



## Cranes

### **A. Hazard and Reference**

1. The use of cranes at NNS presents a serious potential hazard to personnel and to equipment. The requirements listed here are taken from OSHA Standards and the NNS Crane Program Manual (F-1089), which is the primary NNS reference. These requirements will be updated as necessary when this primary reference is changed.
2. NNS defines a crane as a fixed or mobile power operated machine with integral hoisting mechanism. A crane moves a load vertically by means of drums, cables, chains, hydraulics and single or multiple-sheaved blocks, and laterally by means of wheels and/or a rotating boom.

### **B. Regulations**

1. Each contractor owning and/or operating cranes at NNS or supporting off-site work by NNS, shall ensure all of their cranes, crane operators, riggers and signal persons meet applicable OSHA regulations and ANSI/ASME standards incorporated by reference within the OSHA regulations.
2. The OSHA requirements are specified in:
  - a. 29 CFR 1910, General Industry
  - b. 29 CFR 1915, Maritime
  - c. 29 CFR 1926, Construction

### **C. Contractor Cranes**

1. Prior to bringing a crane on NNS property, each contractor whose employees will operate cranes must provide to the NNS Environmental, Health and Safety Department (O27) 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) and NNS requirements. The contractor shall provide a copy of any changes to NNS O27 on an annual basis.
2. Contractors shall ensure only properly trained and qualified 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 (Appendix A in this document). Fax the COC to (757) 688-4026.



3. The completed COC must also be displayed in the crane cab at all times while the cranes are on NNS property. The COC must be signed by a responsible company officer of the employer that provides cranes for any lifting and handling work at NNS. By his or her signature on the COC, the employer certifies that:
  - a. The COC is displayed on all cranes at all times while the cranes are on NNS property.
  - b. The crane and crane operators provided by his or her company for work at NNS comply with all applicable OSHA requirements.
  - c. Each person operating cranes at NNS is fully trained and qualified to operate the equipment at NNS.
  - d. Equipment and personnel certifications will remain valid while operating at NNS.
  - e. All cranes are equipped with an anti-two-blocking device that, when activated, disables all crane function whose movement can cause tow-blocking.
  - f. No safety devices will be by-passed during lifting and handling operations at NNS.
  - g. Any lifting and handling related accident or incident involving the employer's cranes or operators will be reported to NNS per the requirements listed in Section 8.
  - h. Crane operators shall attend the NNS crane orientation prior to operating a crane. Contractors shall coordinate with their NNS Contractor Coordinator and/or Sponsor to schedule the orientation.

#### **D. Mobile Cranes**

1. Load Chart - 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.
2. 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.
3. Vehicle Traffic and Crane Safety - All contractors working with boom equipped mobile equipment (mobile cranes) will complete the following required actions while working in areas where vehicle traffic may travel near the equipment:
  - a. Establish a safe working area, or envelope, for your crane.
  - b. Block off roadways with orange cones or barrier tape to prevent drivers from forcing their vehicles into a dangerous area.



- c. When you block an area off so that a road becomes impassable, be sure to notify Communications, (757) 380-4031) so emergency vehicles may take an alternate route.

## **E. Crane Envelope**

1. Fouling of a cranes travel path is preventable.
2. The crane envelope includes the cranes structure, its travel path, and a 12” buffer encompassing the structure and the travel path. It is important to understand the cranes envelope includes areas above the crane as well as along the sides and any space along the travel path.
3. If a non-crane activity such as installation of new equipment, modification of existing equipment, modification or repair to building structure could possibly foul the crane envelope, the responsible personnel performing the work and the assigned NNS Contractor Coordinator must evaluate the situation to determine if there is a way to avoid breaching the crane envelope. If there is not an alternative to breaching the crane envelope, the cognizant FWS engineering group must be contacted to provide instructions.
4. A hazard analysis must completed when performing work around the structure of a crane and/or the travel path of the crane. These tasks could include:
  - a. Installation or modification of machinery,
  - b. Electrical conduit, lighting and cables,
  - c. Piping systems, components and other tasks not listed here.
5. Not only can machinery, equipment or components foul the crane envelope, but vehicles, bicycles, mobile equipment, material and employees can as well.
  - a. Never park a vehicle, bicycle, or mobile equipment or place material in the crane travel path.
  - b. Most importantly, never place yourself in the crane envelope when performing non-crane work unless the required controls are in place.

