

# Vendor Training Code Clinics Status Update

Ryan Schneider - ATI Project Manager:  
Nick Evans (Bath) - Program Technical Representative:  
Lynn Showalter - HII-NNS Project Lead:

May 12 and 13th, 2026

NSRP Welding Technology Panel Meeting

Stress Engineering Services

13800 Westfair East

Houston, Texas 77041-1101



# NSRP Project Team

## Project Team Members

- Andrew Lo – NAVSEA
- Lenny Askinazy – Electric Boat (EB)
- Richard Arn – American Welding Society (AWS)
- Lynn Showalter – Newport News Shipbuilding (NNS)



# AWS Project Panel

Name	Professional Role	Employer	Experience
Ben Arn	Consulting Weld Engineer	Industry/ Corporation/FB M	11-20 years
Dr. Richard Campbell	Welding Consultant	Non-profit/ Retired Bechtel	21+ years
Blake Craft	Welding Consultant	Non-profit	21+ years
Michael Fronk	Mechanical Engineer/Weld Engineer	Government/ Military/NAVSEA	11-20 years
Richard Holdren	Principal Welding Engineer	Industry/ Corporation/ ARC spec.	21+ years
Lee Kvidahl	Welding Engineer	Retired- Ingalls Shipbuilding	21+ years
Larry Mullins	Director/Engineer	Self	21+ years
Nancy Porter	Project Manager	Retired - EWI	21+ years
Lynn Showalter	Welding Engineer 5 Associate Technical Fellow	Industry/ Corporation/NNS	41 + years



# AWS Project Panel



# AWS Staff

Staff Member	Job Title
Richard Arn	Vice President, Welding and Technology
Yangling Zhang	Managing Director, Certification
Kyle Payne	Director of Assessment
Mark Pidal	Exam Developer

- More on the AWS Engagement with this task in later slides

# Project Plan \_review

- Vendors in over 40 states for the various Private and Public Shipyards.
- The vendors need guidance in developing qualifying welding procedures.
- Weak to little or no welding SME's onsite.
- This project is focused on the following NAVSEA Publications:
  - Tech Pub 278
  - Tech Pub 248
  - Tech Pub 271
  - MIL-STD-22D
  - MIL-STD-1628
  - MIL-STD-2035

# Project Plan – Development and Challenges

- Solicited input from
  - Public Shipyards
  - Private Shipyards
  - Consultants
  - NAVSEA
- What are common mistakes at welding vendors beyond PQR?
- Incorrect application of an approved Welding Procedure
  - Not aligned with Fabrication Document
  - Unapproved weld joints
  - Unqualified Positions

# Project Plan – Challenges (vendor mistakes)

- Using commercial/AWS filler metal that is advertised as **capable of** meeting Mil-Spec but is not ordered with MIL Spec testing
- Failure to accomplish SMAW moisture testing
- Chemical overchecks
- Application of procedure and parameters beyond intended limits
  - Appropriate amps & volts for the electrode size, material thickness or welding position
- Knowing how to apply and measure preheat/interpass
- Using hand held torch preheat when not appropriate or permitted
- How to measure and verify heat input

# Project Plan – Challenges (vendor mistakes)

- Non-compliant handling and storage of filler metal (co-mingling with other types of MIL-SPEC or commercial filler metal, not keeping clean)
- Welder qualification issues (workmanship, vision tests, quarterly maintenance, positions or thickness)
- Welding equipment not appropriate or in good working order
- Shielding gas flow meter and gas mixture change issue
- Not performing monitoring/surveillance of welders
- Using subcontract welding without flowing down all PO requirements
- Not getting approval to transfer welding procedures to another site of the activity.

# Project Plan – Challenges (vendor mistakes)

- From the above lists, the vendors also need guidance in writing the required quality procedures to support their welding operations and how these procedures are connected and reference each other.
- More on this later as the list is expanding.

# Project Plan – Status

- Training is being developed with AWS to be delivered to the target audience through their training program.
- AWS has an AI training development tool which will be utilized.
- Meetings have been conducted with AWS key stakeholders and Online.
- Meeting with the whole AWS Project Panel
  - Texas Tech DFW February 26<sup>th</sup> and 27<sup>th</sup>
- Introduction to NAVSEA Technical Publications
  - Explaining the TP 248 PQR process
    - Development, witnessing, submittal and approval
    - WPS
    - Performance Qualification (WQTR)

# Project Plan – Status continued

- Introduction to NAVSEA Technical Publications
- TP 278 Fabrication
  - -Control of filler metal
  - - Testing of filler metal
  - - Maintenance of welder qualification
  - - How to apply preheat
  - - How, When, Where to check preheat
  - - How to Measure Heat Input
  - - Post Weld Heat Soaks versus Post Weld Heat Treatment

# AWS similar training -

- Course Description:

- What the course covers and its professional relevance

- This course explores the content and application of AWS D1.1/D1.1M Structural Code – Steel. Students will study various code applications to development and understanding of the various sections of the code and how it is applied in industry.

