AWS D1.1 Interpretation

Subject: Waveform Power Supplies
Code Provision: Subclauses 5.10, 3.2.1, and 3.2.4
AWS Log: D1.1-15-I01

Inquiry:
(1) Does AWS D1.1:2015, clause 5.10 preclude the use of “waveform” power supplies?
(2) Does AWS D1.1:2015, clause 5.10 preclude the use of “waveform” power supplies where the welding procedure is pre-programmed into the welding machine, and the welding personal call up the welding procedure from the welding machines memory?
(3) Does AWS D1.1:2015, clause 3.2.1 preclude the use of GMAW-P from use with prequalified WPSs?
(4) Does AWS D1.1:2015, clause 3.2.4 preclude the use of waveform controlled power supplies from being used with prequalified WPSs?
(5) Does AWS D1.1:2015 clause 3 permit the use of prequalified WPSs that use GMAW-P?

Response:
(1) No. Any type of power supply is acceptable, providing the equipment is “…so designed and manufactured…..as to enable designated personnel to follow the procedures and attain the results described elsewhere in this code.”
(2) No. Any type of power supply control is acceptable, so long as the controls are such that designated personnel are enabled to “…follow the procedures and attain the results described elsewhere in this code.” The individuals responsible for the WPSs should make certain that the stored WPSs meet the applicable requirements of D1.1, including compliance with D1.1:2015, clause 5.3.1.2.
(3) No. Clause 3.2.1 permits the use of all modes of GMAW, except for GMAW-S which is precluded from prequalification.

(4) No. Clause 3.2.4 was developed to preclude the use of constant current power supplies for FCAW and GMAW, when using prequalified WPSs; this provision was developed without any intention of imposing requirements on GMAW-P.

(5) Yes, providing all the requirements of Clause 3 are met.