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 RECIP. NAME: RECIPIENT AFFILIATION
 DENTON, H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards request for exemption from requirements of Section
 III.0 of App R to 10CFR50 re fire protection, per util 820719
 ltr & 10CFR50.48.(c)(6). Modified oil collection sys for
 reactor coolant pumps meets intended safety function.

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December 30, 1982

AEP:NRC:0692D

Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
FIRE PROTECTION - 10 CFR 50, APPENDIX R, SECTION III.0

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

In our letter No. AEP:NRC:0692C dated July 19, 1982, we submitted a revised request for schedular exemption from the requirements of 10 CFR 50.48 with respect to Sections III.G, III.J, and III.O of Appendix R to 10 CFR 50. Specifically, we requested an exemption from 10 CFR 50.48(c) with respect to the requirements of Section III.O of Appendix R. We committed to provide you, by December 31, 1982, our plans and schedules to achieve compliance with Section III.O as required by 10 CFR 50.48(c)(5) and to file additional exemptions from Section III.O pursuant to 10 CFR 50.48(c)(6). The Attachment to this letter provides this information, describes the modifications we have taken for Unit 1 and are currently taking for Unit 2, and requests an exemption from those portions of the requirements of Section III.O of Appendix R to 10 CFR 50 where we believe the existing design of the oil collection system for the Reactor Coolant Pumps (RCPs) at the Donald C. Cook Nuclear Plant to be adequate and sufficient to meet its intended safety function.

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

Very truly yours,

R. F. Hering

R. F. Hering
Vice President

A006

/os
cc:(attached)

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cc: John E. Dolan - Columbus
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ATTACHMENT TO AEP:NRC:0692D

In our July 19, 1982 letter (AEP:NRC:0692C), we committed to re-evaluate the seismic characteristics of the existing oil drainage piping and collection tank installed in Units 1 and 2 of the Cook Plant and also to undertake an evaluation of the seismic capability of the RCP motor lube oil system. In the former evaluation, we committed to inspect the oil drainage piping during the next refueling outages of each unit and to undertake modifications to the oil drainage system as necessary. Both the re-evaluation of the seismic characteristics of the oil drainage piping and collection tank and the evaluation of the seismic capability of the motor lube oil system have been completed. Based on the results of these evaluations and with the exception of the exemptions we are requesting, we have concluded that the oil collection system installed at the Cook Plant meets the requirements of Section III.O of Appendix R. A general summary of the results of our evaluations, the subsequent modifications we have taken on Unit 1 and are currently taking on Unit 2, and the areas where we are requesting exemptions from the specific requirements of Section III.O of Appendix R is presented below.

Based on our evaluation of the oil drainage piping and collection tank, utilizing inputs from EDS Nuclear with respect to the seismic capability of the oil collection tank and inputs from Stevenson & Associates with respect to the oil drainage piping, it was decided that certain modifications were desirable to insure the adequacy of the system. The modifications included the addition of pipe supports (generally in the area of the RCPs), reinforcement of the lube oil collection tank, removal of the sight glass on the tank, sealing of the oil lift enclosures, and seal welding or socket welding of threaded piping connections.

The above modifications were incorporated into Unit 1 during the recent refueling outage (July-September, 1982). These same modifications, excluding seal welding, are being incorporated into Unit 2 during its current refueling outage. Consultation with Stevenson & Associates since the Unit 1 outage indicated that threaded connections which are not subject to vibration are seismically acceptable provided that the joint efficiency is reduced by a predetermined factor. The analysis was performed incorporating this criterion and the threaded joints were determined to be adequate. In addition, the threaded joints subject to vibration from the RCPs are being seal welded or replaced with socket welds.

To insure continued integrity of these systems, they will be inspected during each refueling outage in accordance with Plant Procedure 12 MHP 5030.001.003 ("Maintenance Procedure for Inspection of Reactor Coolant Pump Motor Oil Levels and Oil Spill Protection Integrity").

The oil collection system installed at the Cook Plant preceded the issuance of the Appendix R requirements. As such, there are aspects of our design which do not meet the specific requirements of Appendix R but which we believe will not prevent the system from fulfilling its intended safety function. Specifically:

A. The presently installed system incorporates an oil collection tank sized to hold the inventory of only one RCP motor. It is our contention that such a system is adequate based on the following:

1. A credible event which could cause simultaneous failure of two or more RCP motor lube oil systems is a seismic event. The results of our analysis indicate that the components of the RCP motor lube oil system are capable of withstanding a safe shutdown earthquake (SSE). In addition, Westinghouse's analysis of the RCP lube oil system has confirmed that the RCP motor was conservatively designed and the stresses under design basis earthquake (DBE) conditions are well within the allowable stresses giving reasonable assurance that the RCP motor oil system (lift pump, oil coolers, etc.) can withstand a DBE and maintain its integrity.
2. Should a failure of more than one RCP motor lube oil system occur, the oil collection tank would overflow to the lower containment floor. The system uses a synthetic oil (Mobil SHC 824) which has a flash point of 480°F and an ignition temperature of about 700°F. There is no source of heat at the floor of the lower containment capable of igniting the oil.

B. Portions of the lube oil collection system are not designed to withstand a design basis accident (LOCA and Steamline Break) ;however, it is our contention that the system is adequate based on the following:

1. During normal operation, the lube oil collection system will function to collect drips and drains and route these to the oil collection tank. In addition, the RCP motor areas are protected by a fire sprinkler system.
2. As described previously, the lube oil collection system is adequate to perform its function during and after a SSE.
3. In the unlikely event of a design basis accident, some portions of the lube oil collection piping may be susceptible to failure. However, such failure would not result in a fire hazard because of the characteristics of the synthetic oil and the operation of the

containment spray system, a safety grade system, acting as an effective fire suppression system.

Although the lube oil collection system, as described above, does not meet all the requirements of 10 CFR 50 Appendix R, Section III.0, we believe that the containment area is adequately protected from a fire which may initiate from a RCP lube oil collection system failure. We therefore request that, pursuant to the provisions of 10 CFR 50.48(c)(6), an exemption from the requirements of Section III.0 of Appendix R to 10 CFR 50 be granted to us, such that it be acknowledged that the oil collection system for the RCPs installed at the Cook Plant and modified as described in this Attachment is adequate and sufficient to meet its intended safety function.