## **F. Lift Plan**

1. Vendors/Contractors working for NNS performing lifting and handling operations are required to develop a job specific rigging and lift plan for each specific crane configuration and location and activity prior to lifting any suspended load.
2. The contractor’s lift plan shall, at a minimum, identify the following:
  - a. Weight of the load and how it was determined.
  - b. Center of Gravity (CG) location and how it was determined.



- c. Rigging gear, arrangement and weight of the load, including the rigging gear weight.
  - d. Lifting equipment capacity in the configuration used.
  - e. Reference sketches and/or calculations.
  - f. Assessment of lifting operations.
  - g. Roles and responsibilities of the lifting team.
3. Other scenarios where a lift plan is required:
- a. Using a crane to lift a personnel basket.
    - 1) You must comply with 29 CFR 1926.1431- Hoisting Personnel requirements for personnel lifts.
    - 2) A personnel lifting section must be included in the lifting and handling section of your company's approved safety plan.
  - b. Using a forklift with a jib attachment where the load is under the forks. Any attachment/jib used must be approved by the forklift manufacturer and a load chart for this attachment must be on site or in the cab of the forklift.
  - c. Using a backhoe, excavator or front end loader with a manufacturer's approved lifting attachment.
    - 1) This attachment must come with a load/weight rating from the manufacturer.
    - 2) If the bucket has an attachment that was not installed by the manufacturer, this attachment must be engineered and a load/weight limit must be given by the pertinent engineer.
  - d. Using a boom truck to lift or set equipment/material.
  - e. Using A-Frames to lift or set equipment/material.
  - f. Rigging from any structure to lift or set a load.

#### **G. Lift Plan Brief**

- 1. The most detailed lift plan is only as effective as the pre-job brief that communicates the details to the entire team. Everyone involved in the lift must be involved in the briefing. A good briefing assumes nothing and covers everything related to the lift.
- 2. At a minimum all pre-job briefs shall include the following:
  - a. Discuss the crucial information on the lift plan. Examples include the load weight, CG, type and capacity of gear and equipment, lift points.
  - b. Discuss the gear and equipment listed and available.



- c. Discuss the entire operating envelope. Include the lift site, travel path, landing site, close tolerances - and check that all areas are clear.
- d. Talk to the team about the risks and hazards of the job and ways to avoid or eliminate them.
- e. Identify past problems with this type of lift. Look at “lessons learned” from similar lifts.
- f. Review the job and ask open-ended questions to ensure all team members working the job with you understand their responsibilities and how they will accomplish them.
- g. Anticipate problems and discuss the conditions under which the work will “STOP!”
- h. If conditions change, STOP, revise the lift plan and re-brief the team.
- i. Each Team member shall initial and date the plan after the brief.

**NOTE: Always work your job as it has been detailed in the lift plan.**

#### **H. Non-Operating Crane Pass**

1. Contractors that bring 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, in this document), 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.
2. 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.
3. 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.

#### **I. Reporting Crane Accidents/Incidents**

1. All crane and rigging accidents involving contractor operated cranes servicing work performed at NNS, or supporting off site work by Huntington Ingalls Industries-Newport News must be reported.
2. A crane accident occurs when any one or more of the elements in the envelope of operation fails through commission or omission, to perform correctly during the lifting and handling operation, including operation during maintenance or testing resulting in the following:
  - a. 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.

