company name, type of work (based on your NAICS), and location. You are not required to be listed in order to work at the Shipyard. Please indicate your approval to be included on the list by checking the appropriate box below.

- Yes, please list us on a public list of approved contractors.
- No, do not list us on a public list of approved contractors.

Release to Disclose Approval Status to General Contractors

(This section applies only to contractors currently in the initial review process.)

Please indicate your willingness to allow us to share information regarding our review of your environmental, health and safety programs with appropriate general contractors in the Shipyard. This is to allow general contractors who may be interested in your ability to work at our Shipyard to mentor you during the review process. We will not share any written materials that you have provided to us. We will share, with your approval, the status of your review and general information regarding your progress in the review process. Please indicate your willingness to allow us to share this information by checking the appropriate block below.

- Yes, Newport News Shipbuilding is authorized to share information regarding our EH&S review process with appropriate general contractors.

This authorization expires on _____ (optional date – no expiration if left blank).

- No, Newport News Shipbuilding is not authorized to share information regarding our EH&S review progress with any other company.

As an officer of this company, I have evaluated the information provided on this form, and hereby certify that it is accurate and complete. Furthermore, I realize that:

- This information is required by Newport News Shipbuilding for the purpose of appraisal of (potential) contractor's environmental, health and safety programs.
- This brief evaluation of contractor environmental, health and safety information is not exhaustive. Newport News Shipbuilding will not be responsible if a contractor's performance or programs are later found to be deficient, whether by OSHA, EPA, DEQ, Newport News Shipbuilding, or through accident or illness.

Signed _____

Printed _____

Title _____

Date _____

Phone _____

Email _____

C. NNS ENVIRONMENTAL PERMITS

Permit Agency	Permit Type	Contact
Virginia Department of Environmental Quality (DEQ)	Hazardous Waste Management Permit	Erin Magee
Virginia Department of Environmental Quality (DEQ)	Virginia Pollutant Discharge Elimination System (VPDES)	Mark Hiltke
Hampton Roads Sanitation District (HRSD)	Industrial Waste Water Discharge Main Yard, OWTF, & CWTP	Kyle Madden
Hampton Roads Sanitation District (HRSD)	Industrial Waste Water Discharge North Yard	Kyle Madden
U.S. Coast Guard	Oil Spill Response Plan for Vessels of NGNN and Dry Dock Company	Mark Hiltke
U.S. Coast Guard and U.S. Environmental Protection Agency (EPA)	Integrated Contingency Plan (ICP)	Mark Hiltke
Virginia Department of Environmental Quality (DEQ)	Air Emissions Bayco Burn Out Oven	Bill Cash-Robertson
Virginia Department of Environmental Quality (DEQ)	Air Emissions Aluminum Flame Spray	Bill Cash-Robertson
Virginia Department of Environmental Quality (DEQ)	Air Emissions Floating Test Steam Facility (Nancy Lee)	Bill Cash-Robertson
Virginia Department of Environmental Quality (DEQ)	Air Emissions (Lead Shielding Panel Shop)	Bill Cash-Robertson
Virginia Department of Environmental Quality (DEQ)	Air Emissions Foundry (Argon/Oxygen Degassing Furnace)	Bill Cash-Robertson
Virginia Department of Environmental Quality (DEQ)	Air Emissions (Arc Gouging Operation)	Bill Cash-Robertson
U.S. Environmental Protection Agency (EPA)	Oil Pollution Prevention Plan for NGNN and Dry Dock Company	Mark Hiltke
U.S. Coast Guard	Manual for the Transfer of Oils and Oily Wastes	Kyle Madden
Virginia Department of Environmental Quality (DEQ)	Facility Title V Air Emissions Permit	Bill Cash-Robertson
Virginia Department of Environmental Quality (DEQ)	Air Emissions Satellite Blast and Coat Facility	Bill Cash-Robertson
Virginia Marine Resources Commission	Maintenance Dredging Permit - Piers and Docks	Mark Hiltke

D. CONTRACTOR HEALTH AND SAFETY ASSISTANCE

HEALTH AND SAFETY PROGRAM ASSISTANCE

1. Seek the advice and assistance of your worker's compensation insurer.
2. Seek the services of a health and safety consultant.
3. Seek help from OSHA compliance assistance.

Newport News Shipbuilding cannot guarantee the quality of the work of any of these organizations. Even with OSHA consultant services, the employer remains liable for the accuracy and completeness of his health and safety programs.

