

# PERISCOPE & FLIGHT DECK

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# Latest Highlight from Newport News Shipbuilding

## Latest Highlights

- Newport News Shipbuilding President Jennifer Boykin addresses the #TwoShipBuy legacy and our 133<sup>rd</sup> Anniversary. <http://yardnet/divisions/o29/docs/2019/Boykin-Message-Two-Ship-Buy.pdf>  
<https://newsroom.huntingtoningalls.com/releases/hii-awarded-block-contract-for-two-ford-class-aircraft-carriers>
- Enterprise Transformation: Integrated Digital Shipbuilding for RCOH  
[https://www.huntingtoningalls.com/wp-content/uploads/2019/03/nns\\_ids\\_rcoh25mar19.pdf](https://www.huntingtoningalls.com/wp-content/uploads/2019/03/nns_ids_rcoh25mar19.pdf)
- NNS Delivers First 3D-Printed Part to Navy  
<https://newsroom.huntingtoningalls.com/releases/first-transformational-3d-printed-part-delivered>
- Did you know that there is a webpage for general supplier information?  
[https://supplier.huntingtoningalls.com/sourcing/supplier\\_suggestions\\_box.html](https://supplier.huntingtoningalls.com/sourcing/supplier_suggestions_box.html)  
*Review the updated NNS acronyms and abbreviations list with instructions. View supplier FAQ on NNS business processes. Provide supplier feedback and suggestions. Use the supplier training modules and other available resources. It's all there for you!!*

**Cover Photo:** Submarine Indiana (SSN 789) departs NNS for Alpha Sea Trials. *Photo by John Whalen*

**Above Photo:** The Rock... "WE SHALL BUILD GOOD SHIPS HERE AT A PROFIT – IF WE CAN – AT A LOSS – IF WE MUST– BUT ALWAYS GOOD SHIPS" — Collis Potter Huntington. *Photo by Matt Hildreth*

# Engineering

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USS Ronald Reagan (CVN 76) with USS George Washington (CVN 73).  
Photo by U.S. NAVY

## ➤ NNS Shock Test Coded Note Changes

Perry Bell

Based on communication and agreement with NAVSEA on non-standard mounting fixtures IAW MIL-S-901D, Newport News Shipbuilding recently incorporated changes to shock test-related coded notes. The following changes were made to Coded Notes S2110 (Shock Test and Post Test Reports) and S2170 (Shock Test Procedure) to clarify shock procedure requirements:

Note: Changes/Additions are in **bold italic** print.

### S2110: Shock Test and Post Test Reports

The Shock Report Submittal section paragraph reads, “The supplier is required to notify the Newport News Shipbuilding sourcing representative with their quote no later than (1) month after placement of this purchase order (if a quote is not generated), which of the following means will be used to shock-qualify this item:”.



The Shock Report Submittal section paragraph is changed to read “The supplier is required **to specify to** the Newport News Shipbuilding sourcing representative with their quote no later than (1) month after placement of this purchase order (if a quote is not generated), which of the following means will be used to shock-qualify this item:”.

Under section A. If shock testing will be used to qualify these items, sub-paragraph A.3 reads as, “Only standard test fixtures shown in MIL-S-901D or non-standard fixtures will be accepted for the shock test.” Sub-paragraph A.3 is changed to read “Only standard test fixtures shown in MIL-S-901D or non-standard fixtures **approved by the Navy prior to testing** will be accepted for the shock test.

In addition, the following was added to this section to better define what is considered as a non-standard fixture:

***“The following will be considered as a non-standard fixture by NNS:***

***Any fixture used that is not described in MIL-S-901D and defined as a standard fixture; any alteration to the standard fixtures described in MIL-S-901D; the use of any intermediate plate, bracket or fixture between the standard fixture and the test item. Any of the above situations used separately or in combination are to be considered non-standard, until evaluated by NNS and the NAVSEA technical authority on a case by case basis.”***

### S2170: Shock Test Procedure

Change to requirement.

In section 1. Procedure Submittal, the requested time for submittal of the Shock Test Procedure for approval was changed from “no later than (2) months prior to test date” to “**no later than (6) months prior to test date.**”

Note: NNS currently requires that a procedure be sent in for all test (light, medium and heavy weight) for approval prior to testing. This change was added for NNS review of Supplier Shock Test procedure, and if needed, the approval of a non-standard fixture can be addressed prior to testing.

The above is provided as a notification of changes to existing Shock Test documentation and does not relieve the supplier’s responsibility to understand and comply with the full coded note and specification requirements of the purchase order.

