Omaha Public Power District
1623 Harney Omaha, Nebraska 68102
402/536-4000

March 6, 1985
LIC-85-051

Mr. James R. Miller, Chief
Office of Nuclear Reactor Regulation
Division of Licensing
Operating Reactors Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: Docket No. 50-285

Dear Mr. Miller:

Fort Calhoun Cycle 10 Reload

The Omaha Public Power District is currently initiating reload analyses associated with our Cycle 10 core for Fort Calhoun Station. The Cycle 10 core is being designed to further reduce the flux to reactor vessel belt line welds. The enclosed figure shows the assemblies in which part-length neutron absorber rods will be placed. These assemblies are the primary neutron sources for the reactor vessel welds that have received the greatest neutron fluence in the past. The assembly locations in which the part-length neutron absorber rods are placed may be varied from cycle to cycle to optimize the neutron flux reduction to the welds. The part-length neutron absorber rods will be similar in design to CEA fingers. The B_4C neutron absorber stack is axially centered at the core midplane and has a length equivalent to 50% of the active core height.

The insertion of the part-length neutron absorber rods in the Cycle 10 core will result in increases to radial peaking factors, F_R^T and F_{xy}^T, which will require changes to the District's approved reload methodology and the Fort Calhoun Station Technical Specifications. These changes are discussed in the following paragraphs.

- Approved Reload Topical: OPPD-NA-8301-P, "Omaha Public Power District, Nuclear Analysis, Reload Core Analysis Methodology Overview."

Anticipated Changes

1. The part-length neutron absorber rod design will be included in the Fuel System Design section by reference to the appropriate report. This report will be prepared by the absorber rod designer and manufacturer (Combustion Engineering) and will document the design of the rods using currently approved methodologies. This report will be included in our reload core evaluation submittal.

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Anticipated Changes (Continued)

2. The anticipated increase in the value of the integrated radial peaking factor, F_R^T, will necessitate a change in the DNBR associated LSSS and LCO. To accommodate the increased peak, the District plans to change the existing "early system" TM/LP trip module at Fort Calhoun Station to a "standard system" TM/LP module. The "standard system" incorporates the ASI in the calculation of this P_{VAR} equation. Changes to the LSSS setpoint methodology will be incorporated into the topical report by the appropriate reference to CENPD-199, Rev. 1-P. The District also intends to use the incore detector system to monitor the DNBR LCO. The system will be similar to the Better Axial Shape Selection System described in CENPD-199, Rev. 1-P. The District will submit the appropriate revisions to the approved topical report and appropriate references.

- Approved Reload Topical: OPPD-NA-8302-P, "Omaha Public Power District, Nuclear Analysis, Reload Core Analysis Methodology, Neutronics Design Methods and Verification."

  Anticipated Changes: No changes to this topical report are anticipated.

- Approved Reload Topical: OPPD-NA-8303-P, "Omaha Public Power District, Nuclear Analysis, Reload Core Analysis Methodology, Transient and Accident Methods and Verification."

  Anticipated Changes: No changes to this topical report are anticipated.

- Technical Specifications

  Anticipated Changes:

  Section 1.3

  Change to reflect installation of "standard system" TM/LP module.

  Section 2.10.4(1)(a)

  Insert provision for directly monitoring LHR using the new LCO monitoring system similar to the Better Axial Shape Selection System.

  Section 2.10.4(2)

  Delete the T_q term and add requirement that F_R^T is measured using a full core power distribution map.

Anticipated Changes: (Continued)

Section 2.10.4(3)

Delete the T_q term and add requirement that F_{xy}^T is measured using a full core power distribution map.

Section 2.10.4(4)

Make this section applicable only when monitoring LHR and DNBR LCO's using the excore detectors.

Section 2.10.4(5)

Insert provision for monitoring the DNB LCO using the new LCO monitoring system similar to Better Axial Shape Selection System and make current specifications applicable when new system is not operational.

The District previously committed to providing reactor vessel fluence distributions with future reloads. The District has recently undertaken extensive investigations to determine the chemical compositon of the reactor vessel welds whose RT_{NDT} is expected to exceed the PTS screening criteria prior to the expiration of the Fort Calhoun license. Until these investigations are complete we do not believe it is appropriate to perform additional vessel fluence calculations, and we do not plan to submit fluence distribution information with the Cycle 10 reload core safety evaluation.

In accordance with Generic Letter 84-20, the District will submit the changes to our approved topical reports six months prior to the Cycle 10 restart date. The reload core safety evaluation and associated Technical Specification changes will be submitted three months prior to the Cycle 10 restart date. The Cycle 10 restart is currently scheduled for the first week of December 1985.

