

**Thin Line Towed Array Handling System (TLTAHS)  
Shipset 4 Roller Boxes & Tow Point Sensor Assembly  
Contract # 1000051019 (June 2023)  
Subcontract Flowdowns\_Revision 0**

Any questions, please contact Subcontract Manager, Susan Caromano ([susan.caromano@lmco.com](mailto:susan.caromano@lmco.com)) or Subcontract Program Manager, Ken Peter ([kenneth.j.peter@lmco.com](mailto:kenneth.j.peter@lmco.com)).

These Subcontract Flowdowns listed below are **in addition to** the CorpDocs terms and conditions contained in your purchase order for this program.

**A. INCORPORATION OF FAR AND DFARS CLAUSES**

The FAR and DFARS clauses referenced below are incorporated herein by reference, with the same force and effect as if they were given in full text, and are applicable, including any notes following the clause citation, to this Contract. If the date or substance of any of the clauses listed below is different from the date or substance of the clause actually incorporated in the Prime Contract referenced by number herein, the date or substance of the clause incorporated by said Prime Contract shall apply instead. The Contracts Disputes Act shall have no application to this Contract, and nothing in this Contract grants SELLER a direct claim or cause of action against the U.S. Government. Any reference to a "Disputes" clause shall mean the "Disputes" clause of this Contract. SELLER shall include in each lower-tier subcontract the appropriate flow down clauses as required by the FAR and FAR Supplement clauses included in this Contract.

**B. GOVERNMENT SUBCONTRACT**

- (a) This Contract is entered into by the parties in support of a U.S. Government contract.
- (b) As used in the FAR and DFARS clauses referenced below and otherwise in this Contract:
  1. "Commercial Item" means a commercial item as defined in FAR 2.101.
  2. "Commercially available off-the-shelf (COTS) item" means a COTS item as defined in FAR 2.101
  3. "Contract" means this contract.
  4. "Contracting Officer" shall mean the Lockheed Martin Procurement Representative.
  5. "Contractor" and "Offeror" means the SELLER, which is the party identified on the face of the Contract with whom Lockheed Martin is contracting, acting as the immediate subcontractor to LOCKHEED MARTIN.
  6. "Prime Contract" means the contract between LOCKHEED MARTIN and the U.S. Government or between LOCKHEED MARTIN and its higher-tier contractor who has a contract with the U.S. Government.
  7. "Subcontract" means any contract placed by SELLER or lower-tier subcontractors under this Contract.

Additional FAR/DFARS applicable to this contract:

TYPE	CLAUSE NO.	Date	Title	Modification
DFARS	252.204-7000	AUG 2013	Disclosure of Information.	
DFARS	252.225-7015	JUN 2005	Restriction on Acquisition of Hand or Measuring Tools	
DFARS	252.225-7025	DEC 2009	Restriction on Acquisition of Forgings.	
DFARS	252.227-7013 ALT II	MAR 2011	Alternate II - Rights in Technical Data--Noncommercial Items.	
DFARS	252.227-7015 ALT I	DEC 2011	Alternate I - Technical Data-Commercial Items.	
DFARS	252.229-7006	DEC 2011	Value Added Tax Exclusion (United Kingdom)	

DFARS	252.243-7002	DEC 2012	Requests for Equitable Adjustment.	
DFARS	252.245-7004	MAR 2015	Reporting, Reutilization, and Disposal.	"Contracting Officer" means Lockheed Martin.

General Dynamics Electric Boat Contract Clauses:

Clause No.	Date	Title	Mandatory Text
5252.227-9113	Apr-15	GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM	<p>5. NAVSEA 5252.227-9113, GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (Apr 2015) (MODIFIED)            (Applies if this Purchase Order exceeds \$500,000.)</p> <p>a. The Subcontractor shall participate in the appropriate interchange of the Government-Industry Data Exchange Program (GIDEP) in accordance with GIDEP PUBLICATION 1 dated April 2008. Data entered is retained by the program and provided to qualified participants. Compliance with this requirement shall not relieve Subcontractor from complying with any other requirements of this Purchase Order.</p> <p>b. DELETED as not applicable.</p> <p>c. GIDEP materials, software and information are available without charge from: GIDEP Operations Center, P.O. Box 8000, Corona, California 92878-8000            (951) 898-3207 (Ph.)            (951) 898-3250 (Fax)            Internet: <a href="http://www.gidep.org">http://www.gidep.org</a>.</p>
1		RIGHTS TO TRANSITION TECHNICAL DATA (Modified)	<p>1. RIGHTS TO TRANSITION TECHNICAL DATA (Modified)            "In the event the United States Government requires that technical data generated in the performance of this Purchase Order be transitioned to another competent nuclear shipbuilder for any reason, the SELLER agrees to support the transition of the design to the new shipbuilder and agrees to negotiate in good faith with the BUYER, Government and new shipbuilder toward a Purchase Order modification for such support that minimizes costs associated with the transition of the design and/or manufacture related to this design.            The BUYER and the SELLER agree to negotiate in good faith with regard to the SELLERs support to the orderly transition of the design. To that end, the BUYER and the Government will neither expect nor demand that the SELLER, including subcontractors or suppliers at any tier, share proprietary information or proprietary business practices with the new shipbuilder and will not request that SELLER, including any subcontractors or suppliers at any tier, provide any information or technical data beyond what is required to effect an orderly transition of the design.            Notwithstanding this provision, the parties agree that this clause in no way restricts the BUYERs and /or Governments rights provided by statute or regulations, including but not limited to, 10 U.S.C. 2320, FAR, DFARs."</p>
9	May-93	ASSIGNMENT AND USE OF NATIONAL STOCK NUMBERS (NAVSEA)	<p>9. ASSIGNMENT AND USE OF NATIONAL STOCK NUMBERS (NAVSEA) (May 1993)            Modified</p> <p>a. To the extent that National Stock Numbers (NSNs) or preliminary NSNs are assigned by the Government for the identification of parts, pieces, items, subassemblies or assemblies to be furnished under this Purchase Order, the SELLER shall use such NSNs or preliminary NSNs in the preparation of provisioning lists, package labels, packing lists, shipping containers and shipping documents as required by applicable specifications, standards, or data item descriptions of this Purchase Order or as required by orders for spare and repair parts. When NSNs or preliminary NSNs are required to be assigned, SELLER shall request them in writing. The BUYER's cognizant Government Contract Administration Office shall be responsible for providing the SELLER such NSNs or preliminary NSNs which may be assigned and which are not already in the possession of the SELLER.</p>

11	NOV-1996	EXTENSION OF COMMERCIAL WARRANTY (NAVSEA) (Modified)	<p>11. EXTENSION OF COMMERCIAL WARRANTY (NAVSEA) (Modified)  "(This clause applies where an item to be provided is subject to a standard commercial warranty.)  The SELLER shall extend to the BUYER and the U.S. Government and their successors in interest the full coverage of any standard commercial warranty normally offered in a similar commercial sale, provided that such warranty is available at no additional cost to the BUYER, BUYERs Customer and/or U.S. Government. The SELLER shall provide a copy of the standard commercial warranty with the item(s) to be delivered.</p> <p>The standard commercial warranty period shall begin upon the final acceptance of the applicable material or software. Acceptance of the standard commercial warranty does not waive the BUYERs and successors rights under the Inspection clauses of this Purchase Order, nor does it limit their rights with regard to other terms and conditions of the contract. In the event of a conflict, the terms and conditions of this Purchase Order shall take precedence over the standard commercial warranty.</p> <p>Notwithstanding any provisions herein to the contrary, these warranties shall inure to the benefit of BUYERs successor in interest, BUYERs Customer, and/or the U.S. Government."</p>
12		HEALTH AND SAFETY	<p>12. HEALTH AND SAFETY  The Contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of employees and of members of the public and to minimize danger from all hazards to life and property. The Contractor shall comply with all health, safety, and fire protection regulations and requirements (including reporting requirements) of the Government. In the event the Contractor fails to comply with such regulations or requirements of the Government, the BUYER may, without prejudice to any other legal or contractual rights of the BUYER, issue an order stopping all or any part of the work being performed under this contract; thereafter an order for resumption of work will be issued upon the determination by the BUYER that the deficiency has been corrected. The Contractor shall make no claims for an extension of the delivery date or for damages or any other compensation by reason of or in connection with such work stoppage, unless the contractor can demonstrate that he was in compliance with such regulations or requirements of the Government.</p>
15		DATA RIGHTS AND ACCESS	<p>15. DATA RIGHTS AND ACCESS  Notwithstanding any other provisions in this subcontract, the Parties agree that all Technical Data and Computer Software (including designs, consisting of design disclosure data products, drawings, specifications, notes, other works and tactical software) that are developed in the performance of this sub contract with Government funds (Technical Design Data and Tactical Software) may be used by the United States Government for Government purpose, either domestically or abroad.</p>
19		SPECIAL PROGRAM CERTIFICATIONS	<p>19. SPECIAL PROGRAM CERTIFICATIONS  SELLER agrees to complete and submit in writing to the BUYER, on a timely basis, requested certifications deemed necessary and required by the BUYER. These certifications include but are not limited to:</p> <ol style="list-style-type: none"> <li>1. Supplier Registration Form;</li> <li>2. Certification and Representation Regarding Foreign Ownership, Control or Influence (FOCI Cert) form; and</li> <li>3. Supplier Quality Questionnaire (when requested).</li> </ol> <p>4.The FOCI Cert form and any attachments shall be updated and re-submitted to BUYER every twelve (12) months.  Additional certifications may be required. SELLER agrees to notify BUYER, in writing, of changes to previously submitted certifications (such as change in ownership, place of performance, etc.) and agrees to complete new certifications as requested by BUYER.</p>
21		CONTRACTOR USE OF COMMERCIAL COMPUTER SOFTWARE, INCLUDING OPEN SOURCE SOFTWARE	<p>21. CONTRACTOR USE OF COMMERCIAL COMPUTER SOFTWARE, INCLUDING OPEN SOURCE SOFTWARE  The SELLER shall make reasonable attempts to avoid the use of open source software that is subject to a viral license. For purposes of this clause, a viral license is one that requires users to make any modifications to the open source software, or any software that the user combines with the open source software, freely available in source code form. Should the SELLER, after exploring alternatives, require the use of open source software subject to a viral license, the SELLER shall request and obtain NAVSEA approval via the BUYER.</p>

\* Exception: EB Standard Clauses listed below are not applicable to Commercial Off the Shelf (COTS) or MIL-SPEC procurements.

Please contact your Procurement Representative -or- the Subcontracts Team (listed at the top of this document) with any questions on applicability.

General Dynamics Electric Boat Standard Clauses can be found at: <https://www.gdeb.com/suppliers/stdcls/>  
Standard Clause text description for the clauses below applicable to this contract are included in this document.