HEALTH AND SAFETY PROGRAM CONSULTANTS

Lee Atkinson
Safety Solutions, Inc.
623 Corapeake Drive
Chesapeake, VA 23322
(757) 546-0464

Circle Safety & Health Consultants, LLC
3212 Cutshaw Avenue #318
Richmond, VA 23230
804-355-7255

Thomas L. Beacham
Marine Chemist & Environmental Consultants
6205 Amherst Circle
Virginia Beach, VA 23464
(757) 288-5340

DynCorp Information & Eng Tech
303 Butler Farm Rd, Suite 105 A
Hampton, VA 23666-1568
(757) 865-0223

Klein & Associates
719 Broad Bay Cove
Newport News, VA 23602
(757) 877-4771

Marine Chemist Services, Inc.
11850 Tugboat Lane
Newport News, VA 23606
(757) 873-0933

OSHEALTH, Inc.
111 Kenmar Drive
Yorktown, VA 23692-2824
(757) 898-9413

Safety Management Inc.
5129 Stanart Street
Norfolk, VA 23502-3491
(757) 461-1430

Kenneth T. White, CIH, CSP
4428 Ironwood Drive
Virginia Beach, VA 23462-5733
(757) 499-4420

John O'Grady
Occupations Safety & Health Services, Inc.
1501 Barn Swallow Court
Chesapeake, VA 23321
(757) 574-7516

DeWitt Davis IV, CIH/CSP
Certified Industrial Hygienist
644 Meadows Drive
Virginia Beach, VA 23462
(757) 495-3524

Garland Hanson
Atlantic Safety LLC
1006 Kingham Drive
Midlothian, VA 23114
(804) 814-5707

COSHA, Inc.
5935 Hopkins Rd.
Richmond, VA 23234
(804) 743-7613
AND
456 Charles H Dimmick Pkwy #9
Colonial Heights, VA 23834
(804) 526-7423

HEALTH AND SAFETY TRAINING

Coastal Training Technologies
500 Studio Drive
Virginia Beach, VA 23452
(757) 498-9014

ELB & Associates, Inc.
605 Eastowne Drive
Chapel Hill, NC 27514
(800) 334-5478 (press #2)
(919) 493-2612

OCCUPATIONAL MEDICINE & HEARING CONSERVATION

Nowcare Health and Safety
6632 Indian River Road #103
Virginia Beach, VA 23464
(757) 424-4442

I & O Medical Center
593 Aberdeen Road
Hampton, VA 23661
(757) 825-1100

Now Care Medical Center
4323 Indian River Road.
Virginia Beach, VA 23456
(757) 424-4300

I & O Medical Center
1290 Diamond Springs Rd.
Virginia Beach, VA 23455
(757) 460-0700

Now Care
7924 Chesapeake Blvd.
Norfolk, VA 23518
(757) 480-0889

Taylor Made Diagnostics
2600 Washington Avenue
Newport News, VA 23607
(757) 223-7934

Now Care Medical Center
3241 Western Branch Blvd., Suite A
Chesapeake, VA 23321
(757) 483-4143

Scientific Testing Laboratories, Inc.
450 Southlake Blvd. #400
Richmond, VA 23236
(804) 378-9130

Henderson & Associates
P.O. Box 2443
Elizabeth City, NC 27906
(252) 331-1494

T K Group Inc.
1812 S. Woodhouse Rd.
Virginia Beach, VA 23454
(757) 481-1266

HEALTH AND SAFETY SUPPLIES

Major Safety Service
4500 Patent Road
Norfolk, VA 23502-5605
(800)582-8129

OBBCO Safety & Supply, Inc.
1737 South Park Court
Chesapeake, VA 23320
(800) 420-4000

Arcet Equipment Co.
3 Lockwood Drive
Hampton, VA 23661-1440
(757) 728-9353

Excalibur Safety Supply
492 St. Albans Way
Richmond, VA 23229-7284
(804) 673-3227

HEALTH AND SAFETY EQUIPMENT RENTAL

CIH Equipment Co.
107 Dunbar Ave. #G
Oldsmar, FL 34677
(813) 891-6830

Safeware
(800) 929-3346

HEALTH AND SAFETY ON THE INTERNET

<http://www.osha.gov>
<http://www.cdc.gov/niosh>
<http://hazard.com>
<http://www.ergoweb.com>

<http://www.safetyinfo.com>
http://www.sciencedaily.com/news/health_medicine/
<http://www.safetylink.com>
<http://osherc.sph.unc.edu/>
<http://www.kelleronline.com>

E. CERTIFICATE OF COMPLIANCE – TO BE POSTED ON EACH CRANE.

NN 9035

CERTIFICATE OF COMPLIANCE

for Contractor Cranes Used at Newport News Shipbuilding (NNS)

MUST BE CONSPICUOUSLY POSTED ON CRANE WHILE ON NEWPORT NEWS PROPERTY

This certificate must be signed by a company officer of the contractor whose company provides cranes for any lifting and handling work at Newport News Shipbuilding, a division of Huntington Ingalls Industries. By his/her signature, the contractor certifies that the crane and crane operators provided by his/her company for work at Newport News comply with the following minimum requirements:

