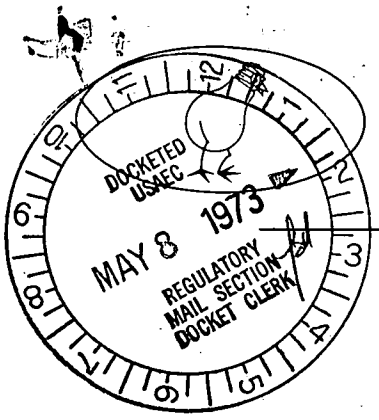

Regulatory File Cy.

Commonwealth Edison Company

ONE FIRST NATIONAL PLAZA ★ CHICAGO, ILLINOIS

Address Reply to:

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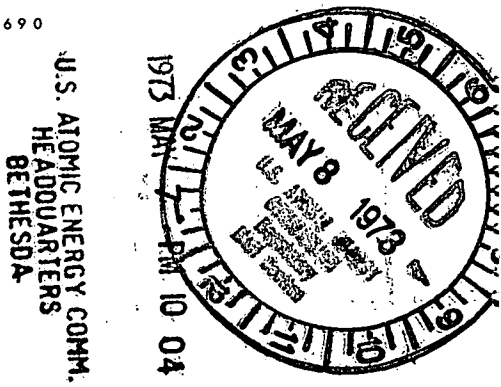
May 1, 1973



Mr. J. F. O'Leary, Director
Directorate of Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

Subject: Supplement A to Proposed Modification 73-2 to Dresden Units 2 and 3 Safety Analysis Report, "Dresden Unit 3 First Reload Fuel", AEC Dkt 50-249

Dear Mr. O'Leary:

Mr. D. J. Skovholt, in his letter of April 11, 1973 to L. D. Butterfield, Jr., acknowledged that the installation of approximately 28 Reload 1 Fuel assemblies in the Dresden Unit 3 core did not require a change to the Technical Specifications and that this fuel did not introduce new considerations in the fuel densification evaluation presently underway. Additional information was requested, and volunteered in Proposed Modification 73-2 submitted March 5, 1973, concerning the results of the scram reactivity analysis. Also, supporting information concerning the General Electric Company's proprietary hydrogen getter, installed in the Reload 1 assemblies, was requested. This report supplies the responses to the questions as well as notification of an increase in the number of Reload 1 assemblies to be installed during the refueling outage.

The information requested concerning the General Electric Company's proprietary hydrogen getter is supplied as Attachment 1. The General Electric Company has developed this material and design at their expense and believes that disclosure of this information to the public is not required. Furthermore, General Electric believes that their position in the nuclear industry due to improved fuel design and operations which may accrue from the use of this material would be jeopardized if the

details of this material are disclosed. Therefore, the Commonwealth Edison Company and the General Electric Company request that Attachment 1 be withheld from the general public, as allowed by 10 CFR 2.790(b).

As a result of the testing of the Dresden Unit 3 core for failed fuel assemblies, it was decided that more than 28 Reload 1 assemblies would be required for the refueling outage presently underway. Analyses indicated that 52 Reload 1 assemblies could be inserted into the periphery of the core without significantly altering the safety evaluation performed for the 28 reload batch. The 52 reload batch safety evaluation has been reviewed by the Dresden Station Review Board and the conclusion reached that the 52 reload batch presents no unreviewed safety question significantly different than the safety evaluation for the 28 reload batch. Therefore it is now planned to install 52 Reload 1 assemblies during this refueling outage on the periphery of the Dresden 3 core in a manner typical of the 28 reload batch discussed in Modification 73-2.

The Dresden 3 core will be operated within the limits of the safety analyses presently provided in the Final Safety Analysis Report at the beginning of the forthcoming cycle. A new analysis has been made of the scram reactivity curve for the coming cycle at Dresden 3 using the present scram reactivity model in place of the original linear reactivity insertion rate model to determine the exposure at which this curve would be more limiting than the FSAR curve used in the reload license submittal. The results of this analysis indicate that the plant can start-up and run to approximately 750 MWD/t into the cycle using the normal control rod sequences, at which time the limiting scram reactivity curve in the FSAR is reached. The analysis was based on the 28 new fuel bundle loading pattern. The 24 additional new fuel bundles on the core periphery will have little effect on the limiting exposure, as the increase in reactivity due to the 24 additional reload bundles will be offset by the gadolinium content in these bundles. The limiting control rod notch inventory which corresponds to the 750 MWD/t limitation will be defined after operating data is obtained early in the next cycle.

After the limiting scram reactivity curve in the FSAR is reached, a preliminary plan for operating Dresden 3 would be to coast down in power by holding the control rod inventory constant

until a power level is reached which gives acceptable transient results with another modified control rod notch inventory. The control rods could then be withdrawn to the new limiting inventory to maintain that power level. A preliminary analysis of the turbine trip without bypass transient, which is generally the most limiting, indicates that the plant could be operated up to approximately 97% of rated core power of 2527 MWT to the new rod notch inventory by using the 1967 product line scram time specifications for control rod drives. Confirmation of this program will be submitted by June 18, 1973, which is well before the additional 750 MWD/t exposure is reached.

Three signed originals and 37 copies of this report are supplied for your use.

Very truly yours,

Byron Lee Jr.

Byron Lee, Jr.
Assistant to the President

SUBSCRIBED and SWORN to before me this 1st day of May, 1973.

Brenda Bammer
Notary Public

ATTACHMENT 1

PROPRIETARY

DESCRIPTION OF HYDROGEN GETTERS FOR DRESDEN 3 RELOAD FUEL

A hydrogen getter is located in the uppoer plenum of each fuel rod in the Generic B Reload fuel. The hydrogen getter is an added precaution against clad hydriding that might result from incomplete removal of hydrogen impurities in the fuel rod during fabrication; such extraneous hydrogen impurities will combine chemically with the getter in preference to zircaloy cladding.

The getter is composed of chips of a zirconium alloy located in a stainless steel container in the upper plenum. Extensive testing has shown that the getter is effective for temperatures beyond the range anticipated for a BWR fuel rod plenum and will not release hydrogen during normal operation or under transients or accident conditions. The getter material chip size has been selected such that the getter will not undergo a chemical reaction of such a nature as to contribute to the severity of transients and accidents.

The "getter" operating conditions are defined by the coolant temperature at the plenum area of the rod. Under normal operating conditions the plenum temperature is 550 F to 600 F. During abnormal transients and accident conditions the plenum region temperatures range from 300 F to 600 F.

The "getter" chips are inactive below 450 F and active in absorbing and retaining hydrogen from 450 F to beyond 600 F. The corrosion products of these reactions are confined within the stainless steel jacket containing the "getter". The rate of reaction of the "getter" with air, steam, or hydrogen is not pyrophoric in the temperature range experienced in a BWR fuel rod.

Therefore, the getter can be expected to combine chemically with extraneous hydrogen during the normal operation, and not to release hydrogen or otherwise contribute to the severity of abnormal transients or accidents.

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