



Consumers
Power
Company

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2d response

Mr J G Keppler, Regional Director
Office of Inspection and Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

UNSPECIFIED VOLTAGE IN BECHTEL WPS No P1-A-LH

- Reference:
- (1) NRC IE Inspection Report No 50-329/78-03 and No 50-330/78-03, dated May 4, 1978
 - (2) S H Howell letter to J G Keppler, Midland Nuclear Plant - NRC Items of Noncompliance, Inspection Report No 50-329/78-03 and No 50-330/78-03, Serial Howe-89-78, dated June 7, 1978
 - (3) R F Heishman letter to S H Howell, Docket No 50-329 and 50-330, dated September 13, 1978

Reference (1) is the original NRC inspection report in which three issues were raised, as follows:

- (a) The need for specifying a welding voltage requirement.
- (b) The need for measuring and recording the voltage actually used.
- (c) The need for limiting the voltage value to within ± 15 percent of the mean range value.

With regard to (a), Reference (2) stated that by September 1, 1978 a voltage requirement would be given in the prequalified AWS welding procedure specifications. This was completed on August 4, 1978 with the issuance of Revision 8 of Bechtel Specification 7220-G-27.

With regard to issue (b), commencing on or before December 1, 1978, a procedure will be implemented to monitor the welding voltage ranges as listed in welding procedure specifications. This procedure will identify the amperage and voltage measurements which will be required. The frequency of the measurements to be taken will be based on the number of certified welders at the site as determined by the welder qualification list.

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The actual number of measurements to be made in a given month will be 5 percent of the number of welders from the previous month's list.

Welding voltage and amperage will be measured with a portable in-line shunt and meter box temporarily installed in the welding electrode lead as close as practical to the welding arc (normally, the first disconnect in the electrode lead upstream of the electrode holder). The voltage will be determined by measuring the electrical potential between the welding electrode lead and the work piece or ground lead. Amperage will be determined by passing the welding current through a shunt and measuring the corresponding voltage drop with a millivolt meter calibrated to indicate corresponding amperage values.

CPCo intends to pursue, through national standards organizations and independent testing, a program to substantiate our position that measurement of voltage does not provide any additional assurance of welding quality.

With regard to issue (c), Reference (3) stated NRC's position that welding "...be performed at values within + 15 percent." CPCo does not agree that the AWS Structural Welding Code D1.1, 1972 Edition (including 1973 and 1974 revisions) requires limitation of the voltage range for prequalified procedures to + 15 percent of the mean range value. This limitation of the voltage variable is contained in paragraph 5.5.2.1 and applies only to procedures which require qualification. Paragraph 4.10.2 is applicable to prequalified welding procedures. It states:

"The classification and size of electrode, arc length, voltage and amperage shall be suited to the thickness of material, type of groove, welding position and other circumstances attending the work."

CPCo has made an oral inquiry to the secretary of the AWS Code Committee who has concurred with our position. A written inquiry to document this is being pursued. CPCo believes that the voltage and amperage ranges for these materials are suitable. Additional evidence of this suitability is given through qualification of corresponding welding procedure specifications under the requirements of ASME.

Stephen D. Dowell