- Learning environment, expectations, and outcomes

- Assessments emphasize compliance with code content, safety, and technical judgment, emphasis on evaluating code-compliant WPS and PQR documents for producing production structural steel weldments.

## AWS similar training -continued

- The course provides an in-depth examination of all sections of AWS D1.1/D1.1M. The emphasis of the course is preparing the student to successfully navigate-
  - Part – C Certification Examination for AWS CWI, and then to apply the principles of AWS D1.1 to the work environment.
- Students will learn to apply-
  - D1.1 code to their employer's needs, through lectures, case studies, and review of the standard for welding systems, procedures, personnel qualification, inspection, reporting, and production welding.

## AWS similar training -continued

- Prerequisites for D1.1 which are applicable to NAVSEA training
  1. Engineering or technical (basic) knowledge of the codes and standards.
  2. Working knowledge of codes and specifications in general.
  3. Knowledge of basic steel industry products.
  4. Knowledge of multiple welding processes.
  5. Knowledge/familiarity with Mechanical/Destructive testing and NDT.

# Project Plan – Overview-continued

- What is the AWS D1.1 delivered product?
- [https://](#) Link has been deactivated

# Project Plan –

- Collaborated with AWS Panel –to Develop a Curriculum Plan (DACUM)
- The DACUM workshop successfully produced a structured representation of the duties, tasks, and competencies required for competent practice and will prepare students to demonstrate their ability to navigate and apply NAVSEA Tech Pub 278 and 248 while understanding company Welding, Quality and Fabrication procedures.
- The process leveraged the expertise of experienced practitioners and followed a recognized methodology used widely in certification and workforce development contexts.

# Steps

- The resulting framework provides a defensible, practice-based foundation for certification examination development and other professional credentialing activities.
- The Duty Statements are as follows:
  - A. Evaluate Welding and Quality Requirements
  - B. Conduct Procedure Qualification to TP 248
  - C. Maintain Welder Workmanship
  - D. Conduct Welder Qualification
  - E. Verify Production Compliance and Quality Procedures
  - F. Oversee Subcontracted Work
  - G. Ensure Welder Certification Maintenance

# Steps

- Each of the Duties and associated Tasks- for Example

DUTIES	TASKS			
A. Evaluate welding and quality requirements.	A1 Evaluate RFP & contract documents.	A2 Review drawings and specifications	A3 Request specification exceptions/ variations.	A4 Determine required documentation.
	A10 Determine joint design.	A11 Identify materials (e.g., base metal, filler metal, shielding gas).	A12 Determine thermal processing requirements (e.g., preheat, interpass, PWHT, post-weld).	A13 Evaluate thermal processing capabilities.
	A19 Determine test lab's capabilities.	A20 Determine NDT organization's qualifications.	A21 Determine the welding responsible official capabilities using Table I Base Material Grouping	A22 Determine the welding responsible official capabilities using Table II Filler Metals Grouping

# Steps

A5 Determine quality requirements (e.g., hold points, specific inspections, record requirements).	A6 Verify procedure for filler metal control.	A7 Ensure alignment of quality program with requirement (e.g., Level 3 examiner, authorized representative).	A8 Determine approval authority.	A9 Define necessary qualification scope.
A14 Select welding/brazing process & equipment.	A15 Evaluate welding position & access requirements.	A16 Determine welding personnel required competencies.	A17 Evaluate ease of fabrication.	A18 Determine destructive and non-destructive testing requirements.
A23 Determine the welding responsible official capabilities using Table III Cross Qualification	A24 Determine the welding responsible official capabilities using Table IV PQR Positions	A25 Determine the welding responsible official capabilities using Table V Essential Elements	A26 Determine the welding responsible official capabilities using Table VI Welding Procedure Qualification material thickness limits	A27 Determine the welding responsible official capabilities using Table VII Welding Procedure qualification test requirements

# Steps –Continued

- Next Steps
  - Continue the Review of complied existing training from : Public Shipyards, Private Shipyards, Consultants and NAVSEA
- Develop Modules based on the proceeding and the following
  - PQR and WPS development
    - TP 248 and 278 will both be used
      - Preheat /Interpass
      - Stress Relief
      - Mechanical properties requirements
      - Explaining the need for a General Requirements
        - How to apply Preheat Interpass
        - How and where check preheat/interpass
        - Heat Input
        - Cleaning prior to welding
        - Qualified Welding Positions
        - Qualified Thickness Ranges
        - Torch and Work Angles

