DEPARTMENT OF LABOR

Occupational Safety and Health Administration

[Docket No. OSHA-2012-0008]

Newport News Shipbuilding; Notice of Application for a Permanent Variance and Request for Comments

AGENCY: Occupational Safety and Health Administration (OSHA), Labor.

ACTION: Notice.

SUMMARY: In this notice, OSHA announces the application of Newport News Shipbuilding for a permanent variance from the OSHA shipyard-employment standards that prohibit shipyard employers from permitting workers to ride the hook or the load, from swinging or suspending loads over the heads of workers, and placing employees in a hazardous position between a swinging load and a fixed object while engaged in the construction and assembly of modular ship sections.

DATES: Submit comments, information, documents in response to this notice, and request for a hearing on or before [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit comments by any of the following methods:

1. Electronically: Submit comments and attachments electronically at http://www.regulations.gov, which is the Federal eRulemaking Portal. Follow the instructions online for making electronic submissions.

2. Facsimile: If submissions, including attachments, are not longer than 10 pages, commenters may fax them to the OSHA Docket Office at (202) 693-1648.

3. Regular or express mail, hand delivery, or messenger (courier) service: Submit comments, requests, and any attachments to the OSHA Docket Office, Docket No. OSHA-2012-0008, Technical Data Center, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-2625, Washington, DC 20210; telephone: (202) 693-2350 (TTY number: (877) 889-5627). Note that security procedures may result in significant delays in receiving comments and other written materials by regular mail. Contact the OSHA Docket Office for information about security procedures concerning delivery of materials by express mail, hand delivery, or messenger service. The hours of operation for the OSHA Docket Office are 8:15 a.m. - 4:45 p.m., e.t.

4. Instructions: All submissions must include the Agency name and the OSHA docket number (OSHA-2012-0008). OSHA places comments and other materials, including any personal information, in the public docket without revision, and these materials will be available online at http://www.regulations.gov. Therefore, the Agency cautions commenters about submitting statements they do not want made available to the public, or submitting comments that contain personal information (either about themselves or others) such as Social Security numbers, birth dates, and medical data.

5. Docket: To read or download submissions or other material in the docket, go to http://www.regulations.gov or the OSHA Docket Office at the address above. All documents in the docket are listed in the http://www.regulations.gov index; however, some information (e.g., copyrighted material) is not publicly available to read or download through the web site. All submissions, including copyrighted material, are

available for inspection and copying at the OSHA Docket Office. Contact the OSHA Docket Office for assistance in locating docket submissions.

6. Extension of comment period: Submit requests for an extension of the comment period on or before [INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER] to the Office of Technical Programs and Coordination Activities, Directorate of Technical Support and Emergency Management, Occupational Safety and Health Administration, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-3655, Washington, DC 20210, or by fax to (202) 693-1644.

FOR FURTHER INFORMATION CONTACT: Information regarding this notice is available from the following sources:

Press inquiries: Contact Mr. Frank Meilinger, Director, OSHA Office of Communications, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-3647, Washington, DC 20210; telephone: (202) 693-1999; email: Meilinger.francis2@dol.gov.

General and technical information: Contact Mr. Kevin Robinson, Director, Office of Technical Programs and Coordination Activities, Directorate of Technical Support and Emergency Management, Occupational Safety and Health Administration, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-3655, Washington, DC 20210; phone: (202) 693-2110 or email: robinson.kevin@dol.gov.

SUPPLEMENTARY INFORMATION:

Copies of this Federal Register notice. Electronic copies of this Federal Register notice are available at http://www.regulations.gov. This Federal Register notice, as well

as news releases and other relevant information, also are available at OSHA's webpage at http://www.osha.gov.

Hearing Requests. According to 29 CFR 1905.15, hearing requests must include: (1) a short and plain statement detailing how the proposed variance would affect the requesting party; (2) a specification of any statement or representation in the variance application that the commenter denies, and a concise summary of the evidence adduced in support of each denial; and (3) any views or arguments on any issue of fact or law presented in the variance application.

I. Notice of Application

Northrop Grumman Shipbuilding Inc., 4101 Washington Ave., Newport News, Virginia 23607, submitted on October 6, 2009, an application for a permanent multi-state variance under Section 6(d) of the Occupational Safety and Health Act of 1970 ("OSH Act"; 29 U.S.C. 655) and 29 CFR 1905.11 ("Variances and other relief under section 6(d)") (Exhibit 1: Northrop Grumman Shipbuilding's original variance application dated 10/26/2009). On September 6, 2011, Newport News Shipbuilding (NNS), a division of Huntington Ingalls Industries, the successor to Northrop Grumman Shipbuilding, submitted an amended application for a permanent variance for the Newport News, Virginia, facility only (Exhibit 2: NNS's amended variance application).[1,2,3]

[1]Unless stated otherwise, the terms "variance application" or "application" used subsequently in this notice refers to both the original (2009) and amended (2011) applications submitted by NNS.

[2]This address also is the place of employment described in the application.

[3]Virginia operates its own OSHA-approved occupational safety and health plan under Section 18 of the Occupational Safety and Health Act (29 U.S.C. 667). Thus, Virginia generally adopts and enforces its own occupational safety and health standards. However, the Virginia plan does not cover private-sector maritime facilities. Accordingly, Federal OSHA retains its authority over occupational safety and health matters not covered by the Virginia plan (see 29 CFR 1952.375(b)(1)), including granting variances from OSHA standards applicable to such facilities.

NNS seeks a permanent variance from the provisions in OSHA shipyard-employment standards that regulate gear and equipment used for rigging and materials handling, specifically paragraphs (i), (j), and (q) of 29 CFR 1915.116. These provisions prohibit shipyard employers from permitting workers to ride the hook or the load, swinging or suspending loads over the heads of workers, or placing workers in a hazardous position between a swinging load and a fixed object. These paragraphs specify the following requirements:

- 29 CFR 1915.116(i): Employees shall not be permitted to ride the hook or the load.
- 29 CFR 1915.116(j): Loads (tools, equipment or other materials) shall not be swung or suspended over the heads of employees.
- 29 CFR 1915.116(q): At no time shall an employee be permitted to place himself in a hazardous position between a swinging load and a fixed object.

In its application, NNS contends that the permanent variance would provide its workers with a place of employment that is at least as safe and healthful as they would obtain under these standards. NNS certifies that it (1) provided the union representative[4] with a copy of its variance application, and (2) notified its workers of the variance request by posting a summary of the application at a prominent location where it normally posts notices to its workers, and specifying where the workers can examine a complete copy of the application. In addition, NNS states that it informed workers and the union representative of their right to petition the Assistant Secretary of Labor for Occupational Safety and Health for a hearing on this variance application.

[4]Mr. Arnold D. Outlaw, President, Local 8888, United Steelworkers (USW), Newport News, VA.

II. Supplementary Information

A. Overview

NNS operates a shipyard in Newport News, Virginia, where it designs, builds, overhauls, and repairs a wide variety of ships for the U.S. government and navies of other countries. In the course of shipbuilding operations, NNS performs many operations that require the use of cranes or hoists during the course of vessel construction. Work processes include the erection of large modular units that, when assembled, comprise a vessel. In exceptional cases, workers may be beneath a portion of the unit for brief periods of time. Workers who work beneath units primarily remove interferences and ensure proper alignment of the units, as discussed below.

As noted above, §1915.116(i), (j), and (q) prohibit workers from riding the hook or load, working on or under a suspended load, or working between a swinging load and a fixed object. However, the procedures and equipment used in shipbuilding today differ substantially from the procedures and equipment used when OSHA adopted these standards in 1982. Shipbuilding is no longer the "stick construction" industry it was when the standards were promulgated. With technological advancements, shipyards today build vessels using modular-production methods. Using these methods, shipyards completely construct major units of a vessel in modules. These modules include all components such as piping, electrical equipment, wiring, machinery, and ventilation. Modular-ship sections typically weigh 25 to 400 tons, but can weigh more. Generally,

NNS uses cranes/hoists to lift and move ship sections during the following phases of modular production:

Phase 1: Fabrication shop/area. In the fabrication shop/area, NNS uses cranes/hoists to lift and rotate ship sections to various orientations to optimize work quality and productivity.

Phase 2: Travel from the fabrication shop/area to the ship-assembly staging area. In this phase, NNS typically uses one or more cranes/hoists to move a ship section from the fabrication shop/area, through the shipyard, and to the ship-assembly staging area.

Phase 3: Lifting from the staging area to the ship-assembly location (such as a dry dock or marine railway). This phase consists of using cranes/hoists for end-to-end installation (involving horizontal assembly), stacking installation (involving vertical assembly), or inserting installation (involving both horizontal and vertical assembly).

- End-to-end installation. This installation involves using cranes/hoists to move ship sections for end-to-end mating (horizontal assembly) of the sections, with brief worker exposure on or under a suspended load, or between a swinging load and a fixed object.

- Stacking installation. In this phase, which involves using a crane/hoist to place a ship module on top of another module (vertical assembly), it is necessary to have workers work briefly on or under a suspended load, or between a swinging load and a fixed object, to identify and remove interferences (or obstructions) that preclude proper alignment and mating of the sections.

- Inserting installation. These installations involve a combination of end-to-end and stacking installations in which NNS uses cranes/hoists to both lower and move

horizontally ship sections into their mating position. For inserting installations, it is necessary to have workers work briefly on or under a suspended load, or between a swinging load and a fixed object, to identify and remove interferences for properly aligning and mating the sections.

NNS argues that OSHA should grant it a variance from 29 CFR 1915.116(i), (j), and (q) because modular shipbuilding occasionally requires workers to work briefly on or under a suspended load, or between a swinging load and a fixed object.

NNS points to OSHA's past approval of an alternative standard for the National Aeronautics and Space Administration (NASA) for work performed under a suspended load (see Ex. 1, Appendix A). This alternative standard, NASA-STD-8719.9, establishes a specific set of controls when no alternative to working under a section or module is available. The NASA document provides 15 safety and engineering requirements that NASA uses in lieu of compliance with 29 CFR 1910.179(n)(3)(vi), 29 CFR 1910.180(h)(3)(vi), and 29 CFR 1910.180(h)(4)(ii).

B. NNS's Proposed Alternative to 29 CFR 1915.116(i), (j), and (q)

As part of its variance application, NNS is proposing an alternative means of compliance with the provisions prohibiting work on or under a suspended modular-ship section, or between a swinging modular-ship section and a fixed object. In its variance request, NNS states that "[m]odular ship construction and repair techniques require, in rare cases, personnel to be under, in, or on such a load as the final fit-up of a modular section is made" (Exhibit 2: NNS's amended variance application). NNS asserts that its alternative means of compliance would provide equivalent protection with the provisions of the standard from which it seeks a variance.

NNS's application includes a description of the alternate means of compliance that it would implement during modular-ship construction and structural-repair operations. The protection of workers from exposure to the crushing hazards associated with work on or under a suspended load, or between a swinging load and a fixed object during the lifting phase of modular-ship sections includes the application of significant engineering, administrative, coordination, and supervisory controls. The variance application further describes ship construction and ship-repair operations as: highly engineered; involving tested and certified equipment; and including continuous communication and monitoring between the workers involved. Hazard analysis, rigging procedures, rigging-lifting-plan with associated drawings, and crew briefings are among existing modular-ship-section lifting requirements adopted by the industry. All workers performing various jobs (e.g., supervisors, operators, riggers) receive special training and obtain necessary qualifications or certifications. Accordingly, NNS proposes the following conditions for its alternative means of compliance:

1. General conditions and definition of suspended load operation

NNS defines a "suspended-load operation" as an operation that meets the following three criteria:

(a) Involves the use of a crane or hoist that supports the weight of a suspended load, whether the load is static or dynamic, including the rigging (i.e., slings, Hydra Sets, lifting fixtures, shackles, straps) when attached to the hook (Note: This condition does not apply to loads supported entirely by a holding fixture, or blocks, even though still attached to the crane and hoist hook);

(b) When workers involved in the operation have any part of their body directly under the suspended load (Note: This condition does not apply when workers have their hands on the sides of a load, e.g., to guide the load); and

(c) In the event of a crane or hoist failure, the falling load could contact workers working directly under it, with injury or death a possible result (Note: This condition does not apply when the falling load would push a worker's hand away such that no injury could result, or the load would come to rest on a holding fixture or block before injuring a worker).

2. Suspended-load operations

NNS proposed to meet the following conditions prior to performing suspended-load operations:

(a) A Registered Professional Engineer familiar with the type of equipment used for the suspended-load operations will prepare and sign a written hazard analysis for each operation. The hazard analysis will provide the following information:

(i) Justification of why NNS cannot perform the operation without workers on or under a suspended load, or between a swinging load and a fixed object, including procedural and design options investigated to determine if NNS could perform the operation without workers working on or under a suspended load, or between a swinging load and a fixed object.

(ii) Detailed description of the precautions taken to protect workers should the load shift, move inadvertently or drop. This description will include an evaluation of the secondary support system, i.e., equipment designed to assume support of (i.e., catch) the load to prevent injury to workers should the crane/hoist fail; this description will include

a determination of the feasibility of using this system under the planned lifting conditions. NNS will construct the secondary support system in accordance with recognized engineering practices and designed with a minimum safety factor of 2 to yield.

(iii) The maximum number of exposed workers allowed under a load suspended from a crane/hoist. In this regard, NNS will limit the number of workers working under a load suspended from a crane/hoist. NNS will allow only those workers absolutely necessary to perform the operation to work in the safety-controlled access area. The rigging-lifting-plan drawing(s) will identify the name and exact location of each individual worker involved in the suspended-load operation and the drawing will ensure that each worker is in the safest location.

