PACIFIC GAS AND ELECTRIC COMPANY

J. O. SCHUYLER VICE PRESIDENT RUCLEAR POPER GENERATION

February 29, 1984

PGandE Letter No.: DCL-84-084

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Mr. John B. Martin, Regional Administrator U. S. Nuclear Regulatory Commission, Region V 1450 Maria Lane, Suite 210 Walnut Creek, CA 94596-5368

Re: Docket No. 50-275, OL-DPR-76 Diablo Canyon Unit 1 Bostrom-Bergen Welding Procedures

Dear Mr. Martin:

The enclosed information is provided in response to a request on February 22, 1984 from the NRC Region V Staff concerning Bostrom-Bergen welding procedures.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely. Schuy 0.

Enclosure

cc: D. G. Eisenhut H. E. Schierling Service List

> 8603310025 860123 PDR FOIA DEVINE84-744 PDR

ENCLOSURE

PGandE RESPONSE TO NRC REQUEST FOR

INFORMATION ON BOSTROM-BERGEN WELD PROCEDURES

Question

The following weld procedures have been issued and approved by the PGandE. Resident Engineer and they appear to require procedural qualification. However, no evidence of this qualification exists.

Response

PROCEDURE SPECIFICATION NUMBER	COMMENTS/CONCERNS	RESPONSE		
GM 5, Rev. 0	Procedure identified as "short arc", yet specifies amperage and voltage which are incon- sistent.	The term "short arc" is a mis- nomer. While short circuiting transfer may be obtained with the specified gas mixture and the lower voltage of 25V, the actual transfer that would be expected at the higher voltage of 30V and at 300-375 amps with .035 inch diameter wire would favor the "spray trans- fer mode" or the "globular transfer mode" rather than the short circuiting transfer mode as stated in the procedure. The certified weld qualifica- tion test results are available.		
SM-49	A-615 Gr. 40 rebar, welded to A36 steel with a preheat of 200°. Justify preheat temperature in relation to carbon and content of rebar.	The connection of reinforcing bars to structural steel have been done by field welding. No applications of this procedure have been identified for shop welds performed by Bostrom-Bergen.		

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PROCEDURE SPECIFICATION NUMBER	COMMENTS/CONCERNS	RESPONSE
SH-56	The joint detail is not prequalified.	This procedure has been used only in non-safety-related applications. Also, certified weld qualification test results for the procedure have been located in the field.
SM-57	The joint detail is not prequalified.	This procedure has been used only in non-safety-related applications. Also, certified weld qualification test results for the procedure have been located.
SM-58	The joint detail is prequali- fied except the ASTM A519 material is not a qualified base metal.	The joint detail is prequalified in accordance with AWS D 1.1. A519 has chemical properties similar to A36. Therefore, procedure qualification was judged not to be necessary. In addition, this procedure was not used in safety-related applications.
M-58, Rev. 2	The joint detail is prequali- fied except the ASTM A519 material is not a qualified base metal.	The joint detail is prequalified in accordance with AWS D 1.1. A519 has chemical properties similar to A36. Therefore, procedure qualification was judged not to be necessary. In addition, this procedure was not used in safety-related applications.

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NUMBER	COMMENTS/CONCERNS	RESPONSE		
SM-59; SM-59, Rev. 2	The joint detail is prequali- fied except the ASTM A519 material is not a qualified base metal.	The joint detail is prequalified in accordance with AWS D 1.1. A519 has chemical properties similar to A36. Therefore, procedure qualification was judged not to be necessary. In addition, this procedure was not used in safety-related applications.		
SM-60; SM-60, Rev. 2	Neither A 519 nor AISI 1020 is qualified.	These materials are only used in architectural applica- tion, e.g., toe-plates, kick- plates, etc. Procedure qualification is, therefore, not necessary.		
SM-61	How is it determined that A 242 material is weldable.	The joint detail is prequali- fied in accordance with AWS D 1.1. Although A242 is prequalified, AWS requires that certain grades be tested for weldability. However, the only application of Bostrom-Bergen-supplied A242 material is in the outside guard rails. There- fore, joint prequalification is not important or necessary.		
M-62	A 240 Type 304 is a stainless steel material which is not prequalified.	The materials thicknesses that are welded are 3/8 inch thick. In all probability this is an architectural application. This will be confirmed later.		

Question

Has Bostrom-Bergen supplied ASTM A-500 Gr. C material?

Response

PGandE specification 8837 calls for A-500 Gr. C material to be procured as miscellaneous steel. This material was used in architectural applications, e.g., handrails and posts. Furthermore, A-500, Gr. C is almost identical to A-500 Grades A and B and also A-572, Gr. 42 which are all prequalified.

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Question

Is welding permitted with other than low-hydrogen rod and, if so, what PGandE specification allows other rod to be used?

Response

All PGandE specifications relating to structural steel fabricated by Bostrom-Bergen required that low-hydrogen electrode be used for filler metal. However, specification 8825 for Switchyard Control Buildings, which are non-safety related structures, is silent about filler metal classification. Therefore, the use of non-low-hydrogen electrodes may have occurred for these applications.

Question

For materials specified in the welding procedures were notch toughness requirements established?

Response

The PGandE structural steel specifications required that Charpy V Notch testing be performed on specific materials. The requirement was subsequently deleted when it was recognized that in normal structural applications or in environments where the ambient temperature is higher than the material NDT, the notch toughness test was not appropriate. The design drawings were annotated by adding "Charpy V Test for information only". A letter was also written by PGandE to Bostrom-Bergen that the notch toughness test was not required in heat-affected zones (both the base metal and the filler metal).