



# Industry Performance Demonstration Activities

2025 In Review



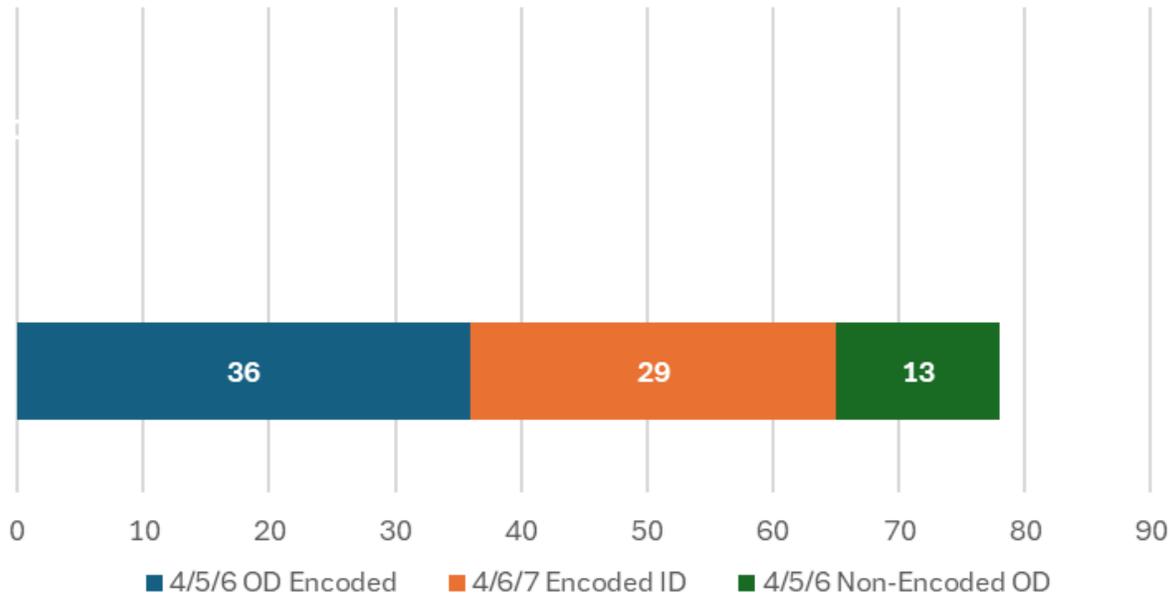
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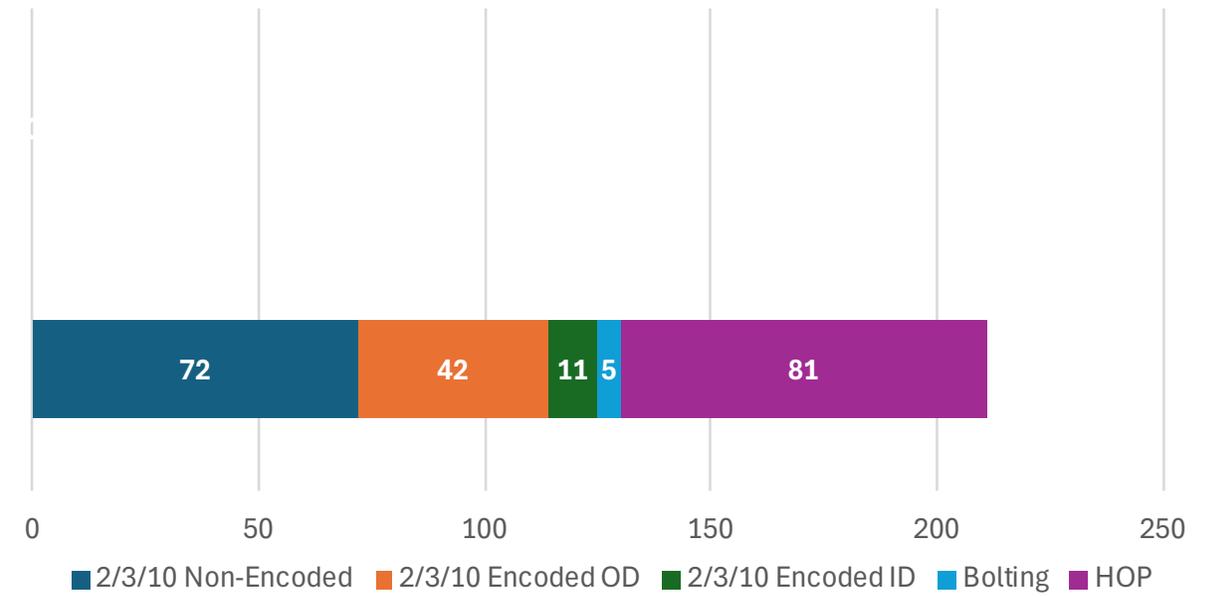
NRC Technical Information Exchange Meeting  
January 21, 2026