<b>EB Standard Clauses</b>	<b>Rev</b>	<b>Title</b>
60-33	2	Special Requirements for NiCu, NiCuAl
60-67	26	Nondestructive Test Procedure Approval
60-77	22	Welding and Brazing Procedure Approval
76-22L	1	NDT IAW COMPONENT DRAWING AND/OR SPECIFICATION

# GENERAL DYNAMICS

## Electric Boat

### Purchase Order Standard Clauses

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#### New Search

Number 60-33

Revision 2

Title SPECIAL REQUIREMENTS FOR NiCu, NiCuAl

Clause AND CuNi ALLOY PARTS

The sulfur content of the gas and oil fuels used in firing furnaces for forging, extruding, or other hot working processes and for heat treatment of NiCu (NO4400), NiCuAl (NO5500), CuNi (C70600 and C71500), and other nickel or nickel base alloys shall be limited as follows:

1. Gas: 30 Grains per 100 cu. ft. maximum
2. Oil: 0.5% by weight maximum

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Web Server Questions and Comments: [webmaster@gdeb.com](mailto:webmaster@gdeb.com)

General EB Questions and Comments: [info@gdeb.com](mailto:info@gdeb.com)

General Supplier Questions and Comments: [suppliers@gdeb.com](mailto:suppliers@gdeb.com)

# GENERAL DYNAMICS

## Electric Boat

### Purchase Order Standard Clauses

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#### New Search

Number 60-67

Revision 26

Title NONDESTRUCTIVE TEST PROCEDURE APPRVL

Clause NONDESTRUCTIVE TEST AND ALLOY IDENTIFICATION PROCEDURE APPROVAL

THE REQUIREMENTS CONTAINED HEREIN SHALL APPLY TO THE SELLERS AND ANY SUB-TIER SUPPLIERS NONDESTRUCTIVE TEST NDT PROCEDURES USED IN FULFILLING THE REQUIREMENTS OF THIS PURCHASE ORDER. THIS STANDARD CLAUSE IS ALSO APPLICABLE TO ALLOY IDENTIFICATION PROCEDURES.

#### A. GENERAL REQUIREMENTS FOR NDT PROCEDURES

1. ALL RADIOGRAPHY, MAGNETIC PARTICLE, LIQUID PENETRANT, ULTRASONIC, EDDY CURRENT, AND VISUAL TESTING MUST BE PERFORMED IN ACCORDANCE WITH WRITTEN PROCEDURES APPROVED BY THE BUYER.

VISUAL TESTING, AS IT PERTAINS TO THIS STANDARD CLAUSE, IS ONLY APPLICABLE TO THE INSPECTION OF COMPLETED FABRICATION WELDMENTS.

2. ALL PROCEDURES SHALL BE UNIQUELY IDENTIFIED BY A PROCEDURE NUMBER, WITH A REVISION AND DATE.

3. PROCEDURES SHOULD BE SUBMITTED FOR BUYER APPROVAL WITHIN THIRTY (30) DAYS OF THE SELLERS RECEIPT OF THE ORDER. PROCEDURES THAT WILL BE USED DURING THE MANUFACTURE OF THE PURCHASED ITEM/S SHALL BE APPROVED PRIOR TO THE PERFORMANCE OF ANY SUCH INSPECTIONS. NDT PROCEDURES THAT WERE PREVIOUSLY USED TO INSPECT AND CERTIFY BASE MATERIAL PROCURED FROM A SUB-TIER SOURCE SHALL BE SUBMITTED FOR APPROVAL PRIOR TO ANY USAGE OF THAT MATERIAL.

4. ALL PROCEDURE CHANGES OR REVISIONS SHALL BE RESUBMITTED TO THE BUYER FOR WRITTEN APPROVAL PRIOR TO THE PERFORMANCE OF ANY TESTING. MATERIAL INSPECTED IN ACCORDANCE WITH UNAPPROVED CHANGES OR REVISIONS SHALL BE SUBJECT TO REJECTION.

#### B. NDT PERFORMANCE SPECIFICATIONS

1. WHERE REFERENCE IS MADE TO THE FOLLOWING PERFORMANCE SPECIFICATIONS, THE EFFECTIVE ISSUES SHALL BE AS FOLLOWS

MIL-STD-271 SHALL BE NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271, REVISION F MAY ONLY BE USED AS PERMITTED IN PARAGRAPH B.2 BELOW.

NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 SHALL BE DATED 30 APRIL 1997 WITH NOTICE 1 DATED 16 FEBRUARY 1999 AND AS MODIFIED BY EB SPEC 3900.

NAVSEA 0900-LP-003-8000, NAVSEA 0900-LP-003-9000, AND NAVSEA 0900-LP-006-3010 SHALL BE MIL-STD-2035.

MIL-STD-2035 SHALL BE REVISION A.

NAVSEA 250-1500-1 SHALL BE REVISION 17.  
MIL-STD-2132 SHALL BE REVISION D.  
NSTR-99 SHALL BE REVISION 4.

IF AN ELECTRIC BOAT COMPONENT SPECIFICATION NAVSEA APPROVED INVOKES SPECIFICATION REVISIONS THAT CONFLICT WITH THE ABOVE, THE COMPONENT SPECIFICATION SHALL TAKE PRECEDENCE.

2. THE USE OF PROCEDURES PREVIOUSLY APPROVED TO THE REQUIREMENTS OF MIL-STD-271, REVISION F IS STILL PERMITTED, PROVIDED THE GUIDELINES OF SECTION I ARE MET. HOWEVER, ANY SUBMITTAL OF NEW OR REVISED PROCEDURES SHALL COMPLY WITH NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 EVEN IF MIL-STD-271 IS INVOKED.  
C. VENDOR PROCEDURE APPROVAL REQUEST, VPAR.

1. ALL SELLER AND SUB-TIER SUPPLIER NDT PROCEDURES SHALL BE FORWARDED TO THE BUYER VIA A PROPERLY COMPLETED VENDOR PROCEDURE APPROVAL REQUEST VPAR, EB FORM 84-01-2974. EACH PROCEDURE SHALL BE SUBMITTED SEPARATELY. THE SELLER SHALL SEND THE VPAR AND A COPY OF THE PROCEDURE TO THE BUYER DESIGNATED ON THIS PURCHASE ORDER. THE VPAR SHALL BE DISPOSITIONED BY THE BUYERS DESIGNATED REPRESENTATIVE AND SHALL SERVE AS THE SELLERS PROCESS APPROVAL, WHEN APPROVED.

2. TO EXPEDITE PROCEDURE APPROVAL, THE SELLER SHOULD ASSURE THAT THE VPAR FORM IS COMPLETED PROPERLY AND ALL PERTINENT INFORMATION IS INCLUDED. PARTICULAR ATTENTION SHOULD BE APPLIED TO THE FOLLOWING SECTIONS

A. BLOCK 10. THIS BLOCK IS INTENDED TO IDENTIFY THE APPLICABLE DRAWING. WITHOUT THIS INFORMATION, THE BUYER CANNOT VERIFY THE APPLICATION FOR WHICH THE VPAR IS BEING SUBMITTED. IF THE SAME TECHNIQUE WILL BE APPLIED TO NUMEROUS DRAWINGS, VARIOUS SHOULD BE ENTERED IN THIS BLOCK AND AN EXPLANATION ENTERED IN BLOCK 13. IF DRAWINGS ARE NOT APPLICABLE TO THIS ORDER, N/A SHOULD BE ENTERED.

B. BLOCK 11. THIS BLOCK IS INTENDED TO IDENTIFY THE PIECE MARK ON THE DRAWING IDENTIFIED IN BLOCK 10 FOR WHICH THE PROCEDURE APPROVAL IS BEING REQUESTED. IF A PIECE MARK IS NOT APPLICABLE, ENTER N/A. WHERE THE PURCHASE ORDER REFERENCES A BUYERS PART NUMBER FOR RAW MATERIAL, THAT NUMBER SHOULD BE ENTERED.

C. BLOCK 12. THIS BLOCK SHOULD REFERENCE THE PERFORMANCE SPECIFICATION AND ACCEPTANCE SPECIFICATION FOR WHICH THE PROCEDURE APPROVAL IS BEING REQUESTED.  
FOR EXAMPLE, T9074-AS-GIB-010/271 AND MIL-T-16420K(1), OR MIL-STD-2132DAND MIL-F-23509F(1), ETC.

D. BLOCK 13. THIS BLOCK IS INTENDED TO PROVIDE INFORMATION TO THE BUYER PERTAINING TO THE SPECIFIC PROCEDURE FOR WHICH APPROVAL IS BEING REQUESTED, E.G., PROCEDURE NUMBER, REVISION, DATE, AND ANY ATTACHMENTS/ADDENDA/SUPPLEMENTS, ETC.

THIS BLOCK SHOULD ALSO STATE THE APPLICATIONS FOR WHICH APPROVAL IS BEING REQUESTED AND THE APPLICABLE ACCEPTANCE CRITERIA E.G., PT OF NAVSEA TECHNICAL PUBLICATION S9074-AR-GIB-010/278, P-1 WELDS WITH ACCEPTANCE TO MIL-STD-2035A, SECTION 7.2, CLASS 1.

IF CLARIFICATION TO BLOCKS 10 AND 11 IS REQUIRED, THIS BLOCK SHOULD BE UTILIZED E.G., PIPING DETAILS ARE BEING FABRICATED TO VARIOUS DRAWINGS AND VARIOUS PIECE MARKS. ALL WELDING IS IN ACCORDANCE WITH NAVSEA TECHNICAL PUBLICATION S9074-AR-GIB-010/278, CLASS P-1.

IF PROCEDURE APPROVAL IS BEING REQUESTED FOR MORE THAN ONE APPLICATION, EACH APPLICATION AND ACCEPTANCE SPECIFICATION SHOULD BE CLEARLY STATED E.G., PT OF NUCIAL FASTENERS AND WELD REPAIRS TO CUNI CASTINGS.

3. WHEN RADIOGRAPHY IS REQUIRED, THE SELLER IS RESPONSIBLE FOR THE REVIEW AND APPROVAL OF ALL PRODUCTION RADIOGRAPHS. IN ADDITION, THE SELLER SHALL FORWARD TO THE BUYER ALL PRODUCTION RADIOGRAPHS VIA A PROPERLY COMPLETED VPAR. THE BUYER MUST APPROVE ALL RADIOGRAPHS, INCLUDING ALL REPAIR CYCLES, PRIOR TO SHIPMENT OF HARDWARE UNLESS THE REQUIREMENT IS SPECIFICALLY WAIVED IN WRITING BY THE BUYER.

D. GENERAL REQUIREMENTS FOR PROCEDURE APPROVAL

1. THE BUYER REVIEWS SELLER AND SUB-TIER SUPPLIER NDT PROCEDURES TO ASSURE COMPLIANCE WITH APPLICABLE PERFORMANCE DOCUMENTS AND ACCEPTANCE CRITERIA SPECIFICATIONS. IN GENERAL, ANY PORTION OF A PERFORMANCE DOCUMENT OR ACCEPTANCE SPECIFICATION THAT CONTAINS THE WORD SHALL MUST BE INCLUDED IN THE VENDOR PROCEDURE.

2. ALL NDT PROCEDURES SHALL BE SIGNED FOR BY THE PERFORMING ACTIVITYS COGNIZANT LEVEL III TEST EXAMINER DENOTING APPROVAL.

3. ALL NDT PROCEDURES, WITH THE EXCEPTION OF RADIOGRAPHY, MUST CONTAIN DETAILED ACCEPTANCE CRITERIA AS REQUIRED BY THIS PURCHASE ORDER AND APPLICABLE SPECIFICATIONS AND DRAWINGS. ACCEPTANCE CRITERIA MAY BE CONTAINED IN SEPARATE ATTACHMENTS/ADDENDA/SUPPLEMENTS TO THE BASE PERFORMANCE PROCEDURE. ACCEPTANCE CRITERIA SHALL BE DETAILED ENOUGH TO BE SELF-STANDING, E.G., NOT JUST REFERRING TO THE PARAGRAPH BUT RATHER CITING THE WORDING, AS OFTEN AS IS PRACTICAL. NOTED EXCEPTIONS ARE

SAE J122/123.

FF-S-86

E. ADDITIONAL REQUIREMENTS FOR NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 PROCEDURES

1. WHENEVER NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 IS INVOKED, THE FOLLOWING MUST BE INCLUDED IN ALL NDT PROCEDURES

A STATEMENT IS REQUIRED THAT THE PROCEDURE IS IN ACCORDANCE WITH THE REQUIREMENTS OF NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 TO MEET THE REQUIREMENT OF PARAGRAPH 1.7.1.

A STATEMENT IS REQUIRED THAT PERSONNEL CERTIFICATIONS MUST BE IN ACCORDANCE WITH SNT-TC-1A, AS A MINIMUM REQUIREMENT, EXCEPT AS MODIFIED BY SECTION 1 OF NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 TO MEET THE REQUIREMENT OF PARAGRAPH 1.6.

A STATEMENT IS REQUIRED THAT ACCEPTANCE INSPECTIONS SHALL BE PERFORMED ON AN ITEM IN THE FINAL SURFACE AND HEAT-TREATED CONDITION, UNLESS OTHERWISE SPECIFIED, TO MEET THE REQUIREMENT OF PARAGRAPH 1.4. HOWEVER, IT IS ALSO RECOGNIZED THAT UT INSPECTION IS TYPICALLY PERFORMED WHEN THE PART HAS A SIMPLE GEOMETRY I.E. PRIOR TO FINAL MACHINING PER PARAGRAPH 6.3.

2. WHENEVER NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 IS INVOKED, THE MINIMUM PROCEDURAL ELEMENTS ARE CONTAINED IN EACH NDT SECTION RT - PARAGRAPH 3.3.2, MT - PARAGRAPH 4.3.1.2, PT - PARAGRAPH 5.4.2, UT - PARAGRAPH 6.5.2, ET - PARAGRAPH 7.3.2, PARAGRAPH VT - 8.3, RESPECTIVELY. ADDITIONALLY, THE FOLLOWING INFORMATION MUST ALSO BE CONTAINED IN ALL NDT PROCEDURES



MAGNETIC PARTICLE TESTING  
LIGHTING REQUIREMENTS.  
FINAL CLEANING.

LIQUID PENETRANT TESTING  
MATERIAL TO BE TESTED; E.G., WELDS, WELD REPAIRS, CASTINGS, ETC.  
SURFACE PREPARATION.  
LIGHTING REQUIREMENTS.  
ALL PENETRANTS, EMULSIFIERS, REMOVERS, AND DEVELOPERS SHALL BE INCLUDED ON THE QUALIFIED PRODUCTS LIST OF THE LATEST REVISION OF AMS 2644.

ULTRASONIC TESTING  
THE INSTRUMENT MODEL/S ALLOWED FOR THE INSPECTION.  
EQUIPMENT QUALIFICATION METHOD OR REFERENCE TO A QUALIFICATION PROCEDURE.  
DESCRIPTION OF THE REFERENCE CALIBRATION STANDARD.

VISUAL TESTING  
TYPE OF WELDS OR SURFACES TO BE INSPECTED.  
NOTE UNLESS OTHERWISE STATED IN THE ORDERING DATA OR DOCUMENT/S INVOKED, THIS REQUIREMENT CAN BE SATISFIED BY SIMPLY OFFERING AN OPENING STATEMENT TO THE EFFECT THAT THIS PROCEDURE SPECIFIES THE REQUIREMENTS FOR PERFORMING THE VISUAL INSPECTION OF COMPLETED FABRICATION WELDMENTS IN ACCORDANCE WITH ENTER APPLICABLE SPECIFICATION.

#### F. ELECTRIC BOAT APPROVAL

1. PROVIDED THE METHODOLOGY AND ACCEPTANCE CRITERIA CONTAINED IN AN NDT PROCEDURE ARE ACCEPTABLE, THE BUYERS APPROVAL WILL BE GRANTED FOR THE SPECIFIC APPLICATION/S REQUESTED BY THE SELLER. FOR EXAMPLE, IF A PENETRANT PROCEDURE IS SUBMITTED FOR THE INSPECTION OF MIL-S-1222H NICU BOLTS, THE BUYERS EVALUATION SHOULD STATE THIS PROCEDURE HAS BEEN REVIEWED AND APPROVED FOR THE PENETRANT TESTING LIST THE TYPE AND METHOD OF MIL-S-1222H FASTENERS IN ACCORDANCE WITH NAVSEA TECHNICAL PUBLICATION T9074-AS-GIB-010/271 WITH ACCEPTANCE TO SAE J123C. IF THE VENDOR PROCEDURE ALSO CONTAINS ACCEPTANCE CRITERIA FOR OTHER APPLICATIONS SUCH AS FORGINGS OR CASTINGS, BUT APPROVAL IS NOT REQUESTED IN BLOCK 13 OF THE VPAR AND NOT REQUIRED BY THIS PURCHASE ORDER, PROCEDURE APPROVAL FOR THOSE OTHER APPLICATIONS WILL NOT BE GRANTED. THE SELLER MUST THEN RESUBMIT THIS PROCEDURE TO OBTAIN BUYER APPROVAL PRIOR TO USAGE ON ANY OTHER APPLICATIONS.

2. IN SELECTED INSTANCES, THE BUYER MAY APPROVE A PROCEDURE WITH COMMENTS. IN SUCH INSTANCES, THE PERFORMING ACTIVITIES INSPECTION PERSONNEL MUST BE MADE AWARE OF THESE COMMENTS AND ALL TESTING SHALL BE PERFORMED TO INSTRUCTIONS INCORPORATING THESE COMMENTS. IN ADDITION, THE SELLER OR SUB-TIER SUPPLIER MUST INCORPORATE THEM AND RESUBMIT A REVISED PROCEDURE FOR BUYER APPROVAL PRIOR TO FUTURE USE.

#### G. ALLOY IDENTIFICATION PROCEDURE REVIEW

1. ALL PROCEDURES SHALL BE UNIQUELY IDENTIFIED BY A PROCEDURE NUMBER, WITH A REVISION AND DATE.

2. THE ALLOY IDENTITY PROCEDURE SUBMITTED FOR APPROVAL SHALL CONTAIN THE FOLLOWING AS A MINIMUM

A. SCOPE - THE PROCEDURE SHALL INCLUDE A LIST OF ALL THE GENERIC MATERIALS MANUFACTURED OR USED IN THE SELLERS OR SUPPLIERS SHOP AND THE TESTING INSTRUMENT/S USED TO SEPARATE EACH.

B. EQUIPMENT DESCRIPTION - THE PROCEDURE SHALL STATE THE TESTING INSTRUMENT BRAND NAME, MODEL NUMBER AND PRINCIPLE OF OPERATION.

C. EQUIPMENT SETUP - THE PROCEDURE SHALL LIST THE STEPS NECESSARY FOR EQUIPMENT SETUP AND PREPARATION FOR USE.

D. INSTRUMENT CHECK OR CALIBRATION - THE PROCEDURE SHALL PROVIDE MEANS FOR DETERMINING THAT THE TESTING INSTRUMENT IS FUNCTIONING PROPERLY. IF A CALIBRATION STANDARD OF KNOWN VALUE IS USED, AN ACCEPTANCE CRITERIA FOR PROPER CALIBRATION SHALL ALSO BE GIVEN, AND SHALL AS A MINIMUM BE PRIOR TO AND AT THE CONCLUSION OF TESTING, AND AFTER ANY CHANGE IN OPERATOR, EQUIPMENT OR PERIODS OF INACTIVITY. APPROPRIATE DOCUMENTATION OF THE CALIBRATION STANDARD COMPOSITION SHALL BE MAINTAINED ON FILE BY THE SUPPLIER.

E. TESTING OF MATERIAL - THE PROCEDURE SHALL INCLUDE DETAILS OF TESTING TECHNIQUE INCLUDING INSTRUMENT SETTINGS, POSITIONING OF INSTRUMENT PROBES AND PRECAUTIONS CONCERNING CONDITION OF MATERIAL TO BE TESTED SUCH AS FREE FROM OIL, GREASE, OXIDE, SCALE AND FILM AS APPROPRIATE.

F. ACCEPTANCE CRITERIA - THE PROCEDURE SHALL PROVIDE ACCEPTANCE CRITERIA FOR EACH OF THE GENERIC MATERIALS MANUFACTURED OR USED IN THE SUPPLIERS SHOP.

G. OVERLAP - THE PROCEDURE SHALL ADDRESS THE QUESTION OF OVERLAP OF READINGS AMONG DIFFERENT GENERIC MATERIALS. IT SHALL CONTAIN ADEQUATE INSTRUCTIONS ON SUPPLEMENTAL TESTS USE OF MAGNET, SPECTROGRAPHIC ANALYSIS, ETC., TO DISTINGUISH BETWEEN SUCH MATERIALS AND TO PROVIDE POSITIVE IDENTIFICATION WHEN OVERLAP OCCURS.

3. GENERIC MATERIALS SHALL INCLUDE BUT ARE NOT LIMITED TO THOSE LISTED BELOW. OTHER MATERIALS ENCOUNTERED IN WORK WHICH ARE NOT LISTED HERE ALSO REQUIRE THE GENERIC IDENTITY CHECK.

NICUAL-CHROMIUM-IRON BASE ALLOYS INCONELS AND HASTELLOYS  
 K-MONEL  
 COPPER-NICUAL ALLOYS CUPRO-NICKELS  
 NICKEL-COPPER ALLOYS MONELS  
 AUSTENITIC STAINLESS STEELS AISI 300 SERIES  
 MARTENSITIC & FERRITIC STAINLESS STEELS AISI 400 SERIES & 17-4 PH  
 CLASS  
 CARBON AND ALLOY STEELS  
 TITANIUM ALLOYS  
 COBALT BASE ALLOYS STELLITES  
 NICKEL-CHROMIUM-BORON ALLOYS COLMONOYS  
 COPPER  
 BRONZE  
 NICKEL-ALUMINUM BRONZE  
 BRASS  
 SILVER BRAZING MATERIAL

4. MATERIAL NOT MEETING THE ACCEPTANCE CRITERIA IN THE APPROVED ALLOY IDENTITY TESTING PROCEDURE SHALL BE REJECTED.

## H. RESUBMITTAL OF SELLER AND SUB-TIER SUPPLIER PROCEDURES

1. THE SELLER OR SUB-TIER SUPPLIER MAY BE REQUIRED TO RESUBMIT PROCEDURES DUE TO DISAPPROVAL, CHANGES IN APPLICATION OR ACCEPTANCE CRITERIA, OR PERIODIC MODIFICATIONS TO PERFORMANCE AND ACCEPTANCE SPECIFICATIONS. RESUBMITTALS SHALL BE TIMELY AND IN ALL CASES, BUYERS APPROVAL OF THE RESUBMITTED PROCEDURE IS REQUIRED PRIOR TO USE. IN SUCH INSTANCES, THE SELLER SHOULD AGAIN UTILIZE A VPAR TO EXPLAIN WHY THE PROCEDURE IS BEING RESUBMITTED, LETTER NUMBER AND DATE OF PREVIOUS SUBMITTAL AND IDENTIFICATION OF HOW THE PROCEDURE HAS BEEN MODIFIED, IF AT ALL. THIS INFORMATION WILL ASSIST IN THE EVALUATION OF THE PROCEDURE AND EXPEDITE APPROVAL.