(iv) The time of exposure. NNS will ensure that workers' exposures under suspended loads are brief and that they do not remain under the load any longer than necessary to complete the work.

(b) The most senior manager at the site for crane operations and a qualified representative of NNS's health and safety department must review and approve in writing the suspended-load operation based on a detailed hazard analysis and rigging-lifting-plan drawing(s).

(c) NNS will maintain written, up-to-date procedures that specify the minimum requirements for suspended loads. Accordingly, NNS will revise the written hazard analysis and the Operational Procedures Document (or Lift Plan) (e.g., Operations and Maintenance Instruction, Technical Operating Procedure, Work-Authorization Document) to specify the necessary additional requirements identified by the hazard

analysis discussed in Condition 2(b). The procedures will be readily available on-site for inspection by workers during the operation at locations normally used to post worker information.

(d) Each suspended-load operation will have a separate hazard analysis and rigging-lifting-plan drawing performed and approved. A separate hazard analysis is not needed for a limited number of routine and repetitive operations for which a rigging-lifting-plan drawing(s) and procedures already exist and for which no new hazards are present.

(e) NNS will design, test, inspect, maintain, and operate each crane/hoist used in a suspended-load operation in accordance with OSHA standards and internal written procedures.[5] Registered professional engineers will review and certify all aspects of crane/hoist operations. NNS will maintain the results of the annual inspections and all related documents and make them available to OSHA on request.

(f) Each crane/hoist involved in suspended-load operations will undergo a system safety review that uses all documentation available on the suspended-load operation, including the hazards analysis and the rigging-lifting-plan drawing, and with approval based on a detailed analysis of the potential hazards and rationale for acceptance. The review will determine single failure points (SFPs) in all critical mechanical functional components and support systems in the drive trains and critical electrical components.

(i) For cranes/hoists identified as having no SFPs, but for which failure would result in inadvertent movement of the load, the total weight of the suspended load will not exceed the device's rated load.

[5]NNS designated its internal written suspended-load operational procedures as proprietary.

(ii) For cranes/hoists identified as having SFPs the failure of which would result in inadvertent movement of the load, the most senior manager at the site for crane operations and a qualified representative of NNS's health and safety department will approve the use of that device for suspended-load operations.

(g) Before lifting a load during a suspended-load operation, the crane/hoist will undergo a visual inspection (without major disassembly) of components instrumental in controlling the lift (e.g., primary and secondary brake systems, hydraulics, mechanical linkages, and wire ropes). The most senior manager at the site for crane operations must resolve any potential problems before the operation begins. This pre-lift inspection will be in addition to the inspections required in §1910.179(j) and 180(d).

(h) A trained and qualified operator (e.g., 29 CFR 1926.1427) will remain at the crane/hoist controls while workers are under the load.

(i) Safety-controlled access areas will be established with appropriate barriers (rope, cones, safety watches etc.). All non-essential employees will be required to remain outside the barriers.

(j) Prior to initiating any suspended-load operation, the most senior manager at the site for crane operations or designee (e.g., supervisor controlling the lift) will hold a face-to-face meeting of all workers involved in the operation to plan and review the approved lift plan (operational procedural document), including procedures for entering and leaving the safety-controlled access area and the written hazard analysis.

(k) The most senior manager at the site for crane operations or designee (e.g., supervisor controlling the lift) will ensure communications (i.e., voice, radio, hard-wired, or visual) are maintained between the crane/hoist operator(s), signal person(s), and any

worker on or under the suspended modular-ship section, or between the swinging modular-ship section and a fixed object.

(l) Workers on or under a suspended modular-ship section, or between a swinging modular-ship section and a fixed object, will remain in continuous sight of the operator(s) and/or the signal person(s) when feasible. When NNS demonstrates that maintaining continuous sight is not feasible, these workers must remain in continuous communications with the operator and/or signal person.

(m) Workers will not alter their planned access/egress travel path without approval from the most senior manager at the site for crane operations or designee (e.g., supervisor controlling the lift), and then only after the most senior manager at the site for crane operations communicates this change to all workers involved in the operation.

(n) NNS will provide a list of approved suspended-load operations, a list of cranes/hoists used for suspended-load operations, and copies of the associated hazards analysis to OSHA's Office of Technical Programs and Coordination Activities (OTPCA) and the Norfolk Area Office within 15 working days after developing these documents.

III. Decision

After reviewing NNS's amended application, OSHA preliminarily finds that NNS developed and proposes to implement engineering and administrative controls that appear to effectively control the hazards associated with work performed on or under a suspended modular-ship section, or between a swinging modular-ship section and a fixed object for brief periods.

NNS also developed and proposes to implement an alternative means of compliance that appears to provide workers with protection that is equivalent to the protection

afforded to them by the OSHA standards that regulate work on or under a suspended load, or between a swinging load and a fixed object (see, respectively, 29 CFR 1915.116(i), (j), and (q)). This alternative incorporates key elements of a job hazard analysis and lift planning, review, and approval to proceed (i.e., permitting). The alternative will inform essential and affected employees of the steps required to complete suspended-load operations safely, including the hazards associated with these operations and the methods NNS will apply during each step to control the hazards (e.g., secondary support systems, inspection of hoisting and rigging equipment, use of safety-controlled access areas, and specially trained and qualified workers).

In addition, NNS developed and proposes to implement a worker-training program to instruct affected and essential employees in the hazards associated with performing lifting and rigging operations.

OSHA recognized and addressed the need to work on or under a suspended load, or between a swinging load and a fixed object, when it granted NASA an alternative standard (Ex. 1). The alternative standard permitted NASA to expose its workers to these conditions when it complied with specific OSHA standards such as the construction hoisting and rigging standard (29 CFR 1926.753) and the conditions of the alternate standard (see Appendix A of NASA-STD-8719.9, NASA Standard for Lifting Devices and Equipment (in Ex. 1). NNS is proposing to adopt and implement the conditions of NASA's alternate standard for its suspended-load operations.

Based on a review of available information and NNS's variance application, OSHA made a number of additions and revisions to the application that it believes are necessary

to protect NNS's workers involved in suspended-load operations. The following items describe these additions and revisions:

1. OSHA bases the scope of the revised variance application primarily on the scope specified in NNS's application. OSHA expanded the scope to include the types of modular-section lifts made from the Lift Staging Area (described earlier in this notice as Phase 3 of modular ship section lifts) to a ship and to describe the types of lifting operations excluded from the scope of the application. The expanded scope serves to increase worker protection from exposure to crushing hazards associated with work on or under a suspended modular-ship section, or between a swinging modular-ship section and a fixed object, by providing precise identification and description of the limited circumstances under which the variance conditions would apply.