- b. Material or equipment damaged
- c. Dropped load
- d. Derailment
- e. Two-blocking
- f. Overload
- g. Collision, including unplanned contact between the load, crane, and/or other objects.

**Important:** Items c, d, e, f, and g are considered crane 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 damage of, or to, this component unless the component failure results in significant damage to other components (e.g., dropped boom, damage to nearby equipment/gear, damage to load, roll over, collision of load, etc.).

- 3. In the event of a crane accident, the following actions **must** be taken:
  - a. Stop all operations immediately and secure the site. The only authorized actions that can be taken are those required to assist injured personnel and stabilize equipment or loads that pose an imminent threat to personnel or equipment.
  - b. If there are injuries, notify emergency personnel at \*911 (from shipyard phones) or Cell phone users dial (757) 380-2222 and Health and Safety at (757) 688-6967.
  - c. Call (757) 688-9888 to report the accident to the Facilities Service Desk. The Facilities Service Desk will notify the NNS Lifting and Handling Accident Response Team (L&H ART).
  - d. Notify your Supervisor.
  - e. Contact your NNS Contractor Representative.
  - f. Make sure that anyone involved in or has knowledge of the accident remains near the area.
  - g. Wait for the L&H ART to arrive. Follow the directions of the NNS L&H ART during accident investigations and ensures the Contractor Supervisor and NNS Contractor Representative is available to participate in the investigation.
  - h. Ensure each Contractor employee involved in the incident provides a written witness statement.
- 4. Following an unplanned, uncontrolled event, the contractor is required to perform a complete investigation of the accident and provide the NNS L&H ART with a written accident report detailing the following information:
  - a. Date – date accident occurred.
  - b. Time – time accident occurred (hour and minute).
  - c. Personnel Injury – “YES” if injury occurred, or “NO” if injury did not occur.



- d. Asset – equipment number or model number
  - e. Asset Description – Mobile Crane, Truck Crane, etc.
  - f. Asset Location – where the crane was working when the accident occurred.
  - g. Accident Cause – what caused the accident? Examples:
    - 1) Operator Error,
    - 2) Rigger Error,
    - 3) Design Error,
    - 4) Electrical/Mechanical failure, etc.
  - h. Brief Damage Description – Briefly describe what damage occurred to any equipment or property.
  - i. Employees Involved – provide name, employee NNS badge number, employee's role on the job, and if the employee was injured.
  - j. 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.
  - k. Injury Description – provide a description of the injury or injuries which resulted from the accident.
  - l. Immediate Corrective Actions – list the actions taken immediately following the accident, (i.e. securing the load, attending to the injured, notifying the Facilities Service Desk, etc.).
  - m. Investigation Findings – list pertinent information gathered from the investigation that are major facts contributing to the accident.
  - n. Apparent Cause – the specific act or action that caused the accident.
  - o. 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".
5. The NNS Lifting and Handling Accident Response Team will also conduct an investigation and will prepare a separate accident report for NNS use.

## **J. Surveillance**

1. The NNS Responsible Party must notify Department X36 of any contractor cranes working at Newport News.
2. Department X36 performs daily surveillance of contractor crane activities at NNS to ensure:
  - a. Contractor cranes are set up properly.
  - b. All handling equipment is in good condition and is being properly used.
  - c. All rigging is being performed in a safe manner.
3. In addition to surveillance, contractor crane operations may be audited at any time while on NNS property to ensure:





- a. The COC is properly completed and displayed on the crane.
  - b. The operator's daily checklist (ODCL) is properly completed and retained.
  - c. All installed safety devices are operational.
  - d. The operator understands how to report a crane accident.
  - e. Equipment OSHA inspections and tests are up-to-date.
4. 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 NNS for multiple deficiencies, or if there safety program is considered to be inadequate.

