



50-295/304

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 30, 1996

Ms. Irene Johnson, Acting Manager
Nuclear Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: EDDY CURRENT INDICATIONS IN COMBUSTION ENGINEERING DESIGNED WELDED
STEAM GENERATOR TUBE SLEEVES - ZION NUCLEAR POWER STATION, UNITS 1
AND 2 (TAC NOS. M95183 AND M95184)

Dear Ms. Johnson:

During the Prairie Island Unit 1 (PI-1) January 1996 steam generator (SG) tube inspection, 61 eddy current (EC) indications were found in the upper sleeve weld region of Combustion Engineering (CE) welded tubesheet sleeves. These indications were characterized as single or multiple circumferential indications or volumetric indications. All sleeved tubes with the circumferential indications were removed from service (four tubes were pulled; seven tubes were plugged). The sleeved tubes with volumetric indications were evaluated for location. Sleeved tubes with volumetric indications located by EC below the centerline of the sleeve weld were removed from service; the remaining sleeved tubes were left in service (one tube was pulled; 16 tubes were plugged; 34 tubes were left in service).

The five pulled sleeve/tube assemblies were examined by CE with oversight by the Electric Power Research Institute (EPRI). The results were documented in a March 1996 CE report, "Verification of the Structural Integrity of the ABB CENO Steam Generator Welded Sleeve," CEN-628-P, Revision 01-P. The conclusion of the report was that the EC indications were the result of either or both of two weld conditions termed "incomplete fusion" or "sleeve outside diameter (OD) suckback" caused by improper cleaning of the parent tube prior to welding. Although present since installation, the nondestructive examination (NDE) methods used at the time were not sensitive enough to detect these weld conditions. There was no evidence of inservice induced degradation. The faulty installation process also affected sleeve/tube assemblies at the following plants: ANO-2, Ginna, Kewaunee and Zion 1 and 2. The staff requires additional information to determine the Commonwealth Edison Company's (ComEd)

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plans with respect to inspection and repair of these sleeved tubes during the current Zion Unit 2 outage and the Unit 1 outage currently scheduled for March 1997.

Sincerely,

/s/

Clyde Y. Shiraki, Project Manage
Project Directorate III-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-295, 50-304

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Zion Nuclear Power Station
Unit Nos. 1 and 2

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REQUEST FOR ADDITIONAL INFORMATION

1. During the Zion Unit 2 SG tube inspections in the current refueling outage, what is ComEd's intention regarding inspection of the upper weld in the existing CE designed welded sleeves? Include inspection scope and nondestructive examination methodologies to be used.
2. What is ComEd's intention regarding disposition of sleeved tubes with weld zone indications? Include past practice and present intentions. If ComEd intends to leave weld zone indications (WZIs) in service, provide the basis for the acceptability of this practice including the uncertainty in locating the exact position of volumetric flaws.
3. The staff is currently reviewing a TS amendment dated September 3, 1996, that will add certain portions of the new CE Topical Report to the TS. Commonwealth Edison also docketed a letter dated September 18, 1996, that discusses certain technological enhancements it has adopted, within the requirements of the TS, that have not changed the sleeve design or the reliability of the sleeving process. In its letter of September 18, 1996, ComEd also docketed its intention to submit a TS amendment that will refer to the process enhancements contained in the letter.

Exclusive of these reviews and commitments, is it ComEd's intention to adopt the new CE Topical Report in its entirety? If so, how will ComEd incorporate this topical report into its TS for future sleeving operations?

ENCLOSURE