2. RADIOGRAPHIC PROCEDURES REVISED TO DENOTE WHEN X-RAY MACHINE TUBES ARE CHANGED AND THE NEW FOCAL SPOT IS EQUAL TO OR LESS THAN THE ORIGINAL OR FOR NEW ISOTOPE SOURCES WHERE THE PHYSICAL SIZE IS EQUAL TO OR LESS THAN THAT OF THE LARGEST SOURCE, OF SAME TYPE, ORIGINALLY QUALIFIED DO NOT REQUIRE RESUBMITTAL FOR APPROVAL.

## I. PROCEDURES PREVIOUSLY APPROVED

1. FOR SELLERS THAT RECEIVE MULTIPLE OR REPETITIVE ORDERS THAT APPLY TO SIMILAR ITEMS, IT IS NOT ALWAYS NECESSARY TO SUBMIT A VPAR FOR EVERY APPLICATION. PREVIOUSLY APPROVED PROCEDURES MAY BE USED PROVIDED THE FOLLOWING CONDITIONS ARE SATISFIED

A. THE PROCEDURE, INCLUDING REVISION, AND ANY ASSOCIATED ATTACHMENTS/ADDENDA/SUPPLEMENTS, IS THE SAME AS WAS PREVIOUSLY APPROVED BY THE BUYER.

B. THE PROCEDURE COVERS THE SAME TYPE OF PROCESS, PROCESS SPECIFICATION REVISION, MATERIAL SPECIFICATION REVISION, APPLICATION AND ACCEPTANCE CRITERIA. IN ADDITION, THE CONFIGURATION MUST BE THE SAME, I.E., THE PROPOSED NDT METHOD CAN TECHNICALLY BE APPLIED WITH QUALITY RESULTS AS DETERMINED BY THE PERFORMING ACTIVITY'S COGNIZANT LEVEL III TEST EXAMINER WITH RESPECT TO SIZE AND SHAPE.

2. NDT PROCEDURES PREVIOUSLY APPROVED TO THE REQUIREMENTS OF MIL-STD-271, REVISION F MAY CONTINUE TO BE USED PROVIDED ALL THE REQUIREMENTS SET FORTH ABOVE ARE FOLLOWED.

3. WHERE THE SELLER ELECTS TO USE PROCEDURES PREVIOUSLY APPROVED, A COPY OF THE BUYER'S PREVIOUSLY APPROVED ELECTRIC BOAT VPAR OR EQUIVALENT NEWPORT NEWS SHIPBUILDING VPAR AND APPLICABLE NEWPORT NEWS SHIPBUILDING APPROVAL LETTER MEETING ALL THESE CONDITIONS SHALL BE FURNISHED WITH THE SHIPMENT.

IF THE NAME AND/OR ADDRESS OF THE PERFORMING ACTIVITY LISTED ON THE CERTIFICATION OF ACCOMPLISHMENT IS DIFFERENT THAN THE NAME OF THE ACTIVITY LISTED ON THE APPLICABLE PROCEDURE FOR THE PREVIOUSLY APPROVED VPAR, THE SUPPLIER SHALL PROVIDE ONE OF THE FOLLOWING:

- I. THIS CHANGE IS ADMINISTRATIVE IN NATURE,
- II. THIS IS NOT CONSIDERED TO BE A TRANSFER OF PROCEDURES AS GOVERNED BY TECH PUB 271, PARAGRAPH 1.7.4, AND
- III. THE PERFORMING ACTIVITY IS OPERATING UNDER THE SAME QUALITY ASSURANCE MANAGEMENT AND USING THE SAME QUALITY ASSURANCE PLAN AS WAS APPLICABLE TO THE ACTIVITY LISTED ON THE APPLICABLE PROCEDURE FOR THE PREVIOUSLY APPROVED VPAR, AS REQUIRED BY TECH PUB 271, PARAGRAPH 1.5.3.

4. PROCEDURES PREVIOUSLY APPROVED BY EITHER ELECTRIC BOAT OR NEWPORT NEWS SHIPBUILDING ARE ACCEPTED BY BOTH SHIPBUILDERS FOR VIRGINIA CLASS PROCUREMENTS ONLY.

J. TEST REPORTS FOR PERFORMANCE OF NDT

1. WHEN SPECIFIED, REPORTS SHOWING THE RESULTS OF EACH TEST PERFORMED WITHIN THE SPECIFIED NONDESTRUCTIVE TEST METHOD ARE REQUIRED. GUIDELINES FOR PROPER TEST REPORT REQUIREMENTS ARE AS DETAILED IN APPLICABLE SPECIFICATIONS. WHERE GUIDANCE IS NOT PROVIDED, THE SELLER SHALL RECORD THE BELOW LISTED INFORMATION, AS A MINIMUM.

A. THE NDT METHOD/S USED.

B. DESCRIPTION OR UNIQUE IDENTIFICATION OF THE ITEM INSPECTED.

C. PROCEDURE IDENTIFICATION.

D. THE PERFORMING ACTIVITY, WHETHER IT BE THE SELLER, A SUB-TIER SUPPLIER OR A TEST LAB.

E. QUANTITY INSPECTED.

F. ACCEPTANCE STANDARD USED.

G. QUANTITY ACCEPTED/REJECTED.

H. DATE OF INITIAL INSPECTION AND INSPECTOR IDENTIFICATION.

2. IN ADDITION, THE SELLER SHALL ATTACH A COPY OF THE BUYERS VPAR THAT APPROVED THE PROCEDURE TO THE TEST REPORT.

3. TEST REPORTS AND/OR OTHER VERIFICATION OF CONFORMANCE DOCUMENTS SHALL BE SIGNED AND DATED BY THE SELLERS AUTHORIZED REPRESENTATIVE.

4. EVIDENCE OF ALL TESTS AND INSPECTIONS PERFORMED, AS REQUIRED BY THIS PURCHASE ORDER OR SPECIFICATION, MUST BE MAINTAINED BY THE SELLER. HOWEVER, RECORDS REQUIRED TO BE SUBMITTED BY THIS PURCHASE ORDER OR SPECIFICATION SHALL BE FORWARDED WITH EACH SHIPMENT.

TEST REPORTS SHALL BE ATTACHED TO THE PACKING LIST. WHERE MORE THAN ONE CONTAINER OR PACKAGE IS INCLUDED IN THE SHIPMENT, THE TEST REPORTS SHALL BE ATTACHED SECURELY TO OR PLACED IN ONE CONTAINER OR PACKAGE AND CLEARLY IDENTIFIED ON THE OUTSIDE.

FOR PURCHASE ORDERS THAT ORIGINATE FROM NEWPORT NEWS SHIPBUILDING, REFER TO STANDARD CLAUSE 38-4 FOR SUBMITTAL OF ALL UNAPPROVED PURCHASE ORDER SOFTWARE DELIVERABLES.

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Web Server Questions and Comments: [webmaster@gdeb.com](mailto:webmaster@gdeb.com)

General EB Questions and Comments: [info@gdeb.com](mailto:info@gdeb.com)

General Supplier Questions and Comments: [suppliers@gdeb.com](mailto:suppliers@gdeb.com)

# GENERAL DYNAMICS

## Electric Boat

### Purchase Order Standard Clauses

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#### New Search

Number 60-77

Revision 22

Title WELDING AND BRAZING PROCEDURE APPROVAL

Clause NUMBER: 60-77  
 TITLE: WELDING AND BRAZING PROCEDURE APPROVAL  
 SCOPE: REQUIREMENTS FOR MILITARY AND COMMERCIAL WELDING AND BRAZING  
 ACRONYMS:  
 ACN (ADVANCE CHANGE NOTICE)  
 BPS (BRAZING PROCEDURE SPECIFICATION OR BRAZING PROCEDURE)  
 NDT (NON-DESTRUCTIVE TESTING)  
 PQR (PROCEDURE QUALIFICATION RECORD)  
 RT (RADIOGRAPHIC TEST)  
 SPARS VES (SHIPBUILDING PARTNERS AND SUPPLIERS VIRTUAL ENTERPRISE  
 SERVER)  
 VIR (VENDOR INFORMATION REQUEST)  
 VPAR (VENDOR PROCEDURE APPROVAL REQUEST)  
 VT (VISUAL TEST)  
 WPQ (WELDER PERFORMANCE QUALIFICATION RECORDS)  
 WPS (WELDING PROCEDURE SPECIFICATION OR WELD PROCEDURE)

CLAUSE: THE REQUIREMENTS CONTAINED HEREIN APPLY TO PROCEDURES USED IN FULFILLING THE REQUIREMENTS OF THIS PURCHASE ORDER. THE REQUIREMENTS ARE APPLICABLE TO BOTH SUPPLIERS AND THEIR SUBCONTRACTOR(S).

EFFECTIVITY: THIS STANDARD CLAUSE REVISION IS APPLICABLE TO PURCHASE ORDERS INITIATED FROM 05/31/2019 FORWARD. ANY PURCHASE ORDERS DATED PRIOR TO 05/31/2019 MAY UTILIZE REVISION 20 OF THIS STANDARD CLAUSE.

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SECTION XIV - USE OF AWS NAVSEA SWPS-N PROCEDURES  
SECTION XV - COMPLIANCE REQUIREMENT STATEMENT

I) GENERAL REQUIREMENTS:

A) WRITTEN PROCEDURES SHALL BE APPROVED BY THE BUYER PRIOR TO PERFORMANCE OF WELDING OR BRAZING AND SHALL BE SUBMITTED FOR APPROVAL WITHIN THIRTY (30) DAYS OF SUPPLIER'S RECEIPT OF A PURCHASE ORDER. THE PRIME SUPPLIER WILL BE RESPONSIBLE FOR SUBMITTING FOR APPROVAL THEIR SUBCONTRACTOR'S WRITTEN PROCEDURES AND ONCE APPROVED BY EB, THE APPROVAL DOCUMENT SHALL BE FLOWED DOWN TO THE SUBCONTRACTOR.

B) FOR CASES WHERE THE SUPPLIER IS NOT ABLE TO SUBMIT PROCEDURES WITHIN THE THIRTY DAY REQUIREMENT, THE SUPPLIER IS REQUIRED TO NOTIFY THE BUYER AND PROVIDE A SCHEDULE FOR WHEN THE PROCEDURES WILL BE SUBMITTED FOR APPROVAL.

C) FOR PURCHASE ORDERS THAT ORIGINATE FROM HUNTINGTON INGALLS INDUSTRIES NEWPORT NEWS SHIPBUILDING (HII-NNS) SEE SECTION XI OF THIS STANDARD CLAUSE.

D) \*\*WARNING \*\* MATERIAL WELDED OR BRAZED WITH UNAPPROVED PROCEDURES OR UNAPPROVED PROCEDURE REVISIONS IS SUBJECT TO REJECTION AT THE SUPPLIERS EXPENSE. SUPPLIERS MUST WORK TO THE MOST RECENT APPROVED REVISION OF THEIR PROCEDURE LISTED IN THE CORRECTIVE ACTION BLOCK FOR ELECTRONIC VPARS OR BLOCK 13 OF THE PAPER VERSION. EACH VPAR APPROVAL FOR A NEW PROCEDURE REVISION SUPERSEDES THE PREVIOUS REVISION APPROVAL.

