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BI-WR03 - Verify welder is qualified to perform repair work

WR03.1- Parent Cite:

Start in subchapter D, which references ABS standards as well as Subchapter F; Marine Engineering. Sub F then releases us to ASME IX.

PQS Listed Cites:

- 46 CFR 31.10-1
 - Subchapter D: Tank Vessels
 - Part 31; Inspections and Certification
 - Subpart 31.10: Inspections
 - §31.10-1: Standards established by ABS Rules for Building and Classing Steel Vessels shall be accepted as standard by CG.
- 46 CFR 31.30-1
 - Subchapter D: Tank Vessels
 - Part 31; Inspections and Certification
 - Subpart 31.30 Marine Engineering
 - Kicks to Subchapter F: Marine Engineering
- 46 CFR 32.60-1
 - Subchapter D: Tank Vessels
 - Part 32; Special Equipment, Machinery and Hull Requirements
 - Subpart 32.60: Hull requirements for tank vessels constructed 01JUL1951
 - §32.60-1: Tank vessels construction/conversion shall at least be equivalent to ABS standards (or other recognized class)

WR03.2- Confirm need for qualified welding procedure:

The first reference is in Subchapter A and kicks to the appropriate subchapter for your vessel to determine the welding procedures required; then that subchapter kicks to ABS rules and Subchapter F: Marine Engineering.

Our second ref is Subchapter F; augmenting parts of and accepting the entirety of ASME IX.

PQS Listed Cites:

- 46 CFR 2.75-70
 - Subchapter A: Procedures Applicable to the Public
 - Kicks to appropriate **subchapter** for guidance on weld procedure
 - Each chapter then kicks to ABS
 - ABS then kicks to AWS, EN, ISO, ASME, MIL and JIS
- 46 CFR 57.02-2(a)(1)
 - Subchapter F: Marine Engineering
 - Kicks to ASMEIX... but;
 - Contains modifications and limitations to ASME in CFR: see §57.02-2(c)

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WR03.3- Verify Welder Performance Qualification (WPQ) is valid:

Our first ref is the old Sub A chart, which gets us ultimately to ASME / ABS rules.

We're talking about our welder now; time for a new acronym: WELDER PERFORMANCE QUALIFICATION (WPQ). We can use the WPS as our "recipe," the PQR as our "product" and the WPQ as our "chef."

Second; ASMEIX/QW-322 details the expiration and renewal of WPQ.

- Expiration of Qualification:
 - Hasn't welded for 6 months
 - Specific reason to question ability of welder
- Renewal of qualification
 - Weld one test coupon; test said coupon
 - Revoked qual? Test coupon pertinent to planned production work

PQS Listed Cites:

- 46 CFR 2.75-70
 - O Subchapter A: Procedures Applicable to the Public
 - Kicks to appropriate subchapter for guidance on weld procedure
 - Each chapter then kicks to ABS and/or Subchapter F
 - ABS / Sub F then kicks to AWS, EN, ISO, ASME, MILand JIS
- ASMEIX/QW-322.1
 - o Page 56

WR03.4- Verify variables on WPQ:

The first cite states how the WPQ test must follow a WPS, or one of the standard SWPS listed within ASME IX appendix E. Second; records must be kept with each qualified welder being assigned a number or means of tracking. This brings us to our third reference; the suggested format of a WPQ.

PQS Listed Cites:

- ASMEIX/QW-301.2
 - o Page 53
- ASMEIX/QW-301.4
 - Page 53
- ASMEIX/QW-484(a)
 - Suggested format for WPQ
 - o Page 252

WR03.5- Verify tests are satisfactory:

QW-302.1 Mechanical Tests. Except as may be specified for special processes (QW-380), the type and number of test specimens required for mechanical testing shall be in accordance with QW-452. Groove weld test specimens shall be removed in a manner similar to that shown in figures QW-463.2(a) through QW-463.2(g). Fillet weld test specimens shall be removed in a manner similar to that shown in figures QW-462.4(a) through QW-462.4(d) and figure QW-463.2(h). All mechanical tests shall meet the requirements prescribed in QW-160 or QW-180, as applicable.

The details of how test coupons are to be made, cut, discarded, tested, and analyzed are all within the above.

MI PQS ADD ON

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PQS Listed Cites:

- ASMEIX/QW-302.1
 - Page 53
- ASME IX/QW-484(a)
 - o Page 252

Definitions:

- WPQ
 - Welder Performance Qualification
 - WPQTest
- SMAW
- GMAW
- PAW
- MIG
- TIG
- GTAW
- BACKING

Additional References: