ARTICLE V

STANDARD WELDING PROCEDURE SPECIFICATIONS (SWPSS)

QW-500  GENERAL

The SWPSs listed in Mandatory Appendix E are acceptable for construction in which the requirements of the ASME Boiler and Pressure Vessel Code, Section IX are specified. Any requirements of the applicable Construction Code Section regarding SWPS take precedence over the requirements of Section IX. These SWPSs are not permitted for construction where toughness testing of the WPS is required by the Construction Code.

Only SWPSs (including edition) that have been accepted in Mandatory Appendix E within the 1998 Edition or any later edition of Section IX may be used in accordance with this Article. Adoption of SWPSs (including edition) shall be in accordance with the current edition of Section IX [see QG-100(d)].

QW-510  ADOPTION OF SWPSS

Prior to use, the organization that will be responsible for and provide operational control over production welding shall comply with the following for each SWPS that it intends to use, except as noted in QW-520.

(a) Enter the name of the organization on the SWPS.
(b) An employee of that organization shall sign and date the SWPS.
(c) The applicable Code Section(s) (Section VIII, B31.1, etc.) and/or any other fabrication document (contract, specification, etc.) that must be followed during welding shall be listed on the SWPS.
(d) The organization shall weld and test one groove weld test coupon following that SWPS. The following information shall be recorded:
   (1) the specification, type, and grade of the base metal welded
   (2) groove design
   (3) initial cleaning method
   (4) presence or absence of backing
   (5) The ASME or AWS specification and AWS classification of electrode or filler metal used and manufacturer’s trade name
   (6) size and classification of tungsten electrode for GTAW
   (7) size of consumable electrode or filler metal
   (8) shielding gas and flow rate for GTAW and GMAW
   (9) preheat temperature
   (10) position of the groove weld and, if applicable, the progression
   (11) if more than one process or electrode type is used, the approximate weld metal deposit thickness for each process or electrode type
   (12) maximum interpass temperature
   (13) post weld heat treatment used, including holding time and temperature range
   (14) visual inspection and mechanical testing results
   (15) the results of volumetric examination when permitted as an alternative to mechanical testing by QW-304

(e) The coupon shall be visually examined in accordance with QW-302.4 and mechanically tested in accordance with QW-302.1 or volumetrically examined in accordance with QW-302.2. If visual examination, volumetric examination, or any test specimen fails to meet the required acceptance criteria, the test coupon shall be considered as failed and a new test coupon shall be welded before the organization may use the SWPS.

QW-511  USE OF DEMONSTRATED SWPSS

Code Sections or fabrication documents that are required to be referenced by QW-510(c) may be added or deleted from a demonstrated SWPS without further demonstrations.

QW-520  USE OF SWPSS WITHOUT DISCRETE DEMONSTRATION

Once an SWPS has been demonstrated, additional SWPSs that are similar to the SWPS that was demonstrated may be used without further demonstration. Such additional SWPSs shall be compared to the SWPS that was used for the demonstration, and the following limitations shall not be exceeded:

(a) a change in the welding process.
(b) a change in the P-Number.
(c) a change from the as-welded condition to the heat-treated condition. This limitation also applies for SWPSs that allow use in both conditions (e.g., SWPS B2.1-021 allows production welding with or without heat treatment; if the demonstration was performed without heat treatment, production welding with heat treatment is not permitted). Once heat treatment has been demonstrated for any SWPS, this limitation no longer applies.
(d) a change from a gas-shielded flux-cored wire or solid wire to a self-shielded flux-cored wire or vice versa.

Organizations adopting new SWPSs shall adopt the SWPS edition listed in the current edition of Section IX [see QG-100(d)].

Earlier editions of SWPSs, listed in the 1998 edition of Section IX or later, that have been adopted and properly demonstrated as required herein remain valid.

Listed SWPSs that have been reaffirmed as indicated by "(Rxx)" or "(Rxxx)" or amended as indicated by "AMDy" remain valid.