DEPARTMENT OF THE NAVY
DIRECTOR STRATEGIC SYSTEMS PROGRAMS
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WASHINGTON NAVY YARD, DC 20374-5127

IN REPLY REFER TO
5100
SP273
Ser U031813011
19 MAR 2013

From: Director, Strategic Systems Programs
To: Commanding Officer, Strategic Weapons Facility Atlantic
Commanding Officer, Strategic Weapons Facility Pacific
Commanding Officer, Naval Ordnance Test Unit
Director, Program Management Office Strategic Systems Programs, Flight
Officer-in-Charge, Program Management Office Detachment Magna, UT

Subj: IMPLEMENTATION OF CONFINED SPACE ENTRY PROGRAM FOR MISSILE OPERATIONS ASHORE AND AFLOAT

Ref: (a) OPNAVINST 5100.23G Ch-1
(b) S6470-AA-SAF-010
(c) SWFPAC M-SPM
(d) SWFLANTINST 5100.4H
(e) NAVORDTESTUINST 5100.1G
(f) S9086-CH-STM-030 (NSTM 074)
(g) Washington State Shipyard Regulations, Chapter 296-304 WAC
(h) Occupational Safety and Health Act, 29 CFR 1915
(i) Occupational Safety and Health Act, 29 CFR 1910.146

1. Purpose. The purpose of this letter is to provide background information and interim guidance/direction related to the potential hazards associated with benzene and carbon monoxide gas concentrations found in missiles, missile tubes, and loading tubes. Additionally, this letter will direct the near-term implementation of mitigation steps to be undertaken when performing confined space entry (CSE) as defined in references (a) through (i) in support of missile operations ashore and afloat.

Background. During a Special Weapons Test performed in the fall of 2012 onboard SSBN 742, benzene and carbon monoxide gas concentration levels registered at levels in excess of OSHA-specified safe limits inside multiple missiles and missile tubes. Per references (a) through (i), confined spaces are defined as enclosures with limited means of entry and exit; and although they are large enough to enter, they are not designed for continuous personnel occupancy. Based on their characteristics, these spaces contain or have the potential to contain hazardous environments that may be harmful to both the short and long term health of personnel working within them. For this reason, Navy policy is to consider all confined spaces to contain the most unsafe atmosphere. Any entry into or work performed in such spaces is prohibited until qualified personnel have performed the tests and evaluations necessary to ensure safe conditions exist and are maintained. Previously, the missile itself was never recognized

as a confined space nor subjected to a formal confined space program. Since these findings were made, Lockheed-Martin's Environmental Safety and Health (ES & H) and Legal organizations have been working in concert with SSP's Safety Organization, Technical Branches, and Office of Counsel to understand the testing, monitoring, and hazard mitigation requirements associated with the potential presence of benzene and carbon monoxide in missiles. In light of the potentially hazardous environment, as well as an evolved understanding of the definitions of confined spaces per existing safety standards, SSP is reassessing the applicability of existing Navy and Department of Labor confined space entry programs to the D5 Missile, missile tube, and loading tube environments both ashore and afloat. Consequently, while SSP pursues implementation of the applicable comprehensive confined space program or programs ashore and afloat, near-term mitigation activities are necessary to ensure that Sailors, government personnel, and contractors can continue to safely enter these spaces and perform mission critical missile processing/operational tasks.

2. Action. SSP facilities to which this letter is addressed are hereby directed to implement near-term risk mitigation measures for the potential hazards identified (benzene and carbon monoxide). Such measures shall be incorporated to ensure spaces that could be considered confined spaces are subjected to testing to measure benzene, carbon monoxide and oxygen levels prior to personnel entry. Additionally, these measures shall provide means to ensure any gas concentration levels found to be outside of safe limits are mitigated through ventilation and dispersion to safe personnel exposure levels prior to personnel entry. Amplifying data to assist in the generation of these near-term mitigation procedures follows:

a. Until such time as additional equivalent equipment can be identified and subjected to safety analysis (nuclear weapons safety review and similar), only the following gas detectors are authorized for use: PHD6 Multi-Gas Analyzer (54-53-A19000000AC) for the detection and measurement of carbon monoxide and oxygen and the UltraRAE 3000 Benzene Detector (059-D300-200) for the detection and measurement of benzene. Only these two devices, by part number, are presently authorized for use within the missile, missile tube, and loading tube environments or within close proximity to the missile.