# Welding & NDT

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## ➤ Maintenance of Records

Greg Pike & Sonny Price

Non-destructive and destructive testing is a large part of welding procedure qualification (PQR) testing. The test reports are essential to the review and approval of a PQR, and it is extremely important to hold onto all samples, pertinent information and test reports. Test labs may not return test specimens or RT films unless specifically requested by the qualifying activity, and it is the practice of most labs to dispose of them after a period of time if they are unclaimed. It is extremely important that these specimens and RT films be returned and/or kept until the PQR has been approved by the Navy. The Navy can ask for the samples or RT films to review, and, if these samples were discarded, the whole PQR may be rejected.

The Navy qualification document S9074-AQ-GIB-010/248 has a requirement to maintain this information in paragraph 4.6.2:

“The approved procedure qualification reports shall be retained by the activity as long as the procedure is applicable. Each qualifying activity shall retain the pertinent qualification test data, destructive test specimens and nondestructive test result reports including radiographs until written approval of the qualification data is obtained.”

Remember to maintain all pertinent information involving the qualification of a procedure until it has been approved by the Navy to help ensure a painless and quick approval time.



John F Kennedy, CVN 79 Carrier Construction, FAB. Photo by Chris Oxley

# Welding & NDT

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## ➤ Welding Quality Control System

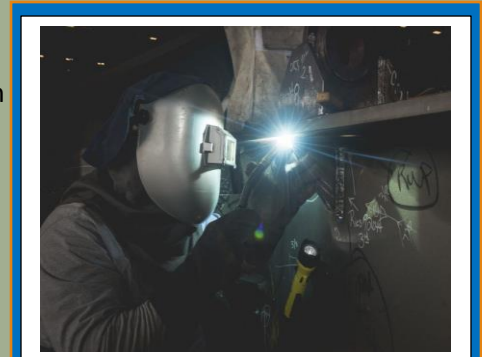
*Necessary for Navy Specification Compliance*

*Greg Pike & Sonny Price*

Welding is much more than a skill or an art. It involves the complex interplay of the four states of matter (solid, liquid, gas and plasma) as *governed* by the laws of physics. However, welding is *controlled* by appropriate standards and specifications. Common U.S. welding standards include the AWS D1.1 Structural Welding Code for Steel and the ASME Boiler and Pressure Vessel Code Section IX, which have many similarities to Navy fabrication specifications (such as *Tech Pub 1688*, *PPD 802-7094539*, *Tech Pub 278*) but many nuanced differences. Suppliers often fail to recognize that full compliance to Navy fabrication standards requires a welding quality control system. Obtaining approved welding procedures and qualifying welders is a substantial part of that quality control system, but it is not all that is required by the Navy specifications.

It can take several months to a year to implement a compliant Navy welding system depending on the expertise of personnel responsible for welding-related activities and the amount of time available to focus on this task. Because personnel with extensive Navy specification and welding knowledge are relatively rare, most suppliers must rely on less specifically qualified quality managers, NDT examiners, AWS certified welding inspectors, welding technicians or engineers. Inadequate planning for the learning curve is a serious risks to cost and schedule constraints. Each new welding procedure qualification is costly and takes at least three months from planning to approval, even when done efficiently. Other often unaccounted for parts of a Navy welding quality control system, the invoked fabrication specifications, include:

1. Quality manual delineation of responsibilities, procedures & material control
2. Filler metal procurement to MIL-Spec requirements
3. Verification of filler metal composition and mechanical properties at receipt inspection
4. Storage and control of filler metal in production
5. Surveillance of welders to ensure compliance to approved welding procedures
6. Preheat and interpass temperature controls (where, when & how)
7. Welding equipment calibration and maintenance
8. Welder quarterly qualification maintenance system & annual vision test
9. Welder workmanship training and certification
10. Post-weld heat treatment procedures and controls
11. Control and documentation of base metal weld repairs
12. Flow down of welding & NDT requirements to suppliers with appropriate oversight of their activities.



A welder joins steel together at the Steel Production Facility. Photo by Matt Hildreth

It is the responsibility of each supplier to understand and comply with all invoked requirements. Pay close attention to purchase order requirements and obtain the required documents for review well ahead of deadlines. Note that invoked welding-related requirements may come from multiple sources. Take appropriate NNS supplier training modules and request assistance through the NNS buyer or [Supplier Engineering Advocates](#). The use of NavWeld and NavNDT software products for documentation of Welding and NDT procedures, Welder Workmanship procedures, and Welder and Inspector Personnel Qualification records is highly recommended and is provided at no charge to NNS or EB suppliers. NavWeld and NavNDT are well proven to streamline development and approval of these required documents.



# Supplier Quality

## ➤ **Contractor Counterfeit Electronic Part Detection and Avoidance**

**Daniella Delgado**

Newport News Shipbuilding (NNS) wants to be sure your company is aware of our requirements concerning counterfeit electronic part detection and avoidance in accordance with DFARS 252.246-7007, *Contractor Counterfeit Electronic Part Detection and Avoidance System* and DFARS 252.246-7008, *Sources of Electronic Parts*. These requirements are invoked on your material by our purchase order (PO) appendix A as well as Coded Note number E1030.