# 2025 Qualification Lab Activities

## PD RPV Lab Qualification Tests 2025



## PD Piping Lab Qualification Tests 2025



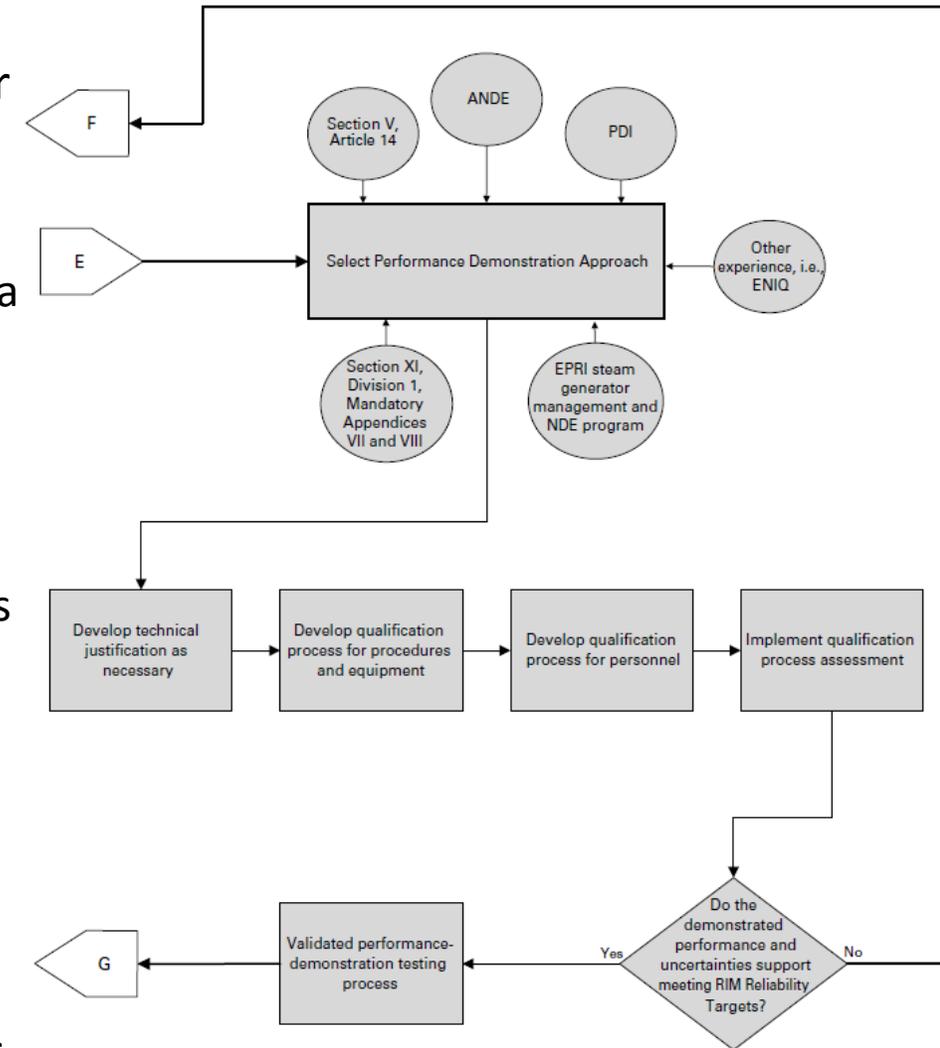
**> 200 Qualification Tests and > 75 days of Hands-On Practice Administered**