b. Until such time as additional equivalent equipment can be identified and subjected to safety analysis (nuclear weapons safety review and similar), only the following ventilation equipment is authorized for use: Air Circulator Motor Model 78042 (Missile Assembly Building fan) and VANO 175 Blower Model 1-500251-003 (portable vane axial fan and hose attachment). These two devices, by model number, are presently authorized for use within the missile, missile tube, and loading tube environments or within close proximity to the missile.

c. In the event that safe working limits are not achieved as a result of air exchange and ventilation, the use of personnel protective equipment (e.g. respirators) will be authorized to enable the continuation of operations. Facility personnel, supporting Industrial Hygienists, and other working group members shall coordinate space entry under these circumstances. Mitigation procedures developed at affected facilities should allow for this possibility.

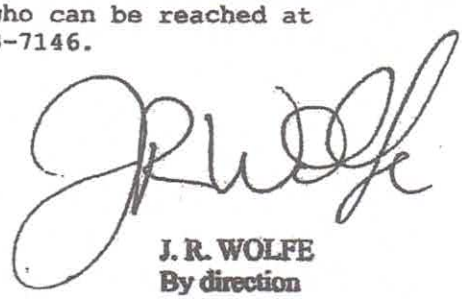
d. Strategic Weapons Facilities and NOTU, working in conjunction with supporting Industrial Hygienists, shall generate appropriate local procedures to incorporate air sampling, air exchange, and other risk mitigation measures. Considering that the effectiveness of sampling and air exchange procedures will need to be evaluated when procedures are first executed, local facilities will retain green line authority to modify the near-term hazard mitigation procedures. However, should a facility wish to introduce new sampling or air exchange equipment into the procedure, they must first coordinate with SP273 to ensure all required safety reviews have been completed and the equipment is deemed safe for use inside or near a missile.

e. Facilities are to generate procedures for the exclusive use of their military and government civilian personnel, using the applicable safe exposure levels to the potential hazards. Because contractor personnel may also require entry to the space during operations, it is necessary that contractors satisfy their own applicable safety standards. Facilities are encouraged to note in their procedures that contractor personnel may be subject to different requirements before being permitted access to the missiles, and that contractor safety departments are responsible for ensuring that their personnel comply with safe entry standards applicable to them.

3. Resolution. SSP Headquarters has convened a working group, to be led by LCDR Michael Kalinski, SP273, consisting of representatives from SSP Safety, Legal, Systems Engineering, Fleet liaisons, and affected technical branches, as well as equivalent organizations at both Strategic Weapons Facilities and the Program Management Office. Additionally, Lockheed-Martin, Northrop-Grumman, and General Dynamics contractor organizations are participating in the working group so that all efforts can be coordinated by the government with its contractor partners. The working group is tasked with identifying all missile processing operations ashore and afloat (including empty missile tube operations) that could involve spaces that fall under the definition of a confined space, as well as identifying the organization(s) performing the work, determining what safety standards are applicable to the operations, identifying what requirements exist for air testing and hazard mitigation, and determining what confined space entry program should be invoked for each unique event. As these preliminary steps are completed, the working group will coordinate

efforts to implement any requirements not being met with the relevant Navy stakeholders. Implementation activities may include, but are not limited to, performing gap analyses to ensure no confined space operating condition exists that isn't covered under a safety program to be implemented or a planned mitigation procedure; assessing the safety and effectiveness of air sampling and air exchange equipment used as part of the programs, ensuring required training and/or certification standards are incorporated and that work performers are well-versed in safety procedures related to the potential hazards, and identifying work performers and oversight for confined space entry program activities. This working group effort will focus on identifying and implementing near-term mitigation activities first, followed by the methodical and comprehensive development of final, formal confined space program activities as its ultimate deliverable.

3. My points of contact on this matter are LCDR Michael Kalinski, SP273, who can be reached at michael.kalinski@ssp.navy.mil or 202-433-5703 and Mr. Drew Ramsey, SP201245, who can be reached at andrew.ramsey@ssp.navy.mil or 202-433-7146.



J. R. WOLFE
By direction

Copy to:
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Northrop Grumman, SWFLANT, Kings Bay, GA (E. Wetherhold)
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