# Steps –Continued

- Challenges:
- The Initial training is focused on training vendors in researching, developing and executing the Procedure Qualification Record (PQR).
- Next extracting the information from the PQR for developing the Welding Procedure Specification (WPS).
- Followed by the Performance Qualification Test.
- Submittal of the above in support of the PQR Approval

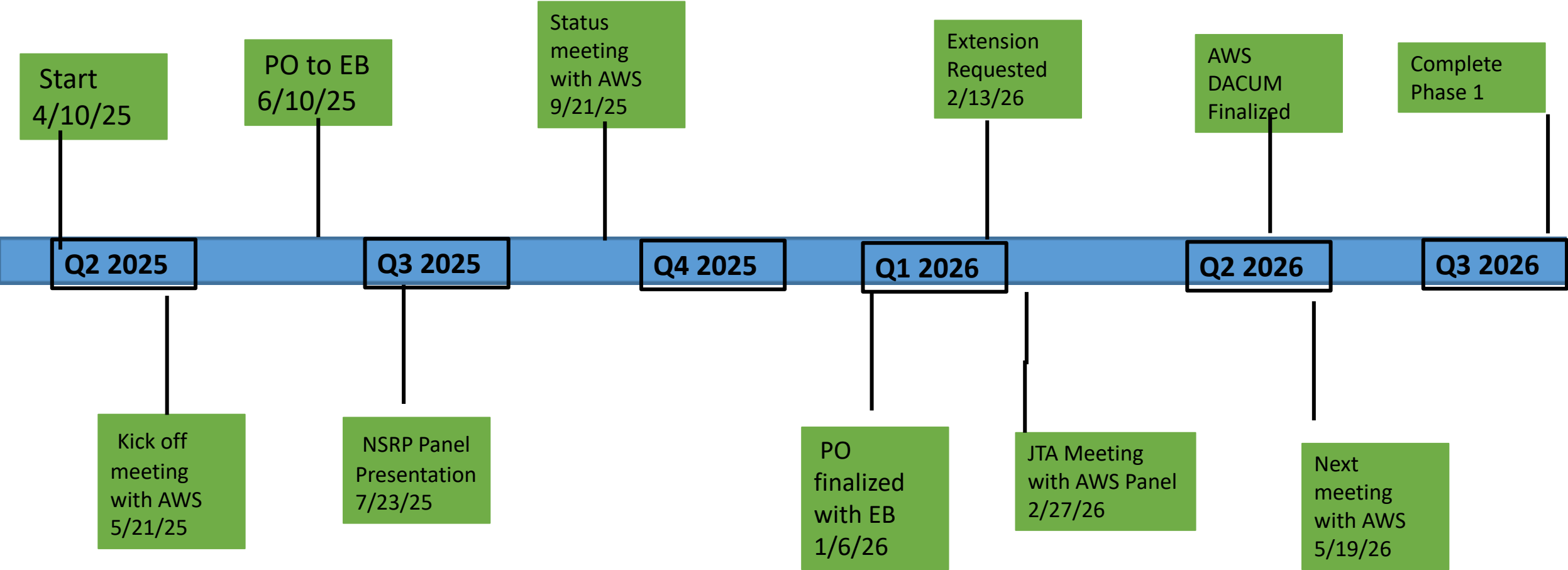
# Steps –Continued

- Challenges:
- As the previous is being compiled we have come to the realization that the application and implementation of the welding procedures and all of the other supporting procedures is the next hurdle for the vendors.
- Address the common vendor mistakes
- Other Welding Related Areas for Training
  - Surveillance
  - Weld Record
  - Level 1 material requirements
  - Welder Workmanship Training

# Steps – History

- The Scope of the Training is expanding and becoming more focused on equipping and providing the Vendors with the knowledge, skills and procedures to have a robust welding program.
- As a result, training on the practical production application implementation of the PQR and WPS would lead to a Proposal for Phase 2 of this project to provide training guidance on production procedures beyond the PQR, and WPS.

# Project Timeline



# Budget

- Project budget \$200,000.00
  - NNS: \$ ~175,000
  - EB: \$ ~25,000
- Spent as of April 20th:
  - Issued to EB: \$28,422
  - NNS Spent \$ 19,292
  - Remaining as of 4/20/2026 \$152,284 24% spent

# Next Steps Beyond

- Phase II ?
  - Beta Testing of Training with current shipyards
  - Expand Training to provide case studies
  - Include training on Fabrication Related Supporting Procedures

- Questions ?