2. OSHA added a section to the application that defined the terms "essential employee," "modular-ship section," "safety-controlled access area," and "suspended-load operation" based on NNS's use of these terms in its variance application (Exhibit 2: NNS's amended variance application). OSHA defined the terms "competent person" and "qualified person, employee, or worker" based on existing OSHA standards. OSHA added a definition for "lift incident" based on conditions the Agency added to the variance. OSHA added a definitions section because it believes the definition will enhance the NNS's and its workers' understanding of the conditions specified by the variance, thereby enhancing worker safety and health.

3. OSHA defines a number of abbreviations to the variance application. OSHA added these definitions to clarify the abbreviations and standardize their usage, thereby

enhancing NNS's and its workers' understanding of the conditions specified by the variance application, thereby enhancing their safety and health.

4. OSHA added a condition requiring the use of properly engineered lashing material to ensure that suspended loads do not inadvertently move or fall from cranes/hoists. This addition will enhance worker safety and health by ensuring that lashing material is strong enough to prevent the load from dropping and injuring workers.

5. As part of the safety and engineering criteria, NNS proposed the development of a written hazard analysis in its application, and OSHA added a condition to this proposal that NNS perform a Failure Modes and Effects Analysis (FMEA) and approval to identify potential single point failures. Such analysis serves to further minimize the potential for inadvertent movement of the suspended load during modular-ship section lifts. This addition will minimize worker exposure to crushing hazards during modular-ship section lifts.

6. OSHA added a condition that the most senior manager at the site for crane operations approve in writing the written hazard analysis and rigging-lifting-plan drawings to ensure that these documents are technically accurate and reflect the knowledge and best practices of those responsible for supervising suspended-load operations.[6]

7. NNS proposed to implement a system-safety review to determine SFPs. OSHA added the clarification to the variance application that a registered professional engineer (PE) must perform this review using a FMEA. This addition will ensure that NNS

[6]The hazard analysis and rigging-lifting-plan drawings will protect worker safety and health by making NNS plan suspended-load operations, anticipate hazards beforehand, and place workers at locations to minimize their exposure to hazards.

conducts the system-safety review according to professional standards. OSHA also clarified that the FMEA should include any weight calculations or structural analysis performed during the review. The FMEA will protect worker safety and health by accurately and reliably identifying potential crane/hoist failures that might result in inadvertent movement of the suspended load, thereby endangering workers near this equipment.

8. NNS proposed in its application to develop an Operational Procedural Document. OSHA added a condition to the application requiring that the most senior manager at the site for crane operations (for example, the supervisor controlling the lift) review the Lift Plan with essential employees to ensure that these workers are familiar with and thoroughly understand the procedures governing the suspended-load operations. The Lift Plan will enhance worker safety and health by ensuring that suspended-load operations occur according to procedures planned in advance to minimize hazards.

9. OSHA added a condition requiring that NNS implement procedures to control hazards from unplanned or unforeseen activities that were not included in the initial planning of the modular-ship section lift operations and not covered by the initial procedural documents (such as lift plan, hazard analysis, and rigging/lifting drawing(s)). This condition will require NNS to develop the Operational Procedural Document to cover the unplanned activities in order to protect worker safety and health by reducing the probability of worker exposure to unanticipated hazards.

10. NNS proposed a case-by-case review of planned suspended-load operations that follow the set of safety and engineering criteria (described by this condition). OSHA added to this condition that a senior crane operations manager and a health and safety

representative must perform this review following development of the Operational Procedural Document. This addition will enhance worker safety and health by ensuring that knowledgeable company officials responsible for suspended-load operations conduct the review.

11. NNS proposed a condition addressing use of the Operational Procedural Document, and OSHA added to this condition requirements that NNS: comply with a program operated by an accredited agency under OSHA's Gear Certification program (29 CFR part 1919); use registered PE-designed pad-eye connection points; comply with nationally recognized non-destructive testing methods;[7] and provide drawings to document hoisting and rigging equipment design specifications. These additions will protect worker safety and health by ensuring all equipment used for suspended-load operations will be of suitable quality and design.

12. NNS proposed a pre-lift inspection in its application. OSHA added a condition to this proposal requiring that safety devices be operational during any lifts conducted during the pre-lift inspections. This addition will increase worker protection during pre-lift inspections.

13. OSHA added a condition specifying that NNS develop a written checklist to document the identification and removal of interferences to proper mating and unnecessary or unsecured items. The inspection using this checklist must be conducted by a qualified employee(s) before the suspended-load operation begins. This condition will protect worker safety and health by reducing the time workers spend under the

[7]For example, ASTM E164-13 Standard Practice for Contact Ultrasonic Testing of Weldments.

suspended load removing interferences to proper mating, and eliminating the need for workers to remove unsecured items while exposed to a suspended load.

14. Another condition added by OSHA requires that that NNS conduct a test lift before beginning each suspended-load operation. The test lift will protect worker safety and health by ensuring that equipment, including the rigging and crane/hoist systems, is in working order for the lift, thus minimizing the possibility of worker harm resulting from equipment failure.

15. NNS proposed a condition specifying that a trained and qualified operator remain at the crane/hoist controls while workers are on or under a suspended load, or between a swinging load and a fixed object. OSHA added a condition requiring that the operator not initiate movement while workers are on or under a suspended load, or between a swinging load and a fixed object, and that NNS use safety devices such as brakes, dogs or stops to further ensure that no such movement takes place. This added condition will protect workers from the hazards associated with inadvertent movement of suspended loads.

16. In its application, NNS proposed the use of safety-controlled access areas where all non-essential employees must remain outside the controlled access areas during modular-ship section load operations. This requirement will protect workers by minimizing the number of workers exposed to this hazard.

17. OSHA added the prohibition of working under, in or on suspended loads requirement to limit the presence of essential employees to adjusting chain falls, making initial connections or confirming clearances between hull structures and outfitting

systems. This requirement protects workers by minimizing worker exposure to the hazards of working under, in, or on suspended loads.

18. OSHA added a condition that NNS train workers (including, but not limited to, current and newly assigned to be involved in modular-ship section load operations, qualified, and essential employees) to recognize hazards associated with work under, in or on suspended modular-ship section loads and associated hazard-control methods which minimize their risk of harm during these operations. This added condition includes refresher training to ensure that workers retain knowledge of the hazards and associated control methods or update this knowledge as changes occur in hazard-control technology, methods, and procedures. Finally, the added condition requires NNS to document the training to provide a means of tracking the training received by workers and, consequently, to prompt NNS to update that training if necessary.

19. NNS proposed a pre-job briefing requirement in its variance application, and OSHA clarified this condition by specifying that: the pre-job briefing include all workers involved in the suspended-load operation, both essential and non-essential employees; NNS document worker attendance at the briefing using a signed roster; and the briefing address the rigging-lifting drawing(s). This clarification will protect workers by refreshing their knowledge of procedures just before the suspended-load operation begins.

