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VAN BRUNT,E.E. Arizona Public Service Co.
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SUBJECT: Forwards draft rev to FSAR Section 3A.10 re structural welding code AWS D1.1-72.

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KNIGHTON,G. Licensing Branch 4

SUBJECT: Forwards draft rev to FSAR Section 3A.10 re structural welding code AWS D1.1-72.

DISTRIBUTION CODE: A001S COPIES RECEIVED:LTR __ ENCL __ SIZE: _____
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INTERNAL:	ELD/HDS3	1	0	IE FILE	1	1
	IE/DEPEP/EPB 36	1	1	IE/DEPER/IRB 35	1	1
	NRR/DE/AEAB 21	1	1	NRR/DE/CSB 13	1	1
	NRR/DE/EQB 11	1	1	NRR/DE/MTEB 17	1	1
	NRR/DE/MEB 18	1	1	NRR/DE/SAB 24	1	1
	NRR/DHFS/HFEB40	1	1	NRR/DHFS/LQB 32	1	1
	NRR/DSI/CSB	1	1	NRR/DSI/ICSB	1	[illegible]
	NRR/DSI/AEB 26	1	1	NRR/DSI/ASB	1	1
	NRR/DSI/CPB 10	1	1	NRR/DSI/CSB 09	1	1
	NRR/DSI/ICSB 16	1	1	NRR/DSI/METB 12	1	1
	NRR/DSI/PSB 19	1	1	NRR/DSI/RAB 22	1	1
	NRR/DSI/RSB 23	1	1	REG FILE 02	1	1
	RGN5	3	3	RM/DAMI/MIB	1	[illegible]
EXTERNAL:	ACRS 41	6	6	BNL(AMDTS ONLY)	1	1
	DMB/DSS (AMDTS)	1	1	FEMA-REG VIV 39	1	1
	LPDR 03	1	1	NRC PDR 02	1	1
	NSIC 05	1	1	NTIS	1	1

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Arizona Public Service Company
P.O. BOX 21666 • PHOENIX, ARIZONA 85036

December 14, 1983
ANPP 28438-WFQ/MSN

Director of Nuclear Reactor Regulation
Attention: Mr. George Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket Nos. STN-50-528/529/530
File: 83-056-026; G.1.01.10

Reference: APS letter from E. E. Van Brunt, Jr. to
G. W. Knighton (NRC), dated 11/16/83

Dear Mr. Knighton:

A telephone conference call was held on November 9, 1983 between APS personnel and E. A. Licitra and Dave Smith of your staff to discuss an exception taken in FSAR Section 3.8.1.6.6.1 to Structural Welding Code AWS D1.1-72. Justification had been provided in FSAR Section 3A.10 for the exception taken to AWS D1.1-72, Table 4.2. It was agreed that additional information would be provided in FSAR Section 3A.10 to allay your concerns.

The referenced letter stated that a draft revision of FSAR Section 3A.10 (Paragraph I.D) would be transmitted for your review by December 16, 1983. This information is attached for your review.

If you have any questions regarding this matter, please contact me.

Very truly yours,

E. E. Van Brunt

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects Management
ANPP Project Director

EEVB/MSN/dh
Attachment

cc: E. A. Licitra (w/a)
A. C. Gehr (w/a)

B001
1/1

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President, Nuclear Projects of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt

Edwin E. Van Brunt, Jr.

Sworn to before me this 14th day of December, 1983.

Nora E. Meador

Notary Public

My Commission Expires:

My Commission Expires April 6, 1987

ATTACHMENT

Draft Revision of FSAR

Section 3A.10 (Paragraph I.D)

Draft revision to justification provided in FSAR Section 3A.10, Paragraph I.D.

Justification: The preheat for fillet welds is based on the weld throat dimension, and the justification is based on the following engineering analysis:

1) The structural steels used at PVNGS which utilize the fillet weld throat approach to preheating are plain carbon steels (principally A36 and A500) and are essentially nonhardenable. Preheat is important for plain carbon, nonhardenable steels to counteract high restraint and shrinkage strains. The fillet welds at PVNGS are not considered to be highly restrained. Since the shrinkage strain is proportional to the weld throat, it is a rational basis for preheating. This fillet weld throat approach to preheating is not used for high strength or alloy steels. High strength and alloy steels used at PVNGS are governed by other codes and specifications.

2) The principal welding filler metal used for the structural steel is E7018, which produces a tough ductile deposit and has minimal preheat requirements due to its low hydrogen characteristic. The NRC has reviewed and approved a test report from PVNGS, qualification of an alternative electrode control program for AWS D1.1 (including the electrode control procedure WFMC-1/Revision 6), dated March 15, 1978, which reported on the control of E7018 electrodes. The test coupons used in that program were welded without preheat. Several coupons were one inch thick circular patch tests which represent the maximum restraint. As the circular patch test coupons welded without preheat were acceptable, fillet welding without preheat is justifiable. In addition to these tests, numerous other procedure qualification test coupons have been welded without preheat. Any of these tests can serve to qualify deviations from the requirements of AWS D1.1, Table 4.2.

3) The inspection requirements of AWS D1.1 are supplemented with non-destructive examinations as appropriate to the design and function of the components.