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SUBJECT: Responds to NRC concern stated in 951120 ltr re terrain  
 mapping & terrain plots in analyzing rotating pancake coil  
 data, per GL 95-03.

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Docket Nos.: 50-315  
50-316

U. S. Nuclear Regulatory Commission  
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Gentlemen:

Donald C. Cook Nuclear Plant Units 1 and 2  
GENERIC LETTER (GL) 95-03:  
CIRCUMFERENTIAL CRACKING OF STEAM GENERATOR TUBES  
REQUEST FOR ADDITIONAL INFORMATION

The purpose of this letter is to respond to the NRC concerns regarding terrain mapping and terrain plots in analyzing rotating pancake coil (RPC) data.

The following is the concern stated in the enclosure to your letter to us dated November 20, 1995, and our response.

"During the Maine Yankee Outage in July/August 1994, several weaknesses were identified in their eddy current program as detailed in NRC Information Notice 94-88, "Inservice Inspection Deficiencies Result In Severely Degraded Steam Generator Tubes." In Information Notice 94-88, the staff observed that several circumferential indications could be traced back to earlier inspections when the data was reanalyzed using terrain plots. These terrain plots had not been generated as part of the original field analysis for these tubes. For the rotating pancake coil (RPC) examinations performed at your plant at locations susceptible to circumferential cracking during the previous inspection (i.e., previous inspection per your Generic Letter 95-03 response), discuss the extent to which terrain plots were used to analyze eddy current data. If terrain plots were not routinely used at locations susceptible to circumferential cracking, discuss whether or not the RPC eddy current data has been reanalyzed using terrain mapping of the data. If terrain plots were not routinely used during the outage

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and your data has not been reanalyzed with terrain mapping of the data, discuss your basis for not analyzing your previous data in light of the findings at Maine Yankee.

Discuss whether terrain plots will be used to analyze the RPC eddy current data at locations susceptible to circumferential cracking during your next steam generator tube inspections (i.e. the next inspection per your Generic Letter 95-03 response)."

#### Response

Terrain plot analysis is routinely used at the Donald C. Cook Nuclear Plant for steam generator tube RPC eddy current data analysis regardless of the inspection location. For the unit 1 steam generators, terrain plots were utilized to analyze RPC tube data collected during each of last three refueling outages. The locations typically inspected include the hot leg partial depth tube roll transitions, hot leg top of tubesheet region, and tube dents 5 volts or greater at support plate intersections. These three locations are potentially susceptible to circumferential cracking.

During the recent 1995 unit 1 refueling outage, eddy current tube inspections were conducted per our response to NRC Generic Letter 95-03 for locations identified to be susceptible to circumferential cracking. This included RPC inspection of any indication identified by the Cecco-5 probe coil inspection program for the hot leg tubesheet region and hybrid expansion joint (HEJ) sleeves in all steam generators. All hot leg tubesheet region indications detected by the Cecco-5 probe coil inspections at partial depth tube roll transitions and the top of tubesheet region were subsequently inspected by RPC. No indications were reported for the Cecco-5 inspection of the HEJ sleeves and therefore followup RPC inspection was not required. RPC inspection of dents 5 volts or greater was done as part of the 2 volt alternate repair criteria for tube indications at support plate intersections. RPC inspection of the U-bend sections for rows 1 and 2 tubes was also done in one steam generator. For each of the aforementioned RPC inspections terrain plots were used to analyze the RPC data.

Cook Nuclear Plant Unit 2 steam generator eddy current tube inspections for tube locations susceptible to circumferential cracking will be done as outlined in our initial response letter AEP:NRC:1166T dated June 27, 1995, to Generic Letter 95-03. The Cecco-5 probe coil will be used in the tubesheet region for hot leg tube expansion transitions. RPC inspection will be done for

Cecco-5 indications reported at this tube location. Analysis of the RPC data will include the use of terrain mapping.

It should be noted that the Cecco-5 probe is qualified for detection of circumferential indications in straight tube lengths, and is especially effective in the presence of dents and tube expansion transitions. However, terrain mapping techniques for Cecco-5 data have not yet been developed, so it is prudent to follow up any Cecco-5 indication with another technique, such as RPC with terrain mapping, to help characterize the indication.

Sincerely,

  
E. E. Fitzpatrick  
Vice President

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