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 GROBE, J.A. Region 3 (Post 820201)

SUBJECT: Responds to NRC 970805 re notice of allegation re 1988 SG replacement welding project. Review of applicable codes used during Unit 2 SG replacement refutes allegations & no corrective actions are necessary.

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September 18, 1997

AEP:NRC:1273

Mr. J. A. Grobe
U. S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

Dear Mr. Grobe:

Donald C. Cook Nuclear Plant Units 1 and 2
RESPONSE TO NOTICE OF ALLEGATION
1988 STEAM GENERATOR REPLACEMENT PROJECT WELDING

This is in response to your letter dated August 5, 1997, that forwarded a notice of an allegation regarding welding activities at Cook Nuclear Plant during the unit 2 steam generator replacement outage in 1988.

The attachment to this letter details our review and disposition of the allegations. The attachment contains no personal, private, proprietary, or safeguards information, and can be released to the public and placed in the NRC public document room.

Sincerely,

E E Fitzpatrick

E. E. Fitzpatrick
Vice President

vlb

Attachment

c: A. A. Blind
A. B. Beach
MDEQ - DW & RPD
NRC Resident Inspector
J. R. Padgett

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SEP 18 1997

ATTACHMENT TO AEP:NRC:1273

RESPONSE TO NOTICE OF ALLEGATIONS
1988 STEAM GENERATOR REPLACEMENT PROJECT WELDING

The investigation discussed below was prepared by the current performance assurance, plant and supplier performance group manager and the current site cognizant engineer - welding. To ensure independence, neither of these two personnel were involved in the unit 2 steam generator replacement (SGR) project. The cognizant engineer - welding was not an employee of any company within the American Electric Power System in 1988 at the time of the unit 2 SGR.

We did experience difficulty with some welds during the SGR project that were resolved with a NRC Region III representative. We were not aware of later allegations regarding the potential quality assurance problems with the welds since completion of the unit 2 SGR prior to receipt of your letter. After receiving your letter, we contacted Morrison-Knudsen and Ferguson, hereinafter referred to as MKF, and determined that there had been some on-going internal communication regarding the welding procedures used at Cook Nuclear Plant during the unit 2 SGR. After reviewing the MKF documents, we conducted our own independent investigation of our records regarding the allegations you presented.

Background

The NRC correspondence requests that we evaluate an allegation that the welding procedures used on the unit 2 SGR were not in compliance with regulations at the time of construction. Furthermore, it was concluded in the allegation that these non-compliant welding procedures raise safety concerns regarding our SGR in 1988.

In 1988, MKF was awarded the contract to perform services related to the welding activities for the unit 2 SGR. Several MKF welding procedures were used, including the welding procedures to join the main feedwater and main steam systems to each steam generator.

The allegation suggests the welding procedure specifications (WPS) and the qualifying procedure qualification records (PQR) were not appropriate for the service intended. This was apparently based on the assumption that the WPS that was used specified a welding material of a specific ASME Section II American Welding Society (AWS) classification different from that actually used in the PQR test for the WPS.

Investigation

The table below summarizes the variables in question from MKF's WPSs and PQRs used for the unit 2 SGR main steam and feedwater connections. The table also references the associated ASME Section IX paragraphs.

The PQRs in question were qualified with a weld filler material, AWS classification (E7018A1, SFA-5.5), that is different from that specified in the WPSs (E7018, SFA-5.1). ASME Section IX, 1986 Edition, "Welding and Brazing Qualification", states in table QW-253 for the shielded metal-arc welding (SMAW) process that a change in the AWS classification is a supplementary essential variable. It appears to us that the allegation is founded in the presumption that we used ASME Section III for our construction code where impact properties are mandatory. Under ASME Section III, a change in the weld material classification, an essential variable, would indeed have constituted a change in the welding procedure

specification, or a requalification of a procedure qualification test.

However, ASME Section III was not the construction code used for the unit 2 SGR welding of the main feedwater and main steam piping systems. The welds for both the main steam and feedwater piping systems were made at pipe to elbow (main steam) and pipe to reducer (main feedwater) joints for each steam generator. The forged nozzle to elbow welds were left intact, and no welding was performed on the vessel for these connections. The original construction code for piping welds is ANSI B31.1, 1967 Edition, and we maintained the ANSI B31.1 code requirements during the steam generator replacement for the applicable pipe to pipe and pipe to fitting welds.

Our engineering specification, DCC-AE-100-QCN, was used to procure materials and services for the unit 2 SGR, and was used by MKF during the replacement. DCC-AE-100-QCN references DCC-PV-109-QCN, revision 3, "Installation and Erection of Nuclear Piping Systems for the Cook Nuclear Plant", that specifically takes exception to impact properties for piping welds for the unit 2 SGR. It is, therefore, concluded that the welding for these piping welds need only meet the requirements of ASME Section IX, and ANSI B31.1. Because the AWS classification is not an essential variable for welding applications where impact property performance is not required, we find both the WPSs and PQRs acceptable, and in compliance with the governing codes as they were applied during the SGR.

Summary WPS and PQR Data for Unit 2 SGR

MKF WPS#	Filler Metal Classi- fication On WPS	MKF PQR# SMAW Only	Filler Metal Classi- fication On PQR	Filler Metal AWS No. On PQR	UTS* (PSI)
M-1-1-AB or M-1-1-BA	SFA-5.1 (E-7018)	1-117	SFA-5.5	E-7018 A1	67900
M-1-1-AB or M-1-1-BA	SFA-5.1 (E-7018)	1-124	SFA-5.5	E-7018 A1	78100
ASME Section IX 1986 Ed.	QW-404	QW-2253	QW-404.12		65000

* Ultimate tensile strength reported on PQR.

Conclusion

Our review of the applicable codes used during the unit 2 SGR refutes the allegations as stated in your letter dated August 5, 1997. We are confident that the WPSs used were relevant and met quality assurance standards and ASME code requirements. There is no 10 CFR Part 21 issue, nor are any corrective actions necessary.