- Crane meets all applicable OSHA requirements.
- A written ODCL will be completed and signed at the beginning of each shift prior to starting work.
- Equipment operators and crews meet all regulatory agency requirements.
- All equipment and personnel certifications will remain valid while operating at Newport News.
- All cranes shall be equipped with an anti-two-blocking device that, when activated, disables all crane functions whose movement can cause two-blocking.
- No safety device will be by-passed during lifting and handling operations at Newport News.
- Rigging gear meets all regulatory agency requirements and will be checked at the start of each shift and prior to use.
- Any lifting and handling related accident or incident involving contractor cranes or operators will be reported in accordance with Newport News Procedure Y-1046 (Call the service desk at 688-9888).

By his/her signature, the contractor also agrees to hold harmless, defend, and indemnify Newport News Shipbuilding, a division of Huntington Ingalls Industries and its affiliates, and their officers, directors, employees, and agents, from any and all claims, suits, and damages arising out of, or incident to, contractor's use or operation of any vehicle, crane, or equipment on Newport News premises, except for claims resulting from the sole negligence of Newport News Shipbuilding or its employees.

Contractor Company Name and Phone Number:		Crane Manufacturer/Type/Capacity:
Contractor Crane Number (Asset, License Number, Etc.)		Crane Operator's Name(s):
Certifying Officer Name/Title:		NNS Purchase Order/Release Number(s):
Certifying Officer Signature:	Date:	NNS Responsible Party Name, Dept., and Phone Number:

F. Contractor MSDS Cover Sheet

Contractor (Company Name): _____ Date: _____

Newport News Shipbuilding Coordinator: _____ Phone: _____

Product Name ¹	Manufacturer	P.O. Number	Quantity		Check one ²		
			Quantity ³	u/m	I ⁴	R ⁵	U ⁶

Send completed form to your Newport News Shipbuilding Contractor Coordinator

¹ Name on MSDS and product label must match.
² MSDS not required for Revised or Updated quantities as long as one was submitted within one year.
³ Quantity in volume or weight; no drums, cans, feet, pieces, etc.
⁴ Initial submission of MSDS.
⁵ Revision of a quantity previously reported. Provide new total quantity used.
⁶ Updated MSDS or additional quantity reported.

G. Facilities Excavation Permit

FACILITIES EXCAVATION PERMIT

Order:

Location:			
Type of excavation: (check all that apply)			
<input type="checkbox"/> Hand Tools		<input type="checkbox"/> Jackhammer	
<input type="checkbox"/> Backhoe		<input type="checkbox"/> Hoe Ram	
<input type="checkbox"/> Excavator		<input type="checkbox"/> Driving	
<input type="checkbox"/> Auger		<input type="checkbox"/> Other	
<input type="checkbox"/> Saw Cutting		<input type="checkbox"/>	
Utility Survey:			
<input type="checkbox"/> Electrical	By: _____	Date: _____	
<input type="checkbox"/> Telephone	By: _____	Date: _____	
<input type="checkbox"/> Roads and Tracks	By: _____	Date: _____	
<input type="checkbox"/> Piping	By: _____	Date: _____	
<input type="checkbox"/> Radiological Dept. Notified	By: _____	Date: _____	
<input type="checkbox"/> Environmental Health & Safety Dept. Notified	By: _____	Date: _____	
Special Precautions:			
Concurrence:			
<input type="checkbox"/> General Contractor	By: _____	Date: _____	
<input type="checkbox"/> Sub-Contractor	By: _____	Date: _____	
<input type="checkbox"/> Const. Engineer/Gen. F.	By: _____	Date: _____	
<p>Even with this survey, it is understood that care should be taken during all excavation due to possibility of unidentified utilities, foundations, insulated structures, etc. that may be unidentifiable. If any unidentified utilities, insulation or other unexpected materials are encountered, contact the Construction Engineer, Field Planner or the service desk prior to further excavation.</p>			
Worker Acceptance:			
<p>All personnel performing work shall read this form, initial and print their name, department and date below after receiving a pre-job briefing from the supervisor if they concur that the hazard mitigation's are understood and will be complied with during the job.</p>			
NAME	INITIAL	DEPT.	DATE

F-041-16 Revision 5

H. NNS WASTE MATERIAL AND HAZARD WARNING LABELS

WASTE						NN 4651 (Rev. 4) 3321896
TYPE OF WASTE: _____						
SOURCE: GENERATING DEPT. _____						
SUPERVISOR/PHONE _____						
FROM BLDG.#, HULL#, JOB#, ETC. _____						

