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 MURLEY, T.E. Document Control Branch (Document Control Desk) *see Rpt*

SUBJECT: Forwards MT-MNA-035(91), "Metallurgical Investigation of
 Wall Thinning & Leakage of BMI Thimble Tubing at DC Cook
 Unit 2." Replacement thimble tubes will be chrome plated at
 tube surfaces.

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Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
THIMBLE TUBE ROOT CAUSE

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

Attn: T. E. Murley

July 15, 1991

Dear Dr. Murley:

The purpose of this letter is to respond to requests made by your staff during a meeting held on April 11, 1991 in your Rockville, Maryland offices, at which we presented a report regarding thimble tube wear mitigation activities at the Donald C. Cook Nuclear Plant. During that meeting we committed to provide you an updated status report and a copy of a Westinghouse report which contains the results from the hot cell laboratory examination of two thimble tubes taken from the Cook Nuclear Plant Unit 2 reactor. A copy of the Westinghouse report is attached. Six copies are being sent with Mr. Colburn's copy of this letter for NRC internal distribution and use.

Status Report

We have chosen to reposition or replace as many thimble tubes as necessary during the 1992 refueling outages to ensure that no thimble tube will develop a leak during the subsequent operating cycle for each Cook Nuclear Plant unit. Our thimble tube wear criteria for repositioning and replacement are currently 30% and 65% wall loss, respectively. If less than approximately 6 of the 58 thimble tubes in each unit require replacement, we may decide at that time to isolate those tubes using the isolation valve at the seal table and replace them at a later date.

Replacement thimble tubes will be chrome plated at tube surfaces corresponding to the locations in the reactor where the thimble

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tubes are susceptible to wear, i.e., the fuel assembly lower nozzle and the lower core plate area. Contracts for the purchase of chrome plated thimble tubes and for the manpower services to remove, reposition, and replace thimble tubes are currently in the AEPSC approval process.

We have also chosen not to install any hardware modifications to the lower core plate or fuel assembly lower nozzle to mitigate thimble tube wear at this time. We believe that the addition of the chrome plating will reduce the amount of thimble tube wear found at the Cook Nuclear Plant. After one cycle of operation for each Cook Nuclear Plant unit, we will eddy current inspect each thimble tube to quantify the benefit of the chrome plating and to determine if additional hardware changes to further mitigate thimble tube wear are required.

Westinghouse Hot Cell Laboratory Results

Attached is MT-MNA-035(91), "Metallurgical Investigation of Wall Thinning and Leakage of the BMI Thimble Tubing at D. C. Cook Unit 2", dated January 1991. The results presented in this report, which indicate that the thimble tube wear is caused by flow-induced vibration, provided the basis for our root cause evaluation determination.

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,



E. E. Fitzpatrick
Vice President

eh

Attachment

cc: D. H. Williams, Jr.
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J. R. Padgett
G. Charnoff
NFEM Section Chief
A. B. Davis - Region III
NRC Resident Inspector - Bridgman