#### **K. Contractor Crane Variances**

1. The following are the requirements for acquiring a variance for a contractor to bypass or remove a crane's operational safety device(s) to perform pile driving or dredging operations.
2. The contractor must submit a request on their company letterhead to their NNS Contract Coordinator who shall forward the request to O48 CE&Q. The letter requesting shall contain the following:
  - a. The affected device(s) to be by-passed or removed
  - b. Specific operations that requires the variance
  - c. Identify the crane by model, serial number and capacity
  - d. Description of the crane's altered configuration
  - e. Signature of the company's representative
3. The CE&Q Engineering Supervisor will evaluate the request and, if approved, issue a memo to the Contractor Coordinator to post on the crane that contains the following information:
  - a. Address to requesting NNS Contractor Coordinator
  - b. Reference to the contractor's letter requesting the variance
  - c. Identification operation involved
  - d. Acceptable safety measures that are to be taken
  - e. Signature of issuing O48 Engineering Supervisor

#### **L. Other Requirements**

1. Contractors shall ensure their crane operators or riggers shall inspect handling equipment at the beginning of each shift and prior to each use.
2. Contractors shall also ensure their crane operators or riggers do not use handling equipment that does not meet the manufacture's inspection requirements for safe operation, and never exceed the manufacture's capacity ratings. Any equipment found defective shall immediately be red tagged and removed from service.





3. All rigging devices must bear the name of the manufacture, identify the working load limit (WLL) and be certified as to their capacity. Custom-fabricated devices (lifting beams, spreader bars, etc.) may be acceptable with proper PE stamp or proof testing as required by applicable standards. Capacities shall be marked and legible on all such devices.
4. The contractor shall insure signal persons used in construction work are qualified in accordance with 29 CFR 1926.1428.
5. Prior to moving the crane and during crane operations, contractors shall ensure their crane operators, riggers or signal persons use the crane's horn and rigger's whistle to warn personnel working in the area to stay clear of the crane's operation.
6. Contractors shall not allow loads to pass over personnel or allow personnel to work on or under a suspended load. Mobile cranes shall not travel without the hook being secured.



**Appendix A – Certificate of Compliance, NN9035**  
 Post this certificate on each crane. See forms viewer for latest revision

NN 9035 (REV 2)

**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 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:	



**Appendix B – Non-Operating Crane Pass, NN9239 (front)**

See forms viewer for latest revision

FRONT

NN 9239 (REV 1)

**NON-OPERATING CRANE ACCESS PASS**

***MUST BE CONSPICUOUSLY POSTED IN CAB WHILE ON NEWPORT NEWS PROPERTY***

- This certificate must be completed and signed by the driver of any truck entering Newport News Shipbuilding and Dry Dock Company ("Northrop Grumman Newport News") with an attached crane that will not be used for lifting and handling on NGNN property.
- By his or her signature, the driver of this vehicle certifies that he or she will not use the attached crane on NGNN property.
- If the crane will be used, a Certificate of Compliance must be completed and signed.

Company Name and Phone Number:	
Truck Manufacturer/Type/License Number:	
Driver's Name:	
Driver's Signature:	Date:

By his/her signature, the contractor also agrees to hold harmless, defend, and indemnify Newport News Shipbuilding and Dry Dock Company 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 Northrop Grumman Newport News or its employees.



**Appendix B – Non-Operating Crane Pass, NN9239 (back)**

See forms viewer for latest revision

BACK

**NON-OPERATING CRANE ACCESS PASS**

***MUST BE CONSPICUOUSLY POSTED IN CAB  
(OPPOSITE SIDE OUTWARD) WHILE ON NGNN PROPERTY***

- This certificate must be completed and signed by the driver of any truck entering Northrop Grumman Newport News (NGNN) with an attached crane that will not be used for lifting and handling on NGNN property.
- By his or her signature, the driver of this vehicle certifies that he or she will not use the attached crane on NGNN property.
- If the crane will be used, a Certificate of Compliance must be completed and signed.