SHIP TO: STOP # _____		BLDG. # _____				
DATE: _____						
HAZARD WARNING	<input type="checkbox"/> DANGER!		<input type="checkbox"/> WARNING!		<input type="checkbox"/> CAUTION!	
	<input type="checkbox"/> FLAMMABLE	<input type="checkbox"/> COMBUSTIBLE	<input type="checkbox"/> FLASH POINT: _____	<input type="checkbox"/> OXIDIZER	<input type="checkbox"/> CORROSIVE	<input type="checkbox"/> POISON
	<input type="checkbox"/> MAY BE FATAL IF: <input type="checkbox"/> ABSORBED THROUGH THE SKIN <input type="checkbox"/> INHALED <input type="checkbox"/> SWALLOWED	<input type="checkbox"/> MAY BE HARMFUL IF: <input type="checkbox"/> ABSORBED THROUGH THE SKIN <input type="checkbox"/> INHALED <input type="checkbox"/> SWALLOWED	<input type="checkbox"/> MAY CAUSE IRRITATION OF: <input type="checkbox"/> RESPIRATORY TRACT <input type="checkbox"/> EYES <input type="checkbox"/> SKIN	<input type="checkbox"/> MAY CAUSE BURNS TO: <input type="checkbox"/> EYES <input type="checkbox"/> SKIN	<input type="checkbox"/> MAY CAUSE ALLERGIC REACTION OF: <input type="checkbox"/> RESPIRATORY TRACT <input type="checkbox"/> SKIN	<input type="checkbox"/> CANCER HAZARD <input type="checkbox"/> KNOWN <input type="checkbox"/> SUSPECT
	<input type="checkbox"/> MAY CAUSE DAMAGE TO: _____					
	<input type="checkbox"/> OTHER: _____					
<input type="checkbox"/> Caution - Contains Lead - Poison - Avoid Generating Dust - Nervous System, Blood System, Reproductive Systems, Kidney and Liver Hazard			<input type="checkbox"/> Danger - Contains Cadmium - Avoid Generating Dust - Cancer Hazard - Can cause lung and kidney disease			

Form NN4651

HAZARDOUS WASTE						NN 7029 (Rev. 1) 15278621
TYPE OF WASTE: _____						
SOURCE: GENERATING DEPT. _____						
MW Notification Number	SUPERVISOR/PHONE _____					
	FROM BLDG.#, HULL#, JOB#, ETC. _____					
SHIP TO: STOP # _____ BLDG. # _____						
DATE: _____						
HAZARD WARNING	<input type="checkbox"/> DANGER!		<input type="checkbox"/> WARNING!		<input type="checkbox"/> CAUTION!	
	<input type="checkbox"/> FLAMMABLE	<input type="checkbox"/> COMBUSTIBLE	<input type="checkbox"/> FLASH POINT: _____	<input type="checkbox"/> OXIDIZER	<input type="checkbox"/> CORROSIVE	<input type="checkbox"/> POISON
	<input type="checkbox"/> MAY BE FATAL IF:	<input type="checkbox"/> MAY BE HARMFUL IF:	<input type="checkbox"/> MAY CAUSE IRRITATION OF:	<input type="checkbox"/> MAY CAUSE BURNS TO:	<input type="checkbox"/> MAY CAUSE ALLERGIC REACTION OF:	<input type="checkbox"/> CANCER HAZARD
	<input type="checkbox"/> ABSORBED THROUGH THE SKIN	<input type="checkbox"/> ABSORBED THROUGH THE SKIN	<input type="checkbox"/> RESPIRATORY TRACT	<input type="checkbox"/> EYES	<input type="checkbox"/> RESPIRATORY TRACT	<input type="checkbox"/> KNOWN
	<input type="checkbox"/> INHALED	<input type="checkbox"/> INHALED	<input type="checkbox"/> EYES	<input type="checkbox"/> SKIN	<input type="checkbox"/> SKIN	<input type="checkbox"/> SUSPECT
KNOW AND FOLLOW ALL PRECAUTIONARY MEASURES	<input type="checkbox"/> MAY CAUSE DAMAGE TO: _____					
	<input type="checkbox"/> OTHER: _____					
<input type="checkbox"/> Caution - Contains Lead - Poison - Avoid Generating Dust - Nervous System, Blood System, Reproductive Systems, Kidney and Liver Hazard			<input type="checkbox"/> Danger - Contains Cadmium - Avoid Generating Dust - Cancer Hazard - Can cause lung and kidney disease			

(Green with black lettering)

Hazardous Waste Label
 NN Form 7029
 NN Part No. 15278621
 (Page Size Reduced)

HAZARD WARNING
NN4694 (Rev. 4)
3321470

PRODUCT NAME: Chromate

DANGER! **WARNING!** CAUTION!

