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Address Reply to: Post Office Box 767
Chicago, Illinois 60690

April 6, 1979

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Dresden Station Unit 2
Response to request for additional information concerning Proposed Amendment to Operating License DPR-19 to Support Reload No. 4, Cycle 7

Reference (a): C. Reed letter to Director of Nuclear Reactor Regulation dated January 15, 1979

Dear Sir:

Reference (a) transmitted our proposed amendment to the License and Appendix A, Technical Specifications, to support Reload No. 4 for Dresden Unit 2.

In a conference call on April 3, 1979 with Commonwealth Edison and the NRC Staff, additional information concerning the startup test program for Reload No. 4, Cycle 7 was requested. Enclosure I to this letter provides our response to that request, indicating the test program that will be followed prior to and during startup and power operation at the beginning of Cycle 7.

Please address any additional questions you may have concerning this matter to this office.

Very truly yours,

C. Reed

Cordell Reed
Assistant Vice-President

enclosure

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ENCLOSURE I

DRESDEN UNIT 2

CYCLE 7 STARTUP TEST PROGRAM

Subsequent to each refueling outage, Dresden Station routinely conducts a comprehensive startup test program to provide assurance that the core and its instrumentation conform to the design. This program includes all required Technical Specification tests such as Shutdown Margin Demonstration, Control Rod Scram Timing, Control Rod Coupling Verification, and Reactivity Anomaly Comparisons. Several nuclear-related systems such as the TIP machines, LPRM's, Core Flow System and Process Computer are also routinely checked and/or calibrated during the startup test program. In addition to the above, the following tests will also be performed:

1. CORE LOADING VERIFICATION

I. Purpose: The purpose of this test is to visually verify that the core is loaded as intended.

II. Description: An underwater television camera or suitable viewing device will be employed to verify both proper orientation and location of each fuel assembly in the reactor core. At least one independent person must also either participate in performing the verification or review a videotape of the verification prior to startup.

III. Criteria and Actions: The as-loaded core must conform with the referenced core upon which the licensing analysis was performed. Any discrepancies discovered in the loading will be promptly corrected and the affected areas re-verified to be properly loaded prior to startup.

Conformance to the reference loading will be demonstrated by a permanent core serial number map, and documented by the signatures of the verifiers.

2. CONTROL ROD OPERABILITY AND SUBCRITICALITY CHECK

I. Purpose

This test is performed to assure that no gross local reactivity irregularities exist and that all operable control rods are functioning properly.

II. Description

The control rod mobility test will be performed after the four bundles surrounding the given control rod are loaded. The subcriticality check will be performed after the core loading has been completed. Performance of this test will assure that the core is not constituted so as to interfere with the movement of a control rod. This test will provide assurance that criticality will not occur due to the withdrawal of a single rod. Each control rod in the core will be withdrawn and inserted one at a time to assure its mobility with drive pressure. Also, the nuclear instrumentation will be monitored during the movement of each control rod to verify subcriticality.

III. Acceptance Criteria and Actions to be taken if the criteria is not met

For those control rods that will not move under drive pressure, appropriate repairs or adjustments will be made so that the drive pressure criteria can be met or the rod will be declared inoperable as described in the technical specifications. If criticality were to be achieved by the withdrawal of a single control rod, the control rod would be inserted and all further rod movements would cease and investigation would be conducted to determine the cause.

3. TIP SIGNAL UNCERTAINTY TEST *

I. Purpose: The purpose of this test is to determine the Traversing In-Core Probe (TIP) system total uncertainty using a statistical analysis.

II. Description: Total TIP signal uncertainty consists of geometric and random noise components. Data to perform the analysis is obtained at intermediate power levels and/or power levels greater than 75% with the reactor operating at steady state in an octant symmetric rod pattern (if Possible). This data will be additionally used to perform a gross TIP symmetry check, which is a comparison of integrated readings from symmetrically located TIPs.

III. Criteria and Actions:

a) The total TIP signal uncertainty (random noise plus geometric uncertainties) obtained by averaging these uncertainties for all data sets should be less than 9%. A minimum of two or up to six data sets may be used to meet the above criterion. If the 9% criterion is not met and the calculations have been rechecked, the calibration of TIP system (e.g. axial alignment) shall be checked. It may be necessary to omit data pairs from the analysis if exact octant symmetry is not attainable in fuel loading or control rod patterns. In such cases, offline code predictions of exposure or control rod induced asymmetry may prove useful in explaining the uncertainty.

b) The gross check of TIP signal symmetry should yield a maximum deviation between symmetrically located pairs of less than 25%. If the criterion cannot be met, the cause of the asymmetry must be investigated and an explanation attempted as per Criterion a).

* This test is not applicable to units which:

a) do not have Traversing In-Core Probe (TIP) systems,
b) do not have an octant symmetric core design, or
c) cannot operate with an octant symmetric rod pattern.

4. CRITICAL EIGENVALUE COMPARISON

I. Purpose

The purpose of this test is to compare calculated and actual critical rod patterns in the cold, Xenon free, beginning of cycle condition.

II. Deacription

An actual critical rod pattern will be compared to a calculated critical rod pattern at the beginning of each cycle. Appropriate period and moderator temperature corrections shall be made.

III. Criteria and Actions

The Technical Specification shutdown margin shall be met.

If the corrected difference between the calculated and actual critical point exceeds 0.01 $\Delta k/k$ operation may continue, but an investigation should be made to determine the cause of the difference.