20. NNS proposed having continuous communication during suspended-load operations, and OSHA revised the condition by specifying that suspended-load operations must cease upon loss of communications. This requirement will protect workers by minimizing their exposure to hazards during communications failure.

21. In its application, NNS proposed that workers remain in continuous sight of the operator(s) and/or signal person(s) when feasible during suspended-load operations. OSHA clarified this condition by specifying that all essential employees must remain in continuous sight and/or be in communication with the most senior manager at the site for crane operations or designee (e.g., supervisor controlling the lift) because this manager must account for all workers involved in the operation to ensure that no worker is in harm's way.

22. OSHA added a condition that the crane/hoist operator would have to lower the suspended load to the ground or other supporting structure, or the most senior manager at the site for crane operations or designee (e.g., supervisor controlling the lift) would have to cordon off the site of the crane/hoist operation, if NNS postpones or discontinues a lift. If the load remains suspended after postponing or discontinuing a lift, the crane/hoist operator would have to remain on duty. This condition would reduce workers' exposure to the suspended-load hazard by ensuring that the crane/hoist operator remains in control of the suspended load should workers be in the vicinity of the load.

23. Another condition added by OSHA requires a post-lift review of the suspended-load operation. This condition would protect workers by assisting NNS in identifying shortcomings in the suspended-load program.

24. NNS proposed to develop a listing of the modular-ship section lift operations (suspended-load operations) scheduled to be performed during each quarter. OSHA is clarifying this condition by specifying that by the 15th calendar day of each new quarter NNS would have to prepare a list of planned modular-ship section lifts to be performed during the upcoming quarter (including the cranes/hoists used for suspended-load

operations, the date and time of the operation, associated hazard analysis completed, and the calculated weight of each lift), and update the list when significant changes occur. OSHA also specified that workers and their representatives would have access to the list, and by January 15th of each year, NNS would have to provide to the Norfolk Area Office and OSHA's Office of Technical Programs and Coordination Activities a copy of the list. The list requirement enhances worker safety by ensuring that NNS and workers have the most recent information on each modular-ship section lift in advance of its being performed so they have an opportunity to review and become familiar with the operation's potential hazards and planned hazard mitigation strategies.

25. OSHA added a condition requiring that NNS conduct an investigation of all lift incidents related to suspended-load operations. This condition would protect workers by ensuring that NNS investigates such incidents and take actions necessary to prevent a recurrence.

26. OSHA included a records-management condition that would assist the Agency in monitoring and enforcing the variance conditions. This requirement will protect workers by ensuring that NNS implements and maintains these conditions.

27. OSHA also added a condition that requires NNS to provide the Agency with up-to-date information regarding its corporate status. This information would permit OSHA to monitor and enforce the conditions to the benefit of NNS's workers.

IV. Specific Conditions of the Variance Application

After reviewing the evidence described above, OSHA preliminarily determined that the proposed conditions would provide a place of employment as safe and healthful as that provided by the standards from which NNS is requesting a variance, notably 29 CFR

1915.116(i), (j), and (q). Therefore, pursuant to the provisions of 29 CFR 1905.11(c), OSHA is announcing NNS's application for a permanent variance and is seeking public comment on this application. The application includes the following conditions:

A. Application

Except for the requirements specified by §1915.116(i), (j), and (q), Newport News Shipbuilding would have to comply fully with all other safety and health provisions that are applicable to shipyard employment when implementing the permanent variance.

B. Scope

1. The variance would only apply to operations that satisfy all of the following:

(a) the operations are performed by Newport News Shipbuilding employees during modular-ship section construction and structural-repair operations at the company's Newport News, Virginia, facility;

(b) the operations involve lifting modular-ship sections from the lift-staging area to a ship during one of the following assembly phases:

(i) "End-to-End" (horizontal) assembly of modular-ship sections;

(ii) "Stacking" (vertical) assembly of modular-ship sections; or

(iii) "Inserting" (combined vertical/horizontal) assembly of modular-ship sections.

(c) the workers exposed to the hazards of the lift are those supporting modular-ship section lifts and essential employees working on or under a suspended modular-ship section, or between a swinging modular-ship section and a fixed object, during vessel assembly, repair, overhaul, and removal of interferences (or obstructions) that preclude proper alignment and mating of sections (fit-up); and

(d) Workers are exposed to the hazards of the lift only for a brief period of time.

2. The variance would not cover:

(a) Lifting modular-ship sections in the fabrication (assembly) shop or area;

(b) Transporting modular-ship sections from the fabrication (assembly) shop or area to the lift-staging area;

(c) Lifting structures or equipment onto a ship's deck; and

(d) Loads consisting of tools, equipment, or other materials.[8]

NOTE: Under Condition B.1.c, if engineering calculations show that failure of the crane/hoist or rigging during the lifting process could dislodge the ship from its supporting blocks (e.g., keel blocks, bilge blocks), then all workers, other than those essential to the modular-ship section alignment and mating operation, must vacate the ship while the modular ship-section is suspended during the lifting process. Example: When lifting a superstructure onto the main deck of a vessel under construction, should the load fall between the dry dock and ship, then the ship could dislodge from the supporting blocks; therefore, all workers other than those essential to the lift would have to vacate the vessel during the suspended-load operation.

C. Definitions

The following definitions would apply to the permanent variance, and do not necessarily apply in other contexts:

[8]In sum, Condition B.2 specifies that there would be no instances of workers working on or under a suspended modular-ship section, or between a swinging modular-ship section and a fixed object, at the assembly shop or area, or while traveling with a suspended load through the shipyard.

1. Affected employee – a Newport News Shipbuilding employee having a direct or supporting role in completing a suspended modular-ship section lift operation (including workers performing tasks such as crane operator, signal person, supervisor).

2. Brief period of time – a limited amount of very short duration that is necessary for employees to work under, in or on the load for the purposes of alignment or positioning only. This will be limited to the amount of time necessary to perform the alignment or positioning operation, or 15 minutes, whichever is less.

3. Competent person – one who is capable of identifying existing and predictable hazards in the surrounding or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authority to take prompt corrective measures to eliminate them.[9]

4. Essential employee – a Newport News Shipbuilding employee required to work under, in or on a suspended modular-ship section, or between a swinging modular-ship section and a fixed object, while ensuring the proper alignment and mating of modular-ship sections. Examples of work activities performed by essential employees include, but are not limited to: adjusting chain falls; confirming clearances between hull structures and outfitting systems; identifying and removing interferences; and aligning and mating the section to a ship.

5. Lift incident – an unplanned event or series of events that resulted in a work-related recordable injury or illness, or caused or could cause harm to a worker (includes near-miss events).[10]

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[9]Adapted from 29 CFR 1926.32(f).