FLAMMABLE COMBUSTIBLE FLASH POINT: _____

OXIDIZER CORROSIVE POISON

MAY BE FATAL IF ABSORBED THROUGH THE SKIN INHALED SWALLOWED

MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN INHALED SWALLOWED

MAY CAUSE IRRITATION OF RESPIRATORY TRACT EYES SKIN

MAY CAUSE BURNS TO EYES SKIN

MAY CAUSE ALLERGIC REACTION OF SKIN RESPIRATORY TRACT

CANCER HAZARD KNOWN SUSPECT

MAY CAUSE DAMAGE TO Kidney, Liver, Nasal

OTHER _____

KNOW AND FOLLOW ALL PRECAUTIONARY MEASURES

NORTHROP GRUMMAN NEWPORT NEWS
4101 WASHINGTON AVENUE
NEWPORT NEWS, VA 23607 DATE: _____

Form NN4694

NN 4693 (REV 1)

CHECK WARNINGS LISTED ON ORIGINAL LABEL

HAZARD WARNING

CONTENTS:
Solid Chromate

TRADE NAME FROM ORIGINAL LABEL

Flammable Combustible
 Use adequate Ventilation
 Harmful If: Inhaled,
Swallowed

May Cause Severe Burns
 Avoid Prolonged Or Repeated Contact
 Avoid All Contact
 May React With: _____

Irritates: Respiratory
Eyes, throat

Body Part(s) Affected: Kidney,
Nasal Tissue

Other: Carcinogen

YOU MUST READ AND HEED ALL HAZARD WARNINGS
IN CASE OF EMERGENCY CALL-- 911/0-2222

Form NN4693

UNIVERSAL WASTE BATTERIES

Nickel Cadmium (Ni-Cd) Lead Acid (Pb)

Lithium ion (Li-ion) Nickel Metal Hydride (Ni-MH)

Other: _____

ACCUMULATION START DATE 10-31-09

GENERATING DEPT. 043

CONTACT NAME JOE SHIPYARD

CONTACT PHONE NUMBER 0-0000

FROM BLDG #, HULL #, JOB # 103

HAZARD WARNING

Caution-Contains Lead – Poison – Avoid generating dust. Affects Nervous system, Blood system, Reproductive system, Kidney and Liver hazard.

Danger-Contains Cadmium – Avoid generating dust. Cancer hazard. Can cause lung and kidney disease.

(Yellow with black lettering)

Universal Waste Label
NN Form 7068
NN Part No. 16575958
(Page Size Reduced)