R. L. Andrews
Division Manager
Nuclear Production

RLA/JKG/lp

Enclosure

cc: LeBoeuf, Lamb, Leiby & MacRae
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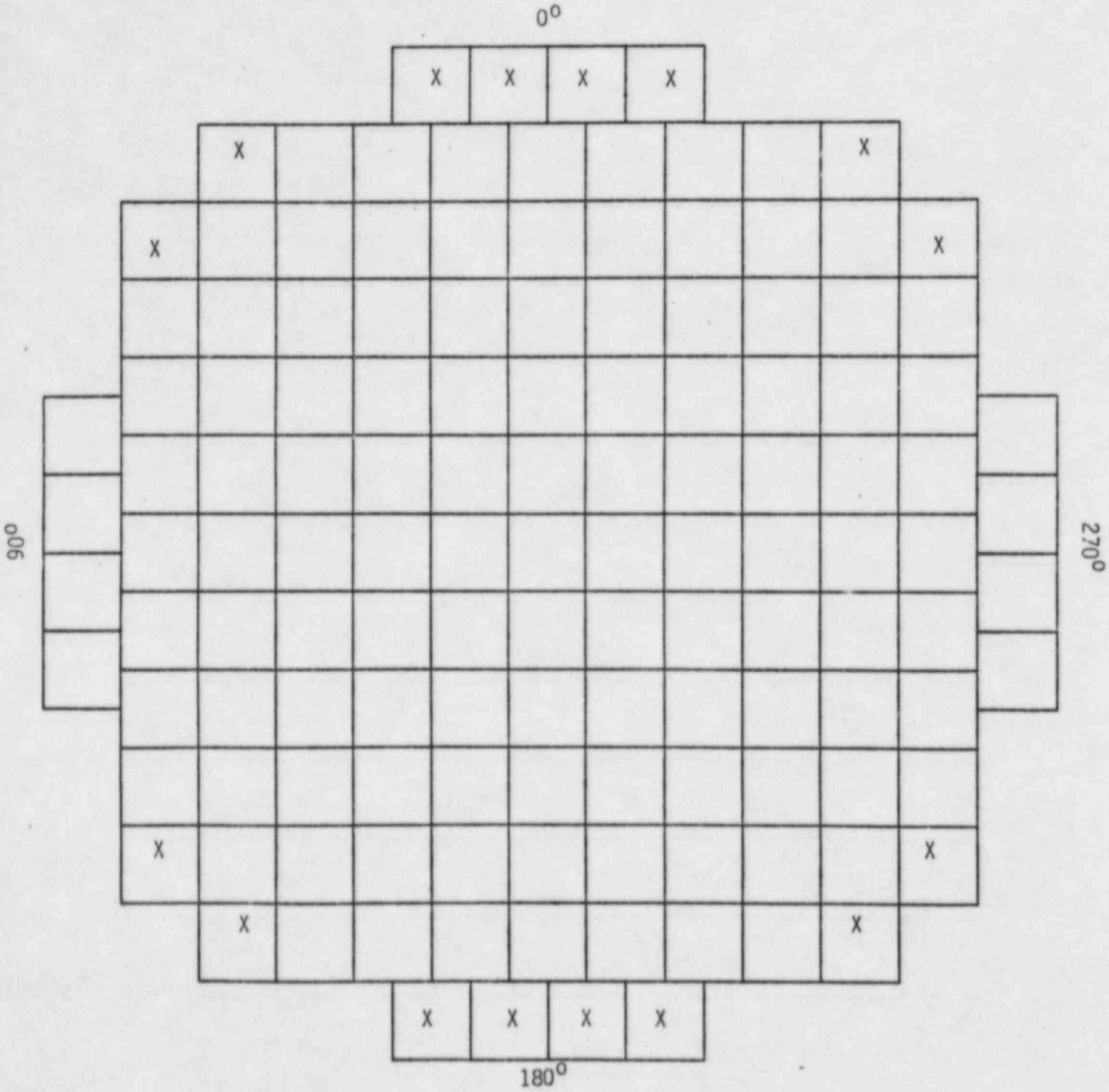
E. G. Tourigny, Project Manager
L. A. Yandell, Senior Resident Inspector

CYCLE 10

LOCATION OF PART LENGTH NEUTRON ABSORBER RODS



X Part Length Neutron Absorber Rods
(One in each corner guide tube)