AWS D1.1 Interpretation

Subject: Limitation of Prequalified WPS Variables
Code Provision: Clause 3.6 and Table 4.5
AWS Log: D1.1-08-I01

Inquiry:
(1) If the 4 variables are listed on the Prequalified WPS without qualification testing how does one select the value to be used to generate the required range?
(2) Should a mean value be selected based on the wide ranges given by the electrode manufacturer, and known by the user to produce sound welding performance in their shop, after which the ranges required by Table 4.5 may be developed and listed on the prequalified WPS?
(3) Or may we use the full range recommended by the manufacture for a given size electrode and list that on our prequalified WPS and allow the shop to determine how to apply those wide ranges to the welding applications?

Response:
(1) Selection of the parameters listed in AWS D1.1:2008 Clause 3.6(1), (2), (3), and (4) for use on the WPS is at the discretion of the contractor. The parameters listed on the WPS shall be within the recommendations of the electrode manufacturer and any other limits put forth by Clause 3 and Clause 5 of this code.
(2) A range may be established as described in Inquiry (2) or a narrower range may be specified.
(3) It is not the intent of AWS D1.1:2008 Clause 3.6 that a single entry on the WPS include the full range recommended by the manufacture for a given size electrode. Multiple entries each including compatible welding parameter ranges in compliance with Table 4.5 and within the manufacture recommendations may be necessary.

AWS D1.1, Structural Welding Code—Steel, is prepared by the AWS Structural Welding Committee. Because the Code is written in the form of a specification, it cannot present background material or discuss the committee’s intent.

Since the publication of the first edition of the Code, the nature of inquiries directed to the American Welding Society and the Structural Welding Committee has indicated that there are some requirements in the Code that are either difficult to understand or not sufficiently specific, and other that appear to be overly conservative.

It should be recognized that the fundamental premise of the Code is to provide general stipulations applicable to any situation and to leave sufficient latitude for the exercise of engineering judgment. Another point to be recognized is that the Code represents the collective experience of the committee; and, while some provisions may seem overly conservative, they have been based on sound engineering practice.