UNIVERSAL WASTE LIGHT BULBS

ACCUMULATION START DATE 10-31-09

GENERATING DEPT. 043

CONTACT NAME JOE SHIPYARD

CONTACT PHONE NUMBER 0-0000

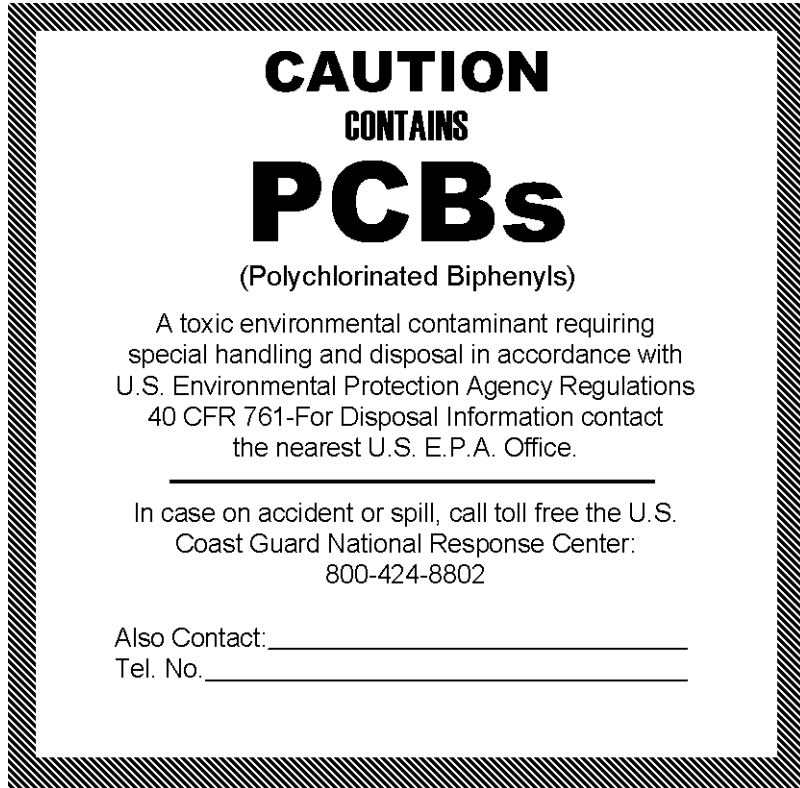
FROM BLDG #, HULL #, JOB # 103

HAZARD WARNING:
CONTAINS
MERCURY
VAPOR AND/OR
RESIDUE

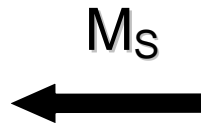
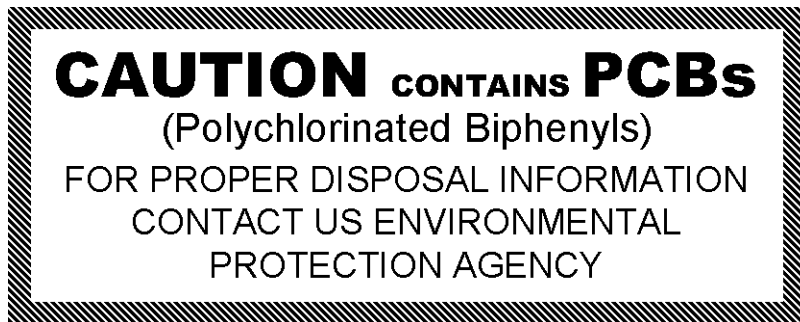
ALL WASTE LIGHT BULBS MUST BE
BOXED AND LABELED.
PERSONNEL MUST BE TRAINED BEFORE
HANDLING UNIVERSAL WASTE BULBS.
CONTACT 027 @ 8-5523 FOR QUESTIONS

(Yellow with black lettering)

Universal Waste Label
NN Form 7067
NN Part No. 16575967
(Page Size Reduced)



When labeling radioactive PCBs, the M_L or “Large” marking must be used.



I. CONTAINMENT INSPECTION FORM

NN 9256 (REV 0)

CONTAINMENT INSPECTION Daily Record of Operations													
Date	Time of Day	Hull Number	Method of Control			Wind Speed	Wind Direction	Method of Application				Additional Control Measures	
			Shrouds	Barriers				Graving Dock	Floating Dry Dock	Pier	Fixed or Floating Platforms		Platen

Approved	
Sub Contractor Administration	Trade Supervisor

**J. PRODUCTS NOT ACCEPTABLE FOR
UNRESTRICTED DISCHARGE
CROSS REFERENCE**

Product	Manufacturer	Reason
Afta Spot Remover	Guardsman Products	Toluene, xylene, Ethlybenzene
	SBU of Lilly	
Afta Professional Strength Cleaner/Degreaser Adhesive Remover	Guardsman Products	
	SBU of Lilly	
Aircraft Surface Cleaner	Speer Products, Inc.	Organic solvents
Aircraft Surface Cleaning Compound (MIL-C-85570B)	Octagon Process, Inc.	
Aircraft Surface Cleaning Compound (PENAIR M-5571)	Penetone Corp., Subs. of West ChemicalProducts	
Aircraft Surface Cleaning Compound (AI-1080-93-2)	Space Chemical, Inc.	
Aircraft Surface Cleaning Compound (CEE-BEE Cleaner R-681)	McGean-Rohco, Inc.	
	CEE BEE Chemical	
Avionic Components Cleaning Compound	Omnitech International	
Avionic Components Cleaning Compound (MIL-C-81964)	Aspengold Corporation	
Big Red Chemical Cleaner	Texas Refinery Co.	
C-1147	Slocum Adhesives Corp.	Toluene, xylene, ethyl benzene
Complete for Floors	S.C. Johnson Wax	Zinc
ED-394	Eldorado Chemical Co.	Organic solvents
Fanfare Floor Finish	Jani-Serv	Zinc

Product	Manufacturer	Reason
Firststage Floor Sealer		
Flow Away 161	Omega Chemical Co.	Organic solvents
Formula Bol-4 Toilet Bowl Descaler	Chemical Service of Philadelphia, Inc.	Low pH
High NaOH Urethane Floor Finish	Butcher Company	Zinc
Kodak Development Systems Cleaner	Kodak	Chromium
Logesol Development Systems Cleaner	Helion Industries	
Magnusol 747	Magnus Division, Economics Lab	Organic solvents
Plaza	S.C. Johnson Wax	Zinc
Snapback UHS Restorer		
Sprint		
Startime Floor Finish	Jani-Serv	
Sure Solv	Hill Manufacturing Co.	Petroleum solvents
Technique Base Coat	S.C. Johnson Wax	Zinc
Vectra		
Crew Toilet Bowl Cleaner		
Visco Cherry Bowl Cleaner	Visco	Low pH

FORMS USED IN THE PAINTING NESHAP COMPLIANCE ASSURANCE PROGRAM

**Form 2 NEWPORT NEWS SHIPBUILDING
NESHAP COATING RECEIPT FORM**

ID	Item	Description	Data
A.	Coating	Name/Identification:	
B.	Manufacturer	Name:	
C.	Batch ID	Number:	
D.	Date	Received at NNS:	
E.	VOC Content	Concentration, (g/l):	
F.	Person filling out form:	Name:	
	Contractor/Dept.:	Name:	
G.	Coating Category (check one below)	Code Description	VOC Limit, grams/liter coating
	General	<input type="checkbox"/> G1 General use	340
	Specialty	<input type="checkbox"/> S1 Air flask	340
		<input type="checkbox"/> S2 Antenna	530
		<input type="checkbox"/> S3 Antifoulant	400
		<input type="checkbox"/> S4 Heat resistant	420
		<input type="checkbox"/> S5 High-gloss	420
		<input type="checkbox"/> S6 High-temperature	500
		<input type="checkbox"/> S7 Inorganic zinc high-build	340
		<input type="checkbox"/> S8 Military exterior	340
		<input type="checkbox"/> S9 Mist	610
		<input type="checkbox"/> S10 Navigational aids	550
		<input type="checkbox"/> S11 Nonskid	340
		<input type="checkbox"/> S12 Nuclear	420
		<input type="checkbox"/> S13 Organic zinc	360
		<input type="checkbox"/> S14 Pretreatment wash primer	780
		<input type="checkbox"/> S15 Repair/ maintenance of thermoplastics	550
		<input type="checkbox"/> S16 Rubber camouflage	340
		<input type="checkbox"/> S17 Sealant for thermal spray aluminum	610
		<input type="checkbox"/> S18 Special marking	490
		<input type="checkbox"/> S19 Specialty interior	340
		<input type="checkbox"/> S20 Tack coat	610
		<input type="checkbox"/> S21 Undersea weapons systems	340
<input type="checkbox"/> S22 Weld-through precon. primer	650		

Form shall be forwarded, along with VOC Certification from Manufacturer, to EE, O27 in B79-1.

Form 3

NN 9223 (See Forms Viewer for current revision)

NNS WAIVER REQUEST FOR THINNING COATINGS

SECTION 1, Waiver Request (To be completed by Contractor requesting waiver)	
Company Name: _____	Contract Coordinator: _____
Phone# _____	Fax# _____
Date: _____	Hull/Location: _____
<u>Coating to be Thinned:</u>	
Manufacturer: _____	Paint ID: _____
Batch# _____	NNPN: _____
Coating Category: _____	VOC Content (g/L or Lb/Gal): _____
<u>Thinner to be Used:</u>	
Manufacturer: _____	Product ID: _____
Batch: _____	Product Density (Lb/Gal): _____
Thinning required for cold weather (less than 40 Deg. F) Application? (Y / N)	

SECTION 2, Waiver Approval (To be completed by Contract Coordinator or O27)	
Maximum Allowable Amount of Thinner (ounces) per Gallon of Coating: _____	
Approver's Name: _____	Approver's Signature: _____

SECTION 3, Thinning Record (To be completed by Contractor)	
Amt. of Coating Applied (Gal): _____	Amt. of Thinner Added (oz.): _____
Supervisor's Name: _____	Supervisor's Signature: _____
Note: Only report the amount of thinner used to thin paint prior to application. Do not report solvents used to clean equipment and surfaces.	

Attach completed form to Paint Usage Form and submit to Contract Coordinator.

MONTH OF _____

(1) Inspection Date	(2) By	(3) Equipment ID/No.	(4) Reference Drawing	(5) Cracks (Y/N)	(6) Holes (Y/N)	(7) Other (Y/N)	(8) Closed (Y/N)

FORM 4

NN 9221 (See Forms Viewer for current revision)

**NEWPORT NEWS SHIPBUILDING
PAINT USAGE FORM**

Company Name: _____ **Actual Applicator:** _____

Contract Coordinator: _____ **Hull#/Location:** _____

Print Name: _____ **Signature:** _____ **Date:** _____

Applicator must fill in this table completely. Mark "N/A" if not applicable.