E) \*\* WARNING\*\* PROCEDURES SHALL BE SUBMITTED TO THE BUYER ELECTRONICALLY THROUGH THE SPARS VPAR SYSTEM OR A PROPERLY COMPLETED VENDOR PROCEDURE APPROVAL REQUEST (VPAR), (EB FORM 84-01-2974) WHEN REQUIRED BY SECTION I.G. SUBMITTAL SHALL INCLUDE AT A MINIMUM ITEMS IN SECTION I.K BELOW.

F) COMMERCIAL WELDING AND BRAZING:

1) WHEN THIS STANDARD CLAUSE IS INVOKED ON APPLICATIONS PERMITTING COMMERCIAL WELDING AND BRAZING, WPS AND BPS SHALL BE SUBMITTED ON A VPAR IN ACCORDANCE WITH THE REQUIREMENTS OF THIS CLAUSE.

G) WPS OR BPS AND SUPPORTING PQR(S) SHALL BE SUBMITTED WHEN ANY OF THE FOLLOWING APPLIES:

1) IT IS A NEW PROCEDURE OR A PROCEDURE WHICH HAS NOT BEEN PREVIOUSLY APPROVED.

2) IT IS A PREVIOUSLY APPROVED PROCEDURE THAT IS REVISED. SUBMITTAL IS REQUIRED FOR ADMINISTRATIVE ONLY REVISION.

3) IT IS A PROCEDURE PREVIOUSLY APPROVED SPECIFICALLY FOR A SINGLE PURCHASE ORDER OR SINGLE APPLICATION, AS DEFINED IN THE CORRECTIVE ACTION BLOCK FOR ELECTRONIC VPARS (OR BLOCK 13 OF THE PAPER VPAR), THAT WILL BE USED ON A DIFFERENT PURCHASE ORDER OR APPLICATION.

4) IF THE PROCEDURE APPROVAL IS ONLY FOR A DRAWING NUMBER, IF A REVISION IS MADE TO THAT DRAWING AFFECTING THE WELDING OR BRAZING ON THAT DRAWING.

5) FOR EB-PURCHASED MATERIAL, IT IS A PROCEDURE PREVIOUSLY APPROVED BY AN ORGANIZATION OTHER THAN EB BUT NOT BY EB. FOR NNS-PURCHASED

MATERIAL, IT IS A PROCEDURE APPROVED BY AN ORGANIZATION OTHER THAN NNS BUT NOT BY NNS.

I. TO EXPEDITE APPROVAL, THE SUBMITTAL SHALL CONTAIN THE SUPPORTING QUALIFICATION DATA AND COPIES OF ALL APPROVAL DOCUMENTATION FROM OTHER ORGANIZATIONS. FOR EXAMPLE: A NAVSEA LETTER OF APPROVAL, AN AUTHORIZED REPRESENTATIVE LETTER OF APPROVAL, NNS FORM 9014.

H) PROCEDURES ARE NOT REQUIRED TO BE SUBMITTED FOR THE FOLLOWING CASES:

1) PROCEDURES WHICH HAVE PREVIOUSLY RECEIVED THE BUYER'S WRITTEN APPROVAL ON A VPAR NEED NOT BE RESUBMITTED PROVIDED THAT THE PROCEDURE, INCLUDING REVISION AND DATE, IS THE SAME AS THAT LISTED ON THE PREVIOUSLY APPROVED VPAR AND THE APPROVAL IS NOT FOR SPECIFIC APPLICATIONS AS LISTED IN SECTION II.B

2) WHEN SPECIFICALLY EXEMPTED BY NAVSEA APPROVED SPECIFICATIONS, DRAWINGS; AS ALLOWED BY FABRICATION DOCUMENTS; OR AS OTHERWISE APPROVED BY EB.

I) FOR HARDWARE INVOLVING WELDING/BRAZING, WHERE THE WPS/BPS REQUIRES APPROVAL, THE SUPPLIER SHALL ATTACH A PHOTOCOPY OF THE APPROVED VPAR FOR EACH WPS/BPS USED TO THE FOLLOWING:

1) THE PACKING SLIP

2) THE WELD OR BRAZE RECORDS, WHEN RECORDS ARE REQUIRED

J) ONLY ONE WELDING/BRAZING PROCEDURE (INCLUDING SUPPORTING QUALIFICATION DATA, TEST REPORTS AND PREVIOUS APPROVAL INFORMATION) PER VPAR SHALL BE SUBMITTED. RECORDS FOR MORE THAN ONE SUPPORTING QUALIFICATION TEST MAY BE SUBMITTED WITH A VPAR, AS NECESSARY, IN SUPPORT OF A SINGLE WELDING/BRAZING PROCEDURE.

K) VPAR DETAIL REQUIREMENTS: VPAR SUBMITTAL FOR INITIAL PQR/WPS/BPS APPROVAL SHALL INCLUDE THE FOLLOWING DOCUMENTS (SEE SECTIONS V, VI AND VII FOR DETAILED REQUIREMENTS FOR WPS, BPS AND PQR).

1) WPS OR BPS

2) SUPPORTING PQR(S). FOR PQRS WHICH HAVE NOT BEEN PREVIOUSLY APPROVED, ALSO INCLUDE:

I. SUPPORTING TEST LAB REPORTS

II. MATERIAL CERTIFICATIONS FOR DUAL-CERTIFIED FILLER MATERIAL

III. APPROVED RT VPAR (SEE SECTION VI.D.4), FOR QUALIFICATIONS REQUIRING RT.

3) NAVSEA OR NAVSEA AUTHORIZED REPRESENTATIVE APPROVAL DOCUMENTATION FOR PREVIOUSLY APPROVED PQR(S), WHEN APPLICABLE.

L) IN CASES WHERE WELDING OR BRAZING PROCEDURES CONSIST OF A MAIN OR GENERAL PROCEDURE AND A SUPPLEMENTAL TECHNIQUE SHEET, AND ESSENTIAL WELDING/BRAZING PROCEDURE ELEMENTS ARE CONTAINED IN BOTH DOCUMENTS, BOTH DOCUMENTS SHALL BE SUBMITTED. NOTE THAT IN SOME CASES, A WELDING OR BRAZING PROCEDURE IS CALLED A SCHEDULE; SCHEDULES SHALL BE SUBMITTED FOR REVIEW AND APPROVAL AS WELL. GENERAL PROCEDURES WRITTEN TO BOTH MILITARY AND COMMERCIAL SPECIFICATIONS WILL NOT BE ACCEPTED.

II) VPAR APPROVAL LIMITATIONS:

A) WPS OR BPS WRITTEN IN ACCORDANCE WITH NAVSEA TECHNICAL PUBLICATIONS (I.E. NAVSEA T9074-AD-GIB-010/1688 OR S9074-AR-GIB-010/278) OR MILITARY STANDARDS (I.E. MIL-STD-278) ARE TYPICALLY APPROVED FOR GENERAL USE WITHOUT RESTRICTION.

B) APPROVAL OF WPS OR BPS FOR NON-CRITICAL APPLICATIONS (AS DEFINED BY PARAGRAPH 4.2 OF SEAWOLF PPD 802-6335694 AND/OR PARAGRAPH 4.2.1.1 OF MIL-STD-278 OR NAVSEA S9074-AR-GIB-010/278), MINOR STRUCTURE (AS DEFINED IN PARAGRAPH 3.33.3.1 OF NAVSEA T9074-AD-GIB-010/1688) OR TO COMMERCIAL OR OTHER SPECIFICATIONS, IS LIMITED TO ONE OF THE FOLLOWING:

- 1) A SINGLE PURCHASE ORDER.
- 2) SINGLE APPLICATION. SINGLE APPLICATION APPROVAL IS BASED ON DRAWING NUMBER AND PART NUMBER.

C) LIMITED APPROVAL MAY ALSO BE DUE TO NAVSEA APPROVAL OF SPECIAL WELD PROCEDURES WHERE SPECIFIC APPLICATION APPROVAL IS REQUIRED BY MIL-STD-278 / NAVSEA S9074-AR-GIB-010/278, PARAGRAPH 6.2.

D) EACH VPAR APPROVAL IS ISSUED FOR A SPECIFIC SINGLE WPS OR BPS REVISION AND DATE.

- 1) SUPPLIERS SHALL WORK TO THE MOST RECENT APPROVED REVISION OF THEIR PROCEDURE LISTED IN THE CORRECTIVE ACTION BLOCK FOR ELECTRONIC VPARS (OR BLOCK 13 OF THE PAPER VPAR) ONCE APPROVAL IS GRANTED.

- 2) EACH NEW VPAR APPROVAL FOR A NEW PROCEDURE REVISION SUPERSEDES THE PREVIOUS REVISION APPROVAL.

I. THE USE OF EARLIER REVISIONS OF A PROCEDURE IS PROHIBITED UNLESS USE IS SPECIFICALLY APPROVED. REQUESTS TO DO SO SHALL BE SUBMITTED ON A VIR.

II. THE VIR SUBMITTAL SHALL IDENTIFY WHAT APPLICATION THE EARLIER REVISION OF THE PROCEDURE WILL BE USED ON.

III. THE VIR SHALL PROVIDE JUSTIFICATION FOR USING THAT REVISION OF THE PROCEDURE.

- 3) IF A VPAR APPROVAL IS RESCINDED, USE OF A PREVIOUSLY APPROVED REVISION OF THE PROCEDURE IS NOT AUTHORIZED.

III) FABRICATION AND QUALIFICATION DOCUMENT APPLICABILITY:

A) WELDING AND BRAZING SHALL BE PERFORMED IN ACCORDANCE WITH ELECTRIC BOAT SPECIFICATION 5341 (EB-5341).

B) THE EFFECTIVE DOCUMENT AND REVISION, INCLUDING MODIFICATIONS THERTO, OF WELDING AND BRAZING SPECIFICATIONS AND STANDARDS SHALL BE AS SPECIFIED BY EB-5341.

C) THE APPLICABLE FABRICATION AND QUALIFICATION SPECIFICATION AND REVISION LEVEL SHALL BE EXPLICITLY LISTED IN FULL ON THE REQUIRED DOCUMENTATION (WELDING OR BRAZING PROCEDURES, PROCEDURE QUALIFICATION RECORDS, AND CERTIFICATIONS) E.G. WRITING "NAVSEA S9074-AQ-GIB-010/248" AS "248" IS NOT ACCEPTABLE.

IV) USE OF UNLISTED BASE OR FILLER MATERIALS:



A) WELDING OR BRAZING OF UNLISTED BASE MATERIALS OR WITH UNLISTED FILLER MATERIAL/ELECTRODE IS PROHIBITED EXCEPT AS SPECIFIED BELOW:

- 1) WELDING: ALL BASE METALS (SPECIFICATION, TYPE AND CLASS OR GRADE) THAT ARE NOT LISTED S-GROUP NUMBERS IN NAVSEA S9074-AQ-GIB-010/248 TABLE I OR NAVSEA S9074-AR-GIB-010/278 TABLE I MUST HAVE NAVSEA OR NAVSEA AUTHORIZED REPRESENTATIVE APPROVAL PRIOR TO WELDING.
- 2) BRAZING: ALL BASE METALS (SPECIFICATION, TYPE AND CLASS OR GRADE) THAT ARE NOT LISTED P-GROUP NUMBERS IN NAVSEA 0900-LP-001-7000 TABLE 4-4 OR NAVSEA S9074-AQ-GIB-010/248 TABLE XIII MUST HAVE NAVSEA OR NAVSEA AUTHORIZED REPRESENTATIVE APPROVAL PRIOR TO BRAZING.
- 3) FILLER MATERIAL/ELECTRODE SPECIFICATION AND TYPE: ALL FILLER MATERIALS/ELECTRODES THAT ARE NOT LISTED A-/F-GROUP NUMBERS IN NAVSEA S9074-AR-GIB-010/278 TABLE II, NAVSEA T9074-AD-GIB-010/1688 TABLES 10-1, 10-2, 10-3, 10-4, NAVSEA S9074-AQ-GIB-010/248 TABLE II OR TABLE XIV, OR NAVSEA 0900-LP-001-7000 TABLE 4-2 MUST HAVE NAVSEA OR NAVSEA AUTHORIZED REPRESENTATIVE APPROVAL PRIOR TO WELDING OR BRAZING.

B) IF THE SUPPLIER DOES NOT HAVE AN APPROVAL FOR A BASE OR FILLER MATERIAL/ELECTRODE, THE SUPPLIER MUST REQUEST APPROVAL VIA A VIR. THE VIR MUST PROVIDE THE MATERIAL SPECIFICATION, TYPE, CONDITION, AND APPLICATION WHERE THE MATERIAL IS BEING USED.

C) IN ADDITION, IF A LISTED MATERIAL SPECIFICATION IS FOUND TO BE OBSOLETE AND POINTS TO A REPLACEMENT SPECIFICATION, THE REPLACEMENT SPECIFICATION SHALL NOT BE USED UNLESS THAT MATERIAL SPECIFICATION IS APPROVED AS AN S-/P-/A-/F-GROUP MATERIAL.

D) THE NAVWELD SOFTWARE, DISCUSSED IN SECTION VIII, CONTAINS A LISTING OF MATERIALS APPROVED TO BE LISTED, BY GROUP NUMBERS.

NOTE: APPROVAL TO CLASSIFY A MATERIAL TO AN S-, P-, A-, OR F-GROUP DOES NOT CONSTITUTE APPROVAL TO USE THAT MATERIAL FOR A PARTICULAR APPLICATION OR TO AUTHORIZE SUBSTITUTION OF A MATERIAL ON A DRAWING.

V) PREPARATION OF WELDING OR BRAZING PROCEDURES:

A) WPS, BPS AND SUPPORTING PQRS SHALL BE WRITTEN IN ACCORDANCE WITH THE APPLICABLE NAVSEA TECHNICAL PUBLICATION OR APPLICABLE COMMERCIAL REQUIREMENTS AND REQUIREMENTS IN THIS PURCHASE ORDER.

B) VPAR WELD PROCEDURE INSTRUCTION BROCHURE OFFERS GUIDANCE FOR PREPARATION AND CAN BE FOUND BY GOING TO THE EB WEB SITE [HTTP://WWW.GDEB.COM](http://www.gdeb.com). THESE INSTRUCTIONS OFFER A GUIDE TO PREPARING AND PRESENTING THE QUALIFICATION AND WELDING PROCEDURE INFORMATION SUCH THAT IT WILL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS LISTED IN EB-5341. IN ADDITION, USE OF NAVWELD (SEE SECTION VIII) WILL GREATLY AID SUPPLIERS IN PREPARING AND PRESENTING QUALIFICATION AND WELDING PROCEDURE INFORMATION.

C) WPS, BPS AND PQR SHALL BE WRITTEN USING ONE OF THE FOLLOWING FORMATS:

- 1) PREFERRED: NAVWELD SOFTWARE. IT IS RECOMMENDED THAT BOTH NEW SUPPLIERS AND, FOR STANDARDIZATION PURPOSES, EXISTING SUPPLIERS USE THE NAVWELD SYSTEM IN PREPARING PROCEDURES AND QUALIFICATION DATA. ADDITIONAL INFORMATION IS PRESENTED IN SECTION VIII.

2) SUPPLIER'S OWN EXISTING FORMAT.

VI) WPS, BPS AND PQR REQUIREMENTS:

A) THE FOLLOWING SECTION PROVIDES CLARIFICATION OF SPECIFICATION REQUIREMENTS AS WELL AS ADDITIONAL REQUIREMENTS INVOKED BY THE BUYER.

B) ALL NEW WELDING PROCEDURES SHALL BE LIMITED TO ONE FABRICATION SPECIFICATION. WELDING PROCEDURES WRITTEN AND QUALIFIED TO MULTIPLE SPECIFICATIONS WILL NOT BE ACCEPTED. THE EXCEPTION TO THIS IS WHEN NAVSEA S9074-AR-GIB-010/278 AND NAVSEA T9074-AD-GIB-010/1688 PROCEDURES HAVE BEEN QUALIFIED TO NAVSEA S9074-AQ-GIB-010/248.

C) PROCEDURES WRITTEN TO BOTH MILITARY AND COMMERCIAL SPECIFICATIONS WILL NOT BE ACCEPTED.

D) SPECIFIC REQUIREMENTS FOR NEW PQRS:

1) EACH PQR (TEST ASSEMBLY AND WRITTEN DOCUMENTS) SHALL BE IDENTIFIED BY A UNIQUE PQR NUMBER. WHERE MULTIPLE TEST ASSEMBLIES ARE PERFORMED, THEY SHALL BE UNIQUELY IDENTIFIED.

I. THE UNIQUE PQR NUMBER SHALL BE DIFFERENT FROM THE WELDING OR BRAZING PROCEDURE NUMBER OR ANOTHER PQR NUMBER, E.G. WPS-123 AND PQR-123 WOULD BE ACCEPTABLE.

II. THE UNIQUE PQR NUMBER SHALL APPEAR ON ALL QUALIFICATION SUPPORTING DOCUMENTS, INCLUDING TEST LAB REPORTS.

III. THE UNIQUE PQR NUMBER REQUIREMENT APPLIES TO BOTH MILITARY AND COMMERCIAL WELDING AND BRAZING.

IV. REPLACEMENT PQR FOR A FAILED PQR SHALL HAVE ITS OWN UNIQUE NUMBER.

2) THE UNIQUE PQR NUMBER(S) SHALL BE LISTED ON THE WPS OR BPS WHICH IT SUPPORTS.

3) BOTH THE PQR AND THE TEST LAB REPORTS SHALL IDENTIFY THE FOLLOWING AS APPLICABLE OR BE SUBJECT TO REJECTION:

I. THE NDT PERFORMANCE STANDARD AND REVISION (E.G. NAVSEA T9074-AS-GIB-010/271, ACN 1)

II. NDT ACCEPTANCE STANDARD AND REVISION (E.G. MIL-STD-2035, REVISION A, CLASS 1)

III. DESTRUCTIVE TEST PERFORMANCE STANDARD AND REVISION (E.G. AWS B4.0, 2007)

IV. DESTRUCTIVE TEST ACCEPTANCE CRITERIA (STANDARD, PARAGRAPH, AND SUBPARAGRAPH IF APPLICABLE) (E.G. MACROS IN ACCORDANCE WITH (IAW) NAVSEA S9074-AQ-GIB-010/248, PARAGRAPH 4.5.2.6.B)

V. BEND TESTS SHALL REPORT BEND ANGLE, THICKNESS, AND BEND RADIUS, AS A MINIMUM OF INFORMATION

VI. ALL CHANGES TO LAB REPORTS SHALL BE ACCOMPLISHED BY THE COGNIZANT LAB, WITHOUT EXCEPTIONS.

4) RADIOGRAPHY (RT) OF PQRS FOR WPS IN ACCORDANCE WITH NAVSEA TECHNICAL PUBLICATIONS OR MILITARY STANDARDS, FOR WHICH RT INSPECTION OF TEST ASSEMBLY FINAL WELD IS REQUIRED AND WHERE THE PQR HAS NOT BEEN PREVIOUSLY APPROVED, SHALL REQUIRE SUBMITTAL OF THE RT FILM AND RT DATA FOR REVIEW AND APPROVAL ON A VPAR SEPARATE FROM THE WELDING PROCEDURE VPAR IN ACCORDANCE WITH THE FOLLOWING:

I. THE RT VPAR SHALL BE APPROVED PRIOR TO SUBMITTAL OF THE WPS VPAR.

II. PQR TEST ASSEMBLIES TO BE QUALIFIED WITH POST WELD HEAT TREATMENT (PWHT) SHALL RECEIVE PWHT AFTER WELDING AND PRIOR TO FINAL RT INSPECTION, WHEN THE PWHT INVOLVES QUENCHING IN A LIQUID MEDIUM.

III. VISUAL INSPECTION (VT) SHALL BE CONDUCTED AND FOUND SATISFACTORY BEFORE PERFORMING FINAL RT OF THE TEST ASSEMBLY.

IV. THE RT FILM WITH ASSOCIATED SET-UP (TECHNIQUE) AND READER'S SHEET SHALL BE SUBMITTED ON THE VPAR.

V. THE RT VPAR SHALL CONTAIN THE FOLLOWING ITEMS IN THE VPAR DESCRIPTION OF DOCUMENT BLOCK FOR ELECTRONIC VPARS (OR BLOCK 13 FOR THE PAPER VPAR) OR BE SUBJECT TO REJECTION:

A. THE STATEMENT: "RT FILM AND DATA FOR WELDING PROCEDURE QUALIFICATION"

B. PQR NUMBER

C. WELDING PROCEDURE NUMBER

D. THE STATEMENT: "VISUAL INSPECTION (VT) WAS CONDUCTED AND THE WELD FOUND TO BE SATISFACTORY."

E. RT PROCEDURE IDENTIFIED BY: PERFORMING ACTIVITY, NUMBER, REVISION, AND DATE (AND ANY ADDENDA)

F. JOINT TYPE I.E. BUTT, SINGLE BEVEL, DOUBLE BEVEL, BACKING BAR, ETC.

G. STATEMENT IF BACKING BAR WAS REMOVED OR LEFT ON DURING SHOOTING

H. BASE MATERIAL TYPE

I. FILLER MATERIAL TYPE

J. JOINT THICKNESS

K. JOINT FORM (PLATE/ PIPE)

L. IF THE TEST ASSEMBLY RECEIVED PWHT, THE RT VPAR SHALL IDENTIFY IF PWHT WAS PERFORMED BEFORE OR AFTER RT.

VI. THE RT PERFORMANCE STANDARD AND ACCEPTANCE CRITERIA SHALL BE LISTED IN THE CORRECTIVE ACTION BLOCK FOR ELECTRONIC VPARS (OR BLOCK 13 OF THE PAPER VPAR) PER A. OR B. BELOW:

A. FOR NAVSEA TECHNICAL PUBLICATION QUALIFICATIONS THE RT PERFORMANCE STANDARD SHALL BE NAVSEA T9074-AS-GIB-010/271; ACCEPTANCE TO MIL-STD-2035A CLASS I.

B. FOR MIL-STD AND PPD QUALIFICATIONS THE PERFORMANCE STANDARD SHALL BE NAVSEA T9074-AS-GIB-010/271 OR MIL-STD-271F; ACCEPTANCE TO MIL-STD-2035A CLASS I.

VII. THE RT FILM AND ASSOCIATED DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO SECTIONING THE QUALIFICATION TEST ASSEMBLY FOR DESTRUCTIVE TESTING. DOING SO MAY AVOID HAVING TO WELD ADDITIONAL TEST ASSEMBLIES SHOULD THE FILM RESULTS BE DISPUTED.

VIII. A COPY OF THE VPAR THAT APPROVED THE RT PROCEDURE SHALL BE ATTACHED TO THE PQR RT VPAR SUBMITTAL. SEE SECTION VI.D.5.