An overview of the minimum requirements is provided; however, it does not relieve your responsibility to comply with the specific requirements stated in the DFARS.

Per DFARS 252.246-7007, the contractor shall establish and maintain an acceptable counterfeit electronic part detection and avoidance system. This system shall include risk-based policies and procedures that address, at a minimum, the following requirements:

1. The training of personnel.
2. The inspection and testing of electronic parts, including criteria for acceptance and rejection; tests and inspections shall be performed in accordance with accepted government- and industry-recognized techniques.
3. A process to abolish counterfeit parts proliferation.
4. A process for maintaining electronic part traceability in accordance with DFARS 252.246-7008, *Sources of Electronic Parts*.
5. The use of suppliers that are either the original manufacturer, the current design activity, or an authorized supplier. Suppliers shall be selected in accordance with DFARS 252.246-7008, *Sources of Electronic Parts*.
6. Reporting to NNS and quarantining of counterfeit and suspect counterfeit electronic parts.
7. Methods to detect suspect counterfeit parts and rapidly determine if they are counterfeit.
8. The system shall be designed, operated and maintained sufficiently to detect and avoid counterfeit electronic parts. A government- or industry-recognized standard may be used.
9. Flow down of counterfeit detection and avoidance requirements, including applicable detection and avoidance system criteria, to all subcontractors at all tiers of the supply chain, including subcontractors for commercial items and commercial-off-the-shelf (COTS) items, who are responsible for buying and selling electronic parts or assemblies containing electronic parts, or for performing authentication testing.
10. A process for keeping continually informed on current counterfeiting and information trends, and using such information and techniques for continuously upgrading internal processes.
11. A process for screening Government Industry Data Exchange Program (GIDEP) reports and other credible sources of counterfeiting information to avoid the purchase and use of counterfeit electronic parts.
12. The control of obsolete parts in order to maximize the availability and use of authentic, originally designed, and qualified electronic parts throughout the product's life cycle.

# Supplier Quality (cont'd)

Please note that upon NNS' request, the supplier shall provide documentation verifying that the electronic part(s) is traceable to the original manufacturer, current design activity or an authorized supplier.

Additionally, the supplier shall immediately notify NNS in writing by Vendor Quote (VQ) during the Request for Quote (RFQ), or Vendor Information Request (VIR) after PO placement, for the following:

1. If the supplier cannot purchase or acquire authentic electronic parts directly from the original manufacturer, current design activity, or an authorized supplier, or
2. If the supplier cannot maintain traceability of the supply chain back to the original manufacturer, current design activity or an authorized supplier.

## Additional Information:

DFARS information can be accessed using the hyperlinks provided below:

- ❖ [DFARS 252.246-7007, Contractor Counterfeit Electronic Part Detection and Avoidance System](#)
- ❖ [DFARS 252.246-7008, Sources of Electronic Parts](#)

This information can also be found on the HII-NNS Supplier webpage at

<https://supplier.huntingtoningalls.com/sourcing/index.html> under Purchase Order Resources.

The image shows a screenshot of the NNS Suppliers website. On the left is a navigation menu with 'Contract Flowdowns' highlighted. The main content area is titled 'Contract Flowdowns' and contains text about government contract requirements. Below this is a screenshot of the 'DPC Defense Pricing and Contracting' website, which features a document titled 'Defense Federal Acquisition Regulation Supplement (DFARS) and Procedures, Guidance, and Information (PGI)'. Arrows indicate the flow from the NNS website to the DPC website.

## References:

- Coded Note E1030, Revision CO06 dated November 1, 2018.
- Appendix A, DoD Contracts dated November 12, 2018.

# Supplier Engineering

## ➤ *In-Depth Supplier Assessment (ISA)*

*Craig Garland*

Starting in May 2019, the Supplier Engineering group at NNS will begin executing ISAs at key, critical suppliers. The purpose of an ISA is to thoroughly evaluate a supplier's personnel, equipment and manufacturing processes during work-in-process (WIP) to ensure that all invoked requirements are being satisfied. Similar to a Supplier Technical Assessment and Validation (STAV) event, which is typically performed pre-award of a Purchase Order, an ISA utilizes a team of subject matter experts and adds in-depth elements to validate supplier understanding and performance. Examples of in-depth elements that may be performed include the following: re-performing NDT on product, performing dimensional checks on product, testing Geometrical Dimensioning and Tolerancing (GD&T) knowledge, observing performance of welding, witnessing the performance of calibration, observing the performance of testing, etc. Due to the increased depth of this type of assessment, an ISA will typically be a three-day event and will also include assessments of sub-tiers performing critical processes, e.g. welding, NDT, assembly, honing, etc.



Worker adjusting his machine while working in the Ring Module Shop. Photo by Mat Hildreth