Activity	Item	Description	Value
Coating (Complete before work)	1	Manufacturer Name	
	2	Product ID and color	
	3	Batch Number(s): Part A:	
	4	If used, Part B:	
	5	If used, Part C:	
	6	Coating Volume Issued (Gal)*	
Thinner Addition (ONLY if approved)	7	Manufacturer Name	
	8	Product ID	
	9	Amount of Thinner Added (Gal)*	
Mixing	10	Total Volume Mixed (Gal)*	
Coating Application	11	Actual Temperature (Deg. F)	
	12	Total Coating Volume Applied (Gal)*	

*For small coating volumes, use the following conversions:

- 1 oz = 0.008 gal
- 2 oz = 0.016 gal
- 4 oz = 0.031 gal
- 8 oz = (1 cup) = 0.06 gal
- 16 oz (1 pint) = 0.125 gal
- 32 oz (1 quart) = 0.25 gal
- 64 oz (2 quarts) = 0.5 gal

NOTE: Completed form must be turned in to the Foreman or Contract Coordinator on a daily basis.

**FORM 6
PAINT/SOLVENT CONTAINER INTEGRITY INSPECTION FORM**

MONTH: _____ YEAR: _____

GENERAL INFORMATION			
DATE:			
TIME:			
CONTRACT OR SHIP:			
LOCATION AT NNS:			
COMPANY NAME OR DEPT:			
PERSON INSPECTING:			
CONTRACT COORDINATOR /FOREMAN:			
INSPECTION RESULTS:			YES/NO
1) Are all containers, tanks, vats, drums, and piping systems housing VOC-containing material free of cracks, holes, and other defects?			
2) Are all containers, tanks, vats, drums, and piping systems housing VOC-containing materials closed at all times, unless material is being added to or removed from them?			
3) Is the handling and transfer of VOC-containing materials to and from containers, tanks, vats, drums, and piping systems is conducted in a manner that minimizes spills.			
If you answered NO to any of the questions above, fill in the section below:			
#	DESCRIPTION OF PROBLEM	CORRECTIVE ACTION TAKEN	DATE
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			

NOTE: Contractor/DEPT. shall submit form to Contract Coordinator/Foreman by the 3rd working day of the month following the month during which the inspection was conducted. Contract Coordinators/Foremen shall submit forms to EE (B79-1) by the 5th working of the month following the month during which the inspection was conducted.

M. VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR MARINE COATINGS
(NESHAP PAINT CATEGORIES)

Code	Coating Category	Category Description	VOC Limit in Coating	
			G/L	Lb/Gal
G1	GENERAL USE	Any coating that is not a specialty coating listed below.	340	2.83
	SPECIALTY COATINGS	Any coating that is manufactured and used for one of the specialized applications described below		
S1	Air flask paint	Any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corrosion resistance	340	2.83
S2	Antenna paint	Any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.	530	4.42
S3	Antifoulant paint	Any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the FIFR Act.	400	3.33
S4	Heat Resistant Paint	Any coating that during normal use must withstand a temperature of at least 400 deg F.	420	3.5
S5	High-gloss paint	Any coating that achieves at least 85 percent reflectance on a 60 degree meter when tested by ASTM Method D523.	420	3.5
S6	High-temperature paint	Any coating that during normal use must withstand a temperature of at least 800F.	500	4.17
S7	Inorganic zinc (high-build) primer	A coating that contains 960 grams per liter (8 pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance.	340	2.83
S8	Military exterior	Paint or Chemical Agent Resistant Coatings ("CARCII): any exterior topcoat applied to military or U.S. Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.	340	2.83

S9	Mist coat	Any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the paint film prior to curing.	610	5.08
S10	Navigational aids paint	Any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are recoated aboard ship at their usage site and immediately returned to the water.	550	4.58
S11	Nonskid paint	Any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.	340	2.83
S12	Nuclear paint	Any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials	420	3.5
S13	Organic zinc paint	Any coating derived from zinc dust incorporated into an organic binder that contains more than 960 grams of elemental zinc per liter (8 pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.	360	3.0
S14	Pretreatment Wash primer	Any coating that contains a minimum of 0.5 percent acid, by mass, and is applied only to bare metal to etch the surface and enhance adhesion of subsequent coatings.	780	6.5
S15	Thermoplastic repair and maint. paint:	Any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered "general use" coatings.)	550	4.58
S16	Rubber camouflage paint	Any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes.	340	2.83

S17	Sealant for thermal spray aluminum	Any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of 1 dry mil.	610	5.08
S18	Special marking paint:	Any coating that is used for safety or identification applications, such as markings on flight decks and ships, numbers.	490	4.08
S19	Specialty interior paint	Any coating used on interior surfaces aboard U.S. military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.	340	2.83
S20	Tack coat	Any thin film epoxy coating applied at a maximum thickness of 2 dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.	610	5.08
S21	Undersea weapons systems paint	Any coating applied to any component of a weapons system intended to be launched or fired from under the sea.	340	2.83
S22	Weld-through (shop) primer	A coating that provides corrosion protection for steel during inventory, is typically applied at less than 1 mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1¼ centimeters [½ inch]), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings.	650	5.42