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SUBJECT: Informs NRC of results of SG eddy current tube insp &  
 subsequent tube repair activities performed during 1997 Unit  
 2 refueling outage.

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November 20, 1997

AEP:NRC:1166AJ

Docket No.: 50-316

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Gentlemen:

Donald C. Cook Nuclear Plant Unit 2  
STEAM GENERATOR 15 DAY INSPECTION REPORT

Pursuant to the requirements of Cook Nuclear Plant Technical Specification 4.4.5.5a, this letter is to inform you of the results of our steam generator eddy current tube inspection and the subsequent tube repair activities performed during the 1997 unit 2 refueling outage.

Eddy current inspections on the unit 2 steam generators tubes began on October 31, 1997. All inspections and repairs were completed by November 5, 1997. Inspections included a 50 % bobbin coil examination of all inservice tubes in all four steam generators. Additionally, a 20% top of the tubesheet rotating pancake coil inspection was conducted in one steam generator in compliance with our submittal letter AEP:NRC:1166T, dated June 27, 1995. Repair activities were limited to plugging a total of five tubes.

The attachment to this letter provides the inspection findings, indication dispositions and the steam generator tube repair actions taken during the 1997 unit 2 refueling outage.

Sincerely,

E. E. Fitzpatrick  
Vice President

jen

Attachment

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

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ATTACHMENT TO AEP:NRC:1166AJ

1997 UNIT 2 REFUELING OUTAGE  
STEAM GENERATOR EDDY CURRENT INSPECTION  
RESULTS AND TUBE REPAIR ACTIVITIES



The table provides a summary of the 1997 unit 2 refueling outage (U2R97) steam generator (SG) inspection findings. The results are presented for each SG, by degradation location, based upon technical specification plugging criteria.

	SG 21			SG 22			SG 23			SG 24		
Locations	Ind	Def	Plg	Ind	Def	Plg	Ind	Def	Plg	Ind	Def	Plg
CLTSP	1	1	1	0	0	0	0	0	0	0	0	0
HLTSP	4	0	0	0	0	0	0	0	0	0	0	0
AVB	0	0	0	0	0	0	0	0	0	0	0	0
U-Bend	0	0	0	0	0	0	0	0	0	0	0	0
CLTS	0	0	0	0	0	0	0	0	0	0	0	0
HLTS	0	0	0	0	0	0	0	0	0	0	0	0
Misc.	0	0	0	0	0	0	0	0	0	6	4	4
Totals	5	0	1	0	0	0	0	0	0	6	4	4

Table Acronym List

AVB	anti-vibration bar intersection	HLTSP	hot leg support plate intersection
CLTS	cold leg tubesheet	Ind	indication
CLTSP	cold leg support plate intersection	Misc.	miscellaneous
Def	defect	Plg	pluggable indication
HLTS	hot leg tubesheet	U-Bend	tight radius (row 1-2) u-bends

As noted above, SG 21 had one pluggable indication. The indication was located at R1/C70, at the first cold leg support plate, and was estimated at 28% throughwall. The indication is believed to have been caused by a burr or small foreign object located near the center of the quatrefoil support plate. Previous inspections were last performed on this tube in 1988, during the original manufacturing baseline. The tube was classified as having no detectable degradation in the baseline examination. As a result of the lack of inspection history and unknown indication growth rate, this tube was conservatively plugged. As a preventive measure, the surrounding tubes were inspected using both bobbin coil and rotating pancake coil inspection probes. No additional indications were found.

SG 21 also was found to have four indications, contained within two tubes, of hot leg support plate wear. These indications were sized using qualified techniques and found to have wear indications ranging from 4% to 11% throughwall. As allowed by our technical specifications, these indications were left inservice.

No indications were detected in either SG 22 or SG 23 during the scheduled inspection.



In SG 24, tubes R33/C15, R33/C16, R33/C17 and R38/72 contained a total of six single volumetric indications, all located near the top of the hot leg tubesheet. The indications were characteristic of foreign object wear. A data history search found that the tubes were last examined during the original baseline inspection (1988) at which time that were classified as having no detectable degradation. The four tubes involved were subsequently plugged due to the lack of a qualified sizing technique. As a result of the foreign object concern, the eddy current inspection scope was expanded to include the tubes surrounding the indications as well as 100% of the tubes (two rows in) around the periphery. Eddy current testing did not produce evidence of a loose part near the four tubes in question. However, a possible loose part signal was reported in tubes R39/C69, R38/C70 and R38/C71. During an expanded secondary side visual inspection, a foreign object (weld wire) was removed from this area of the tube bundle.

Throughout the inspection program, all tubes with manufacturing burnish marks (MBMs) were reviewed against the 1988 baseline inspection. No changes were noted in any of these indications in any of the SGs.

A total of 90 dent indications, ranging in voltage from 3.0 to 16.24 volts, were reviewed in the four SGs. The vast majority of these signals fell into the 3 to 6 volt range, with only two dents exceeding 10 volts. Similar to our approach for MBMs, all dents reported during the U2R97 inspection were to be reviewed against the 1988 data. However, three dent signals could not be reviewed in this fashion as the baseline data would not duplicate from the digital tape to optical disc. These three dents were all believed to have been present during the baseline examination. This confidence is based upon the successful matchup of the remaining (87) dent signals and the design of our quatrefoil support plates which preclude inservice denting. All three of the subject dents were recorded as being less than four volts during the U2R97 inspection and, therefore, not believed to be significant. All of the remaining dent signals were confirmed to have been present in the baseline data.





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