5) PRIOR TO RT OF A PQR TEST ASSEMBLY, ANY ACTIVITY PERFORMING THE RT EVALUATION OF WELDING PQR TEST ASSEMBLIES SHALL HAVE THEIR RT PROCEDURE APPROVED BY THE BUYERS NON-DESTRUCTIVE TEST (NDT) ENGINEERING. THE SUBMITTAL OF A VPAR FOR AN RT PROCEDURE FOR APPROVAL OR EXTENDING A PREVIOUS APPROVAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD CLAUSE 60-67.

I. FOR PQRS IN ACCORDANCE WITH NAVSEA TECHNICAL PUBLICATIONS, RT PROCEDURES SHALL BE WRITTEN TO NAVSEA T9074-AS-GIB-010/271

II. FOR PQRS IN ACCORDANCE WITH MILITARY STANDARDS, RT PROCEDURES SHALL BE WRITTEN TO NAVSEA T9074-AS-GIB-010/271 OR MIL-STD-271F.

6) RADIOGRAPHIC FILMS SUBMITTED FOR REVIEW SHOULD CONTAIN, AT A

MINIMUM, 2 FILMS PER VIEW IN THE CASE THAT AN ARTIFACT IS FOUND WHICH IMPAIRS FILM INTERPRETATION.

VII) WPS, BPS, PQR REVISION CONTROL:

A) WHEN REVISIONS ARE REQUIRED TO CORRECT DISCREPANCIES TO WPS, BPS AND/OR PQR/SUPPORTING DOCUMENTATION, THE FOLLOWING SHALL APPLY:

- 1) WPS OR BPS THAT HAVE BEEN PREVIOUSLY ISSUED FOR PRODUCTION SHALL REQUIRE BOTH A CHANGE IN THE REVISION LEVEL AND THE DATE. PROCEDURES THAT HAVE NOT BEEN PREVIOUSLY ISSUED FOR PRODUCTION NEED NOT CHANGE THE REVISION LEVEL, BUT SHALL HAVE THE DATE CHANGED.
- 2) PQR/SUPPORTING DOCUMENTS SHALL LIST THE ORIGINAL DATE THAT THE TEST ASSEMBLY WAS WELDED/BRAZED. THE CORRECTIONS SHALL IDENTIFY WHAT ITEMS WERE CORRECTED AND THE DATE. PQR DATE AND A NEW CERTIFICATION DATE SHALL BE APPLIED WHEN CORRECTIONS ARE MADE.

VIII) USE OF NAVWELD FOR WELDING/BRAZING PROCEDURES AND QUALIFICATION RECORDS

A) NAVWELD ([HTTP://WWW.NAVWELD.COM](http://www.navweld.com)) IS A SECURE, INTERNET-BASED APPLICATION THAT ASSISTS THE USER IN DEVELOPING PQRS, WPS, BPS, AND WELDER PERFORMANCE QUALIFICATION RECORDS (WPQ) THAT MEET THE REQUIREMENTS OF VARIOUS U.S. NAVY SPECIFICATIONS.

B) ALTHOUGH USE OF NAVWELD IS NOT A PURCHASE ORDER REQUIREMENT, GDEB AND HII-NNS STRONGLY RECOMMEND SUPPLIERS UTILIZE THIS SOFTWARE, AS IT HAS BEEN SHOWN TO DRAMATICALLY REDUCE THE NUMBER OF ERRORS IN SUPPLIER SUBMITTALS. THIS SIGNIFICANTLY REDUCES APPROVAL CYCLE TIME. THE CREATION OF DETAILED WELDING/BRAZING PROCEDURES OR QUALIFICATION RECORDS REQUIRING CUSTOMER APPROVAL IS AN AREA WHERE SUPPLIERS, ESPECIALLY THOSE WITH LITTLE OR NO EXPERIENCE, HAVE DIFFICULTIES OBTAINING APPROVAL. DELAYS IN RECEIVING APPROVAL CAN RESULT IN DELAYS TO THE START OF FABRICATION OR HARDWARE DELIVERY BY THE SUPPLIER.

C) THERE IS NO COST TO THE SUPPLIERS OF GDEB OR HII-NNS FOR USE OF NAVWELD. THIS INCLUDES BOTH DIRECT SUPPLIERS AND SUB-TIER SUPPLIERS.

D) TO OBTAIN ACCESS TO NAVWELD, CONTACT TROY PASKELL AT [PASKELL@WELDQC.COM](mailto:PASKELL@WELDQC.COM) OR 614-487-7207 TO OBTAIN A USER-AGREEMENT. ONCE THE USER-AGREEMENT IS RETURNED, A USER-NAME AND PASSWORD IS PROVIDED.

E) NAVWELD CONTAINS THE REQUIREMENTS FOR ARC WELDING, STUD WELDING, BRAZING AND RESISTANCE WELDING ACCORDING TO THE FOLLOWING SPECIFICATIONS:

- 1) NAVSEA S9074-AQ-GIB-010/248
- 2) NAVSEA S9074-AR-GIB-010/278
- 3) MIL-STD-1689A
- 4) NAVSEA T9074-AD-GIB-010/1688
- 5) ABS/ NVR - 2007
- 6) NAVSEA 0900-LP-001-7000
- 7) AMERICAN WELDING SOCIETY D17.2

F) NAVWELD AUTOMATICALLY DETERMINES:

- 1) ESSENTIAL ELEMENTS FOR PQR, WPS/BPS & WPQ

- 2) NON-DESTRUCTIVE TESTS FOR PQR & WPQ
- 3) DESTRUCTIVE TESTS FOR PQR & WPQ
- 4) QUALIFIED RANGES OF THE ESSENTIAL ELEMENTS FOR PQR & WPQ
- 5) REQUIREMENTS OF THE FABRICATION DOCUMENT FOR PQR & WPS/BPS
- 6) PREHEAT & INTERPASS TEMPERATURES
- 7) BASE & FILLER COMBINATIONS

G) ADDITIONAL FEATURES INCLUDE:

- 1) LOCATIONS FOR ENTRIES ARE MARKED "AS REQUIRED" OR "OPTIONAL", AND DOCUMENTS ARE MARKED AS "COMPLETE" OR "INCOMPLETE".
- 2) NAVWELD AUTOMATICALLY CREATES A WPS/BPS BASED ON THE QUALIFIED RANGES OF A PQR.
- 3) PROVIDES THE ABILITY TO TRACK VISION TESTS, WORKMANSHIP TRAINING AND WELDING/BRAZING HISTORY FOR PERSONNEL.
- 4) PROVIDES THE ABILITY TO SEARCH FOR WELDERS & BRAZERS BASED ON THEIR QUALIFICATIONS.

IX) CLARIFICATION OF REQUIREMENTS FOR SINGLE PASS WELD QUALIFICATION, BUTTERING UNDER HARDFACING OR CLADDING, SUBMERGED ARC WELDING OF HY-MATERIALS, AND REPAIR OF BASE MATERIALS

A) SINGLE PASS WELD QUALIFICATION:

- 1) MULTI PASS WELD QUALIFICATIONS CAN QUALIFY SINGLE PASS WELDING FOR THE FOLLOWING CONDITIONS, PROVIDED THE REQUIREMENTS OF NAVSEA S9074-AQ-GIB-010/248 ARE MET:

I. FILLET WELDS

II. BUILD UP OR REPAIR WELDING

III. JOINT DESIGNS LISTED IN MIL-STD-22 WHICH ARE RESTRICTED TO BASE MATERIAL THICKNESSES LESS THAN 1/4- INCH E.G. B1S.1, B1S.2, C1S.1, ETC.

B) BUTTERING UNDER HARDFACING OR CLADDING (SOME DRAWINGS REFER TO THIS AS A BUFFER LAYER):

- 1) IF A PROCEDURE IS QUALIFIED WITHOUT BUTTERING, THE ADDITION OF BUTTERING SHALL REQUIRE REQUALIFICATION.
- 2) THE MINIMUM QUALIFIED THICKNESS OF THE BUTTERING LAYER IS T (THE THICKNESS USED FOR THE QUALIFICATION WELD). THE MAXIMUM QUALIFIED THICKNESS OF THE BUTTERING LAYER IS 2T.
- 3) THE MINIMUM QUALIFIED NUMBER OF BUTTERING LAYERS IS EQUAL TO THE NUMBER OF BUTTERING LAYERS UTILIZED FOR THE QUALIFICATION TEST ASSEMBLY (RECORD NUMBER OF LAYERS ON PQR).
- 4) ELIMINATION OF BUTTERING SHALL REQUIRE REQUALIFICATION.
- 5) THE FINAL BUTTERING LAYER SURFACE SHALL BE VT AND PT INSPECTED IN ACCORDANCE WITH NAVSEA S9074-AQ-GIB-010/248 BEFORE HARDFACING OR CLADDING.
- 6) IF A BUTTER LAYER IS APPLIED BY ITSELF (I.E. IT FORMS THE FINAL WELD SURFACE) THEN IT IS A PAD AND SHALL REQUIRE QUALIFICATION BY A BUTT WELD AS SPECIFIED IN NAVSEA S9074-AQ-GIB-010/248.

C) REPAIR OF BASE MATERIALS:

WELD REPAIR OF BASE MATERIALS SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF EB-4186.

1) WHEN REQUIRED BY EB-4186, PERMISSION TO PERFORM REPAIR WELDING SHALL BE REQUESTED VIA A PROPERLY COMPLETED VIR SUBMITTED BY THE SUPPLIER ELECTRONICALLY USING THE APPROVED SPARS VES (VIRTUAL ENTERPRISE SERVER). THE SUPPLIER SHALL SEND THESE DOCUMENTS TO THE BUYER DESIGNATED ON THE PURCHASE ORDER. WHERE PERMISSION TO PERFORM REPAIRS IS REQUIRED, BUYER AUTHORIZATION SHALL BE OBTAINED PRIOR TO PERFORMING THE REPAIRS

D) SUBMERGED ARC WELDING OF HY-80/100 AND HSLA-80 STEELS:

1) ADDITIONAL PREHEAT/INTERPASS, HEAT SOAKING AND FLUX HANDLING REQUIREMENTS FOR SUBMERGED ARC WELDING OF HY-80/100 AND HSLA-80 STEELS ARE SPECIFIED IN EB-4906. CONTACT THE BUYER FOR COPIES OF ELECTRIC BOAT SPECIFICATIONS.

X) WELDER WORKMANSHIP TRAINING (WWT) APPLICABLE TO NAVSEA TECHNICAL PUBLICATION OR MILITARY STANDARD FABRICATION DOCUMENTS

A) WELDER WORKMANSHIP TRAINING SHALL COMPLY WITH EB-4186 APPENDIX A OR APPENDIX B, AS APPLICABLE. IF REQUESTED, THE BUYER CAN PROVIDE ADDITIONAL DOCUMENTATION TO THE SUPPLIER TO SUPPORT THIS TRAINING. COMPLIANCE WITH EB 4186 APPENDIX A OR APPENDIX B IS NOT APPLICABLE TO FABRICATORS THAT HAVE WELDER WORKMANSHIP PROCEDURES THAT ARE PREVIOUSLY APPROVED BY NAVSEA OR A NAVSEA AUTHORIZED REPRESENTATIVE.

