

ISHAM, LINCOLN & BEALE
COUNSELORS AT LAW

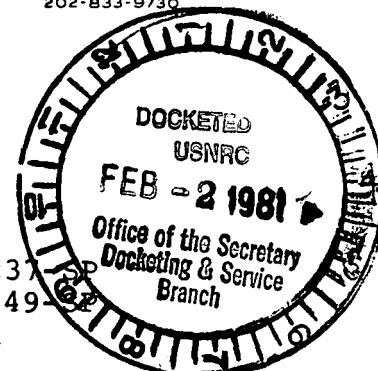
ONE FIRST NATIONAL PLAZA FORTY-SECOND FLOOR
CHICAGO, ILLINOIS 60603
TELEPHONE 312-558-7500 TELEX: 2-5288

January 30, 1981

WASHINGTON OFFICE
1120 CONNECTICUT AVENUE, N. W.
SUITE 325
WASHINGTON, D. C. 20036
202-833-9730

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)
COMMONWEALTH EDISON COMPANY)
(Dresden Station, Units 2 & 3))

Docket Nos. 50-237)
50-249)
(Spent Fuel Pool)
Modification)

Dear Administrative Judges:

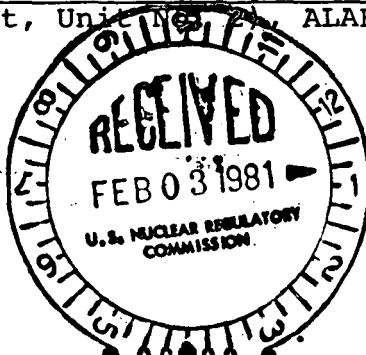
Enclosed is Applicant's supplemental testimony in respect of the fuel channel bowing matter. As you know, the concern raised by Applicant at the hearings in November was that there might be potential interference or rubbing between the walls of certain minimally