[10]See 29 CFR 1904 (Recording and Reporting Occupational Injuries and Illnesses) (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9631);

6. Lift Plan – a set of written documents that specify the core requirements for completing a suspended modular-ship section lift. The following are examples of documents included in a lift plan: engineering design; engineering hazard analysis; rigging and lifting drawings; crane, rigging and other lift support equipment inspection; operation and maintenance instructions; technical operating procedures; and work review, justification, and authorization documents. The documents included in a lift plan are collectively also known as the operational procedural document.

7. Modular-ship section – a ship block, section, or module that includes a portion of two or more of the following structures: deck, bulkhead, overhead, or hull.

8. Qualified person – one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrated an ability to solve or resolve problems relating to the subject matter, the work, or the project.[11]

9. Rigging-lifting-plan drawing – a sketch of the rigging used whenever essential employees perform a suspended modular-ship section lift by working under, in or on a suspended load, or between a swinging load and a fixed object. The sketch is required to include the following essential information concerning the planned lift: (1) the number and location of essential employees that are to be on or under the load; (2) a pictorial illustration of the rigging configuration with size of all rigging components including load attachment points; (3) load identification, unit number or description; (4) weight of the load; (5) gear capacity and asset (crane) number/ hook capacity; and (6) approval line.

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recordkeeping forms and instructions (http://www.osha.gov/recordkeeping/RKform300pkg-fillable-enabled.pdf*); and updates to OSHA's recordkeeping rule and webpage ((79 FR 56130); (http://www.osha.gov/recordkeeping/index.html).

[11] Adapted from 29 CFR 1926.32(m).

10. Safety-controlled access area – a work area with controlled access. The periphery of the safety-controlled access area must:

(a) Be well defined and easily recognizable;

(b) Have means to keep unauthorized personnel out of the zone such as appropriate barriers (e.g., rope, cones, safety watches);

(c) Extend a safe distance beyond the radius of the crane when at its maximum extended lifting position as determined by a hazard analysis; and

(d) Monitored and controlled by a competent person.

11. Single failure point (SFP) – identification of the critical components of the crane/hoist system involved in a suspended-load operation such that malfunction of any single component would provoke a total systems failure.

12. Suspended modular-ship-section operation – an operation that meets all three of the following criteria:

(a) The operation involves the use of a crane/hoist or cranes/hoists that support the weight of a suspended modular-ship section, with no distinction made between static and dynamic loads. The load consists of all associated rigging equipment, including slings, Hydra Sets, lifting lugs, shackles, and straps, when attached to the crane hook;[12]

(b) When workers involved in the operation have any part of their body directly under the suspended load;[13] and

[12]This condition does not apply to loads supported entirely by a holding fixture or blocks even though still attached to the crane and hoist hook.

[13]This condition does not apply when workers have their hands on the sides of a load, e.g., to guide the load.

(c) In the event of a crane or hoist failure (including a rigging failure), the falling load could contact workers working directly beneath it, with injury or death as a possible result.[14]

D. Abbreviations

Abbreviations used throughout the permanent variance would include:

1. CSP – Certified safety professional
2. FMEA – Failure modes and effects analysis
3. JHA – Job-hazard analysis
4. NASA – National Aeronautics and Space Administration
5. NNS – Newport News Shipbuilding
6. OSHA – Occupational Safety and Health Administration
7. PE – Professional engineer
8. SFP – Single failure point

E. Engineering-Review Requirements

1. Hazard-avoidance protocol. Using a hazard-avoidance protocol, NNS would have to design hazards out of the suspended-load operations covered by the permanent variance to the greatest extent possible. Accordingly, NNS would:

(a) Have to engineer, design, install, and operate all future systems, hardware, and equipment associated with these operations to prevent exposing workers to the hazards associated with working under, in or on a suspended modular-ship section, or between a

[14]This condition does not apply when the falling load would push a worker's hand away such that no injury could result, or the load would come to rest on a holding fixture or block before injuring a worker.

swinging modular-ship section and a fixed object, unless NNS demonstrates that doing so is technically infeasible;

(b) Perform an operation in which employees work under, in or on a suspended modular-ship section, or work between a swinging modular-ship section and a fixed object, only under specifically approved and controlled conditions; and

(c) Perform the operation specified under Condition E.1.b above only after meeting all the review, approval, documentation, and special requirements.

2. Use of properly engineered lashing materials.

(a) When the operation specified under Condition E.1.b above involves the use of a crane/hoist that supports the weight of a modular-ship section, NNS would have to use properly engineered lashing materials[15] capable of lifting, moving, and suspending the entire weight of the load; and

(b) NNS would have to conduct a detailed weight calculation in determining whether the lashing material can support the requisite weight of the load, considering the duration of maintaining the load in a safe condition in the event of loss of continuous communication, and paying special consideration to environmental factors that may affect the load (e.g., water retention, snow, ice).

3. Engineering-hazard analysis.

(a) The most senior manager at the site for crane operations specified in paragraph E.1.b above must approve suspended modular-ship section load operations in writing based on: a detailed written hazard analysis, a rigging-lifting-plan, and a supporting drawing of the operation;

[15]Used in accordance with the applicable provisions of 29 CFR 1915 Subpart G – Gear and Equipment for Rigging and Material Handling.

(b) NNS would have to ensure that the:

(i) Responsible crane-operations organization prepares the written engineering-hazards analysis under the direction of the most senior manager at the site for crane operations; and

(ii) Qualified representatives of NNS' engineering offices and the health and safety department review this analysis and indicate approval by signing the analysis;

(c) The engineering-hazard analysis would have to be in writing and include:

(i) A justification specifying why NNS cannot conduct the operation without its employees working under, in, or on suspended modular-ship sections, or between a swinging modular-ship section and a fixed object, with this justification describing the procedures and design options NNS considered in determining that it could not conduct the operation without its employees working under, in, or on a suspended modular-ship section, or working between a swinging modular-ship section and a fixed object;

(ii) Details of the engineering controls taken to prevent the modular-ship sections from moving or shifting when employees are under, in, or on a suspended modular-ship section or between a swinging modular-ship section and a fixed object, including the evaluation of testing and safety devices used for this purpose;

4. Secondary support systems. NNS would have to design any secondary support systems used during the operation specified in Condition E.1.b above in accordance with recognized engineering practices and designed with a minimum safety factor of 2 to yield.

F. Limiting Employee Hazard Exposure

NNS would have to limit employee exposure to the hazards of working under, in, or on a suspended modular-ship section, or between a swinging modular-ship section and a fixed object by:

1. Establishing a safety-controlled access area, taking into account the swing radius of the crane;

2. Allowing only essential personnel in the safety-controlled access area;

3. Ensuring that the rigging-lifting-plan drawings identify by name the exact location of each essential employee allowed in the safety-controlled access area and the location of that employee in the area;

4. Ensuring that each essential employee allowed in the safety-controlled access area is in the safest location possible for performing the work;

5. Ensuring that each essential employee moves to and from the work location using the safest route possible, and remains at that location only long enough to complete the work;

6. Verifying in writing that procedures are in place to prevent movement or shifting of the suspended modular-ship section when essential employees are under, in, or on a suspended modular-ship section, or between a swinging modular-ship section and a fixed object; and

7. Ensuring that a crane operator who meets the requirements of 29 CFR 1926.1427 and 1926.1430 is operating the crane used to suspend the modular-ship section while essential employees are working under, in, or on a suspended modular-ship section, or between a swinging modular-ship section and a fixed object.