B) NAVNDT CAN BE USED TO ASSIST IN CREATING A WELDER WORKMANSHIP TRAINING PROGRAM. THE COGNIZANT NDT LEVEL III MUST STILL VERIFY AND CERTIFY THAT THE PROGRAM IS IN ACCORDANCE WITH EB-4186, APPENDICES A OR B, AS APPLICABLE. FOLLOW SECTION VIII.D OF THIS STANDARD CLAUSE TO OBTAIN ACCESS TO NAVNDT.

XI) HUNTINGTON INGALLS INDUSTRIES NEWPORT NEWS SHIPBUILDING SUBMITTALS:

A) FOR PURCHASE ORDERS THAT ORIGINATE FROM NEWPORT NEWS SHIPBUILDING, REFER TO STANDARD CLAUSE 38-4 FOR SUBMITTAL OF ALL UNAPPROVED PURCHASE ORDER SOFTWARE DELIVERABLES.

B) SOFTWARE DELIVERABLES PREVIOUSLY APPROVED SHALL BE PROVIDED AS PART OF THE HARDWARE DELIVERABLES.

XII) COMMERCIAL WELDING / BRAZING:

A) COMMERCIAL WELDING / BRAZING SHALL BE PERFORMED IN ACCORDANCE WITH WRITTEN PROCEDURES APPROVED BY THE BUYER PRIOR TO THE START OF PRODUCTION. THIS REQUIREMENT DOES NOT APPLY WHERE SUBMITTAL / APPROVAL OF SUCH PROCEDURES IS EXPLICITLY EXEMPTED BY THE PURCHASE ORDER, PART DATA, OR PROCUREMENT SPECIFICATION, OR IS OTHERWISE SPECIFICALLY WAIVED BY THE BUYER VIA VIR.

B) COMMERCIAL STANDARD WELDING / BRAZING: DEFINED AS WELDING / BRAZING PERFORMED TO AN ESTABLISHED COMMERCIAL STANDARD, SUCH AS ABS, AWS, ASME BOILER & PRESSURE VESSEL CODE, ETC.

1) WHERE COMMERCIAL STANDARD WELDING / BRAZING IS SPECIFIED OR AUTHORIZED, ALL APPLICABLE REQUIREMENTS OF THE STANDARD SHALL BE MET.  
2) COMMERCIAL STANDARD WELDING / BRAZING PROCEDURES AND SUPPORTING QUALIFICATION DATA (IF REQUIRED) SHALL STATE THE STANDARD AND REVISION USED.

- 3) PRE-QUALIFIED PROCEDURES ARE NOT EXEMPTED FROM THE SUBMITTAL AND APPROVAL REQUIREMENTS SPECIFIED IN SECTION XII.A.
- 4) THE SUPPLIER IS ADVISED THAT COMMERCIAL STANDARD PROCEDURES USED FOR WELDING OF TUBULAR JOINTS MAY REQUIRE ADDITIONAL QUALIFICATION.
- 5) FOR APPLICATIONS WHERE A DRAWING SPECIFIES WELD JOINT DESIGNS IN ACCORDANCE WITH MIL-STD-22, BUT AWS PRE-QUALIFIED WELDING PROCEDURES ARE TO BE USED, THE SUPPLIER SHALL SUBMIT A VIR TO THE BUYER TO OBTAIN VERIFICATION THAT THE PRE-QUALIFIED JOINT DESIGNS ARE EQUIVALENT TO THOSE SPECIFIED ON THE DRAWING. A COPY OF THE APPROVED VIR SHALL BE SUBMITTED WITH THE VPAR FOR THE PRE-QUALIFIED PROCEDURE.

C) COMMERCIAL BEST PRACTICE WELDING / BRAZING: DEFINED AS WELDING / BRAZING PERFORMED WITHOUT DIRECTION FROM ANY PARTICULAR SPECIFICATION, BASED ON SUPPLIERS KNOWLEDGE AND EXPERIENCE.

- 1) COMMERCIAL BEST PRACTICE WELDING / BRAZING PROCEDURES SHALL DEFINE ALL PARAMETERS NECESSARY TO PRODUCE A SOUND WELD, INCLUDING CLEANING PRIOR TO WELDING / BRAZING, AND WORKMANSHIP EXAMINATION REQUIREMENTS.
- 2) THE BUYER RESERVES THE RIGHT TO REQUEST TESTING IN ORDER TO PROVIDE OBJECTIVE QUALITY EVIDENCE THAT THE PROCEDURE WILL PRODUCE SATISFACTORY RESULTS.

D) WHERE COMMERCIAL STANDARD OR COMMERCIAL BEST PRACTICE WELDING / BRAZING IS SPECIFIED OR AUTHORIZED, THE SUPPLIER SHALL, AT A MINIMUM, ENSURE THAT BASE MATERIALS ARE CLEANED TO BRIGHT METAL FREE OF GREASE, PAINT, OIL, DIRT, RUST, OR OTHER CONTAMINANTS PRIOR TO WELDING / BRAZING, AND THAT A WORKMANSHIP EXAMINATION OF COMPLETED WELDS / BRAZES IS PERFORMED TO ENSURE FREEDOM FROM CRACKS, EXCESSIVE POROSITY, POOR FUSION, OR OTHER CONDITIONS DETRIMENTAL TO THE OPERATION OF THE HARDWARE, AND THAT ANY DRAWING-SPECIFIED WELD / BRAZE SIZE REQUIREMENTS ARE MET.

E) SUPPLIERS THAT ARE UNSURE OF WHETHER COMMERCIAL STANDARD OR COMMERCIAL BEST PRACTICE WELDING / BRAZING IS ALLOWED FOR A PARTICULAR APPLICATION SHOULD SUBMIT A VIR, THROUGH THE BUYER, TO THE COGNIZANT ELECTRIC BOAT COMPONENT ENGINEER FOR APPROVAL. WHERE APPROVED, A COPY OF THE VIR SHALL BE SUBMITTED WITH THE WELDING / BRAZING PROCEDURE VPAR.

#### XIII) EB TRANSFER OF WPS OR PQR ALLOWANCE

A) FOR EB PURCHASED MATERIAL, IF THE SUPPLIER IS IN NEED OF A WPS, UNDER LIMITED CONDITIONS A QUALIFIED PQR/WPS PACKAGE FROM ELECTRIC BOAT CAN BE TRANSFERRED TO THE SUPPLIER. THESE TRANSFERRED PQR/WPS WILL BE MANAGED ON A CASE BY CASE BASIS AND THE SUPPLIER SHOULD REQUEST THE BUYER TO PROVIDE EB SPECIFICATION 5877 FOR SPECIFIC GUIDANCE ON THE TRANSFER AND USE OF ELECTRIC BOAT TRANSFERRED PROCEDURES.

#### XIV) USE OF AWS NAVSEA SWPS-N PROCEDURES

A) FOR EB PURCHASED MATERIAL, NAVAL SEA SYSTEMS COMMAND (NAVSEA) CURRENTLY ALLOWS THE USE OF AMERICAN WELDING SOCIETY (AWS)-NAVSEA STANDARD WELDING PROCEDURE SPECIFICATIONS FOR NAVAL APPLICATIONS (SWPS-NS) FOR SHIP CONSTRUCTION IN LIEU OF FULL NAVSEA TECHNICAL PUBLICATION S9074-AQ-GIB-010/248 QUALIFICATION. EB HAS BEEN GIVEN PERMISSION TO ALLOW SUPPLIERS TO UTILIZE AWS-NAVSEA SWPS-NS. AWS AND

NAVSEA MAINTAIN A PROCEDURE LIBRARY OF PUBLISHED AWS-NAVSEA SWPS-NS. THEY CAN BE FOUND BY SEARCHING "AWS-NAVSEA" AT THE AWS ONLINE BOOKSTORE [HTTP://PUBS.AWS.ORG](http://pubs.aws.org). NEW "AWS-NAVSEA" PROCEDURES CONTINUE TO BE ADDED, THEREFORE, THIS WEBSITE SHOULD BE CHECKED OFTEN FOR NEW PROCEDURES. THE SUPPLIER SHOULD REQUEST THE BUYER TO PROVIDE EB SPECIFICATION EB-5877 FOR SPECIFIC GUIDANCE ON THE USE OF AWS NAVSEA SWPS-N PROCEDURES FOR THESE PRE-QUALIFIED WELDING PROCEDURES.

XV) COMPLIANCE REQUIREMENT STATEMENT

A) THE ABOVE REQUIREMENTS DO NOT RELIEVE THE SUPPLIER OF ITS RESPONSIBILITY TO COMPLY WITH THE REQUIREMENTS OF THE PURCHASE ORDER. ANY DEVIATIONS FROM OR REQUESTS FOR WAIVERS TO THE PURCHASE ORDER REQUIREMENTS MUST BE CLEARLY IDENTIFIED AND JUSTIFIED AS SUCH BY THE SUPPLIER AND MUST BE SUBMITTED FOR APPROVAL VIA A VIR AND APPROVED AS SOON AS POSSIBLE PRIOR TO THE START OF PRODUCTION.

EB POSC 60-77 REVISION 21 DATED 05/31/2019

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Web Server Questions and Comments: [webmaster@gdeb.com](mailto:webmaster@gdeb.com)

General EB Questions and Comments: [info@gdeb.com](mailto:info@gdeb.com)

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# GENERAL DYNAMICS

## Electric Boat

### Purchase Order Standard Clauses

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#### New Search

Number 76-22L

Revision 1

Title NDT IAW COMPONENT DRAWING AND/OR SPECIFICATION

Clause 1 COPY TEST REPORTS SHOWING THE RESULTS OF ALL NDT REQUIRED BY THE COMPONENT DRAWING, AND/OR THE MATERIAL SPECIFICATION(S), IS REQUIRED. SELLER SHALL RECORD:

- A. THE NDT METHOD/S USED.
  - B. DESCRIPTION OR UNIQUE IDENTIFICATION OF THE ITEM INSPECTED.
  - C. PROCEDURE IDENTIFICATION.
  - D. THE PERFORMING ACTIVITY, WHETHER IT BE THE SELLER, A SUB-TIER SUPPLIER OR A TEST LAB.
  - E. QUANTITY INSPECTED.
  - F. ACCEPTANCE STANDARD USED.
  - G. QUANTITY ACCEPTED/REJECTED.
  - H. DATE OF INITIAL INSPECTION AND INSPECTOR IDENTIFICATION.
  - I. SIGNATURE OF THE INSPECTOR
2. IN ADDITION, THE SELLER SHALL ATTACH A COPY OF THE BUYERS VPAR THAT APPROVED THE PROCEDURE TO THE TEST REPORT.
3. TEST REPORTS AND/OR OTHER VERIFICATION OF CONFORMANCE DOCUMENTS SHALL BE SIGNED AND DATED BY THE SELLERS AUTHORIZED REPRESENTATIVE.

EVIDENCE OF ALL TESTS AND INSPECTIONS PERFORMED AS REQUIRED BY THE SPECIFICATION MUST BE MAINTAINED BY THE SELLER; HOWEVER, RECORDS FOR ONLY THOSE TESTS REQUESTED ABOVE SHALL BE FORWARDED WITH THE SHIPMENT.

TEST REPORTS SHALL BE ATTACHED TO THE PACKING LIST. WHERE MORE THAN ONE CONTAINER OR PACKAGE IS INCLUDED IN THE SHIPMENT, THE TEST REPORTS SHALL BE ATTACHED TO OR PLACED IN ONE CONTAINER OR PACKAGE AND CLEARLY IDENTIFIED ON THE OUTSIDE.

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