# New Industry Procedures & Documents Released in 2025

- **PDI-UT-15 – Procedure for Manual Phased Array Ultrasonic Examination of Dissimilar Metal Welds**
  - Non-encoded PAUT dissimilar metal weld industry procedure
  - Technique sheet based
  - Personnel qualification testing windows scheduled throughout 2026
    - **8 personnel qualified in 2025 (9 attempts)**
      - 7 fully qualified DET, LEN, TWS
      - 1 partially qualified DET & LEN only
  - Procedure available for download on EPRIQ Website (<https://pdi.epriq.com/epri-qualified-procedures/phased-array/phased-array-procedures/>)
- **Performance Demonstration Program Comparison to ASME Section XI, Appendix VIII and 10CFR50.55a (2025 PD Program Reconciliation)**
  - Published July 23, 2025
  - Product ID – **3002032116** (<https://www.epri.com/research/products/000000003002032116>)
    - Comparison of the EPRI PD Program operating procedures with ASME Boiler and Pressure Vessel Code and the Nuclear Regulatory Commission's CFR requirements, including the following:
      - ASME B&PV Code, Section XI, Appendix VIII, 2021 edition
      - 10CFR50.55a, Industry Codes and Standards, Amended Requirements, Final Rule dated August 30, 2024
      - In-Service Inspection Code Case Acceptability, Regulatory Guide 1.147, Revision 21
- **Guideline for Conducting Ultrasonic Examinations of Dissimilar Metal Welds: Revision 4 (“the DM Guideline”)**
  - Published December 3, 2025
  - Product ID – **3002033911** (<https://www.epri.com/research/products/000000003002033911>)
    - Revision 4 aligns the guideline with NRC conditions stated in 10CFR50.55a requiring the use of ASME BVPC Code Case N-770-7.
    - No changes to NEI 03-08 “Needed” or “Good Practice” requirements

# ASME Section XI, Division 2 Advanced Reactors

- The NDE team at EPRI is working closely with the Advanced Nuclear Technology (ANT) team to assist developers of advanced reactors with various aspects of Monitoring and NDE
  - Performance demonstration of the different potential **monitoring and NDE** technologies that could be deployed in these advanced reactors is a key part of the ongoing work
    - Many reactors are operating at high temperatures (500° C +)
      - Provides a **challenge** for **traditional in-service NDE** technologies and will require innovation in sensors and a larger reliance on monitoring
      - Industry is challenged to develop plans to perform demonstrations of these innovative solutions and ensure that the reliability of the techniques (monitoring or NDE) can be established at a level commensurate with the needed performance to maintain safety and reliability of the assets
        - It is possible that the **qualification processes under Division 2 may differ from traditional Section XI, Appendix VIII** and be more in line with other standards like ENIQ
- This will be a long-term process that we are in the early stages of development on, and we will keep all interested parties updated as we proceed



# Global Performance Demonstration Support

- Swedish Upper Head AI/ML Qualification Activity – ENIQ
  - First ever qualified implementation of AI/ML assisted analysis in a regulated application was carried out in Sweden in 2025 at the Ringhals Nuclear Power Plant
    - EPRI PD staff were allowed to participate in this process as collaborators with the Swedish Qualification Centre (NDE Qualification Body in Sweden)
    - This qualification was performed in accordance with the recommended practices of the ENIQ (European Network for Inspection and Qualification) program in Sweden.
      - EPRI PD took the opportunity to use this a learning opportunity to evaluate the qualification process with AI/ML as a tool
        - We have used these learnings to review the ASME Section XI, Appendix VIII qualification processes and understand what changes will be needed to implement qualifications of similar systems in the US in the future
        - More information to come during the presentation scheduled for 1300 today



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