G. Job-Hazard Analysis and Rigging-Lifting Drawings

Each operation specified under Condition E.1.b above would have a separate written job-hazard analysis that includes a detailed rigging specification drawing(s) and a detailed lifting plan drawing(s) approved and signed by the most senior manager at the site for crane operations. A separate hazard analysis is not needed for routine and repetitive operations where a rigging-lifting-plan drawing(s) and procedures already exist and where no new hazards are present.

H. Failure-Modes and Effects Analysis (FMEA) and Approval

1. Each crane involved in an operation specified under Condition E.1.b above would undergo a FMEA approved in writing by a Registered Professional Engineer.

2. The FMEA would:

(a) Determine SFPs by assessing the rigging equipment and all critical mechanical functional components and support systems in the drive trains and critical electrical components of the crane; and

(b) Include weight calculations and any structural analysis deemed necessary by the Registered Professional Engineer responsible for approving the FMEA.

3. For cranes and rigging equipment identified as not having any SFPs, the failure of which would result in movement of the modular-ship section, the total weight of the suspended modular-ship section load would not exceed the crane's rated load.

4. For those cranes and rigging equipment identified as having an SFP, the failure of which would result in movement of the modular-ship section, the most senior manager at the site for crane operations and a qualified representative of the health and safety department would have to approve in writing use of the crane and rigging equipment for

an operation specified under Condition E.1.b above after reviewing all the documentation required by this order that addresses the operation, including the FMEA.

I. Operational Procedural Document (Lift Plan)

NNS would have to:

1. Develop and maintain written procedures that specify the requirements for an operation specified under Condition E.1.b above.

2. Revise the written detailed job-hazard analysis, rigging-lifting-plan drawing(s), and the operational-procedures documents (e.g., operations and maintenance instruction, technical operating procedure, work authorization document, FMEA) to specify any additional requirements identified by the job-hazard analysis.

3. Review any revisions made under Condition I.2 above with essential employees and make these revisions available on-site during an operation specified by Condition E.1.b above for inspection by affected employees, employee representatives, or OSHA personnel.

J. New or Unforeseen Work Activity

During an operation under Condition E.1.b above, if a new or unforeseen work activity or circumstance not covered by the original operational-procedural documents (e.g., job-hazard analysis, rigging-lifting-plan drawing(s), operations and maintenance instruction, technical operating procedure, work authorization document, FMEA) arises, then NNS would have to:

1. Immediately stop the lift and lower the modular-ship section to the ground or other supporting structure;

2. Before continuing the operation, obtain approval in writing from the most senior manager at the site for crane operation and the health and safety department to revise the operations; and

3. Before repeating the operation on a subsequent occasion, prepare revised operational-procedures documents (e.g., job-hazard analysis, rigging-lifting-plan drawing(s), operations and maintenance instruction, technical operating procedure, work authorization document, and FMEA) and obtain the approvals required of these documents.

K. Operational Requirements

1. A Registered Professional Engineer would have to develop and approve inspection, testing, and maintenance procedures, and competent persons would have to perform the procedures and resolve noted discrepancies.

2. An independent third-party such as an accredited agency under OSHA's Gear Certification program (29 CFR 1919) would have to inspect all cranes and rigging equipment not more than one year before the modular-ship section lift being performed, and NNS would have to maintain the inspection results, and make them available to OSHA upon request.

3. The engineers who design the modular-ship section subject to the operation specified under Condition E.1.b above would have to design or approve the pad-eye (lifting-lugs) connection points on the section, and specify the size (length and diameter) of wire-rope slings that would lift, move, and handle the section.

4. Before using lifting pad-eyes and other welded lifting connection points in the operation, NNS would have to perform non-destructive tests on these pad-eyes and connections according to nationally recognized non-destructive testing methods.[16]

5. NNS would have to:

(a) Document the design specifications pertinent to the operation on engineering drawings;

(b) Ensure that these drawing accompany the modular-ship section during an operation specified under Condition E.1.b above; and

(c) Make the drawings available to the crane foreman/supervisor.

L. Pre-Lift Inspections and Test Lift[17]

1. Before lifting the modular-ship section involved in an operation specified under Condition E.1.b above, the components of the crane and rigging equipment involved in lifting the load would have to undergo a visual inspection (without major disassembly, and documented with a written checklist).

2. NNS would have to resolve any discrepancies identified in this visual inspection before initiating an operation.

3. Before lifting modular-ship sections for assembly with the ship, a qualified person(s) would have to:

(a) Perform an inspection to identify and remove interferences to proper mating; and

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[16] See footnote 7.

[17] NNS must perform the pre-lift inspections specified below in addition to the inspections required by §§1910.179(j), .180(d), and 1915.111, which apply to cranes in maritime facilities (see 1910.5). The pre-lift inspection and test is in addition to the inspections and/or testing required by other safety procedures or daily operator checks specified under these conditions.

(b) Use a written checklist to document the inspection, including the removal of litter, tools, and any other unnecessary or unsecured equipment or items.

4. Before initiating an operation specified under Condition E.1.b above, NNS would have to:

(a) Conduct a test lift that consists of lifting the modular-ship section one to three feet above the lift staging area for five minutes; and

(b) Ensure that all safety devices identified in the modular-ship section lift plan are operational during the test lift.

M. Crane Operator

1. NNS would ensure that the crane operator who meets the requirements of 29 CFR 1926.1427 and 1926.1430 remains at the crane controls at all times during an operation specified under Condition E.1.b above.

2. Unless specifically authorized and required by the lift plan, the operator would:

(a) Not initiate movement of the suspended modular-ship section while an employee(s) is under, in, or on a modular-ship section, or between a swinging load and a fixed object,

(b) Engage all safety devices such as brakes, dogs, or stops in accordance with the lifting plan when an employee(s) is under, in, or on a modular-ship section, or between a swinging load and a fixed object.

N. Safety-Controlled Access Areas

NNS would have to:

1. Establish safety-controlled access areas for all operations specified by Condition E.1.b above.

2. Ensure that all non-essential personnel remain outside the safety-controlled access areas.

NOTE: When engaged in an operation specified under Condition E.1.b above, if engineering calculations show that a failure of the crane or rigging during the lifting process could result in dislodging the ship from its supporting blocks (e.g., keel blocks, bilge blocks), then all personnel, other than essential employees necessary for aligning and mating the modular-ship section, must vacate the ship during the operation and remain outside the safety-controlled access area. Example: When lifting a superstructure onto the main deck of a vessel under construction, dropping the load between the dry dock and ship could knock the ship off of the supporting blocks; therefore, all workers other than essential employees required to align and mate the modular-ship section to the ship must vacate the vessel and remain outside the safety-controlled access area during the operation.

O. Working Under, In, or On Suspended Modular-Ship Section, or Working Between a Swinging Modular-Ship Section and a Fixed Object

1. NNS's essential employees may be under, in, or on a suspended modular-ship section, or between a swinging modular-ship section and a fixed object, only while ensuring the proper alignment and mating of modular-ship sections. Examples of work activities include, but are not limited to: adjusting chain falls, confirming clearances between hull structures and outfitting systems, identifying and removing interferences, and aligning and mating the section to a ship.

2. Only essential employees authorized by the most senior manager at the site for crane operations (e.g., rigging foreman or supervisor) may be under, in, or on a

suspended modular-ship section, or between a swinging modular-ship section and a fixed object.

P. Training

1. NNS would have to develop and implement a worker training program to instruct affected employees in the:

(a) Hazards associated with performing work under, in, or on suspended modular-ship section, or between a swinging modular-ship section and a fixed object; and

(b) The controls mandated to protect affected employees from these hazards.

2. NNS would have to train and instruct the crane foreman/supervisor to strictly adhere to the lift plan and the rigging specifications on the approved drawings.

3. NNS would have to develop and implement a refresher training program, conducted periodically and as necessary, for all employees working under, in, or on suspended modular-ship section, or between a swinging modular-ship section and a fixed object. At a minimum, the refresher training would:

(a) Consist of a lift briefing;

(b) Review each employee's responsibilities; and

(c) Take place before initiating the operation.

4. NNS would have to document all training provided under the permanent variance, and maintain training records as specified below under Condition U.2.a.

Q. Briefing

Prior to conducting an operation in which its employees work under, in, or on suspended modular-ship section, or between a swinging modular-ship section and a fixed object, NNS would have to:

1. Hold the briefing with all affected employees having a direct or supporting role in the operation (including workers and/or contractors performing tasks such as crane operator, signal person, essential employees, supervisors), to review the operational procedures involved in the operation, including procedures for entering and leaving the safety-controlled access area;

2. Use the written job-hazard analysis and rigging-lifting-plan drawing(s) during the briefing to supplement the information;

3. Cover all safety considerations;

4. Ensure that the employees understand the information provided at the briefing; and

5. Document the briefing using a signed roster of attendees, and maintain the roster as specified at Condition U.2.a.

R. Continuous Communication

NNS would have to:

1. Maintain communications (voice, radio, hard wired, or visual) between the crane/hoist operator(s), signal person(s), and employees working under, in, or on the suspended modular-ship section, or between a swinging modular-ship section and a fixed object, at all times;

2. Upon losing communications, stop the operation immediately, inform employees of the problem, ensure that the employees exit the safety-controlled access area, and that the modular-ship section is in a safe condition (e.g., prevented from inadvertent movement or shifting while suspended or returned to the lift staging area if restoring

communications takes longer than the load can remain safely suspended as determined in Condition E.2.b above); and

3. Commence the operation only after restoring communications and informing the affected employees about what action NNS is taking to avoid a reoccurrence.

S. Continuous Visual Observation

The most senior manager at the site for crane operations or designee (e.g., supervisor controlling the lift) must have continuous sight of and be in constant visual communication with, any essential employees working under, in, or on a suspended modular-ship section, or between a swinging modular-ship section and a fixed object.

T. Post-Lift Review and Incident Investigations

1. Post-lift review. NNS would have to conduct and document a post-lift review for each operation involving a suspended modular-ship section, including the identification of any incident that occurred during the operation.

2. Lift-incident investigation. NNS would have to investigate each lift incident. In doing so, NNS would have to:

(a) Initiate the investigation within 8 hours of the lift incident or 8 hours after becoming aware of the incident;

(b) Have a competent person(s) with expertise in the hazards associated with the operations involved in the incident conduct the investigation;

(c) Have the investigator(s) prepare a written report at the conclusion of the investigation which includes, at a minimum, the date of the incident, the date the investigation began, the date of the report, the location of the incident, the equipment or processes involved, a description of the incident, the root cause, the contributing factors,

and any corrective actions resulting from the investigation (the completed OSHA 301 Incident Report form may be used for this purpose);[18]

(d) Provide a copy of the report to OSHA's Norfolk Area Office and OTPCA at OSHA's National Office within 15 calendar days of the incident or 15 calendar days after becoming aware of the incident;

(e) Within 15 calendar days of completing the incident report, address the findings of the report and implement corrective actions;

(f) Document in writing the corrective actions taken;

(g) Review the findings of the report and corrective actions taken with all affected workers; and

(h) Provide certification to OSHA's Norfolk Area Office and OTPCA at OSHA's National Office within 15 calendar days of completing the incident report, that the employer informed affected workers of the incident and the results of the incident investigation (including the root cause determination and preventive and corrective actions identified and implemented).

U. Records

1. By the 15th calendar day of each new quarter, NNS would have to prepare a list of planned modular-ship section lifts to be performed during the upcoming quarter (including the cranes/hoists used, the date and time of the operation, associated hazard analysis completed, and the calculated weight of the lift), and update the list when significant changes occur. NNS would have to:

[18]See footnote 10

(a) Make this document available for inspection by affected employees, employee representatives, and OSHA upon request; and

(b) By January 15 of each year, NNS would have to provide to the Norfolk Area Office and OTPCA, a copy of the list of approved suspended-load operations completed the previous year.

2. NNS would have to:

(a) Retain all records required by the permanent variance for five years from the time it generates each such record (except when applicable regulations define a longer records-retention period); and

(b) Make all records and related documents available for inspection by affected employees, employee representatives, and OSHA upon request.

V. Notice to OSHA

NNS would have to:

1. Inform OTPCA as soon as it has knowledge that it will:

(a) Cease to do business; or

(b) Transfer the activities covered by this permanent variance to a successor company.

2. Submit to the Norfolk Area Office and OTPCA, a copy of any incident-investigation report and associated corrective-action plan within 15 working days of the incident.

3. Submit to OTPCA annually, a written certification indicating whether the conditions of the permanent variance are effective and remain relevant and necessary, and any recommendations for modifying these conditions.

V. Authority and Signature

David Michaels, PhD, MPH, Assistant Secretary of Labor for Occupational Safety and Health, 200 Constitution Avenue, NW., Washington, DC 20210, authorized the preparation of this notice. Accordingly, the Agency is issuing this notice pursuant to Section 29 U.S.C. 655(6)(d), Secretary of Labor's Order No. 1-2012 (77 FR 3912, Jan. 25, 2012), and 29 CFR 1905.11.

Signed at Washington, DC, on July 23, 2015.

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David Michaels,
Assistant Secretary of Labor for Occupational Safety and Health.

BILLING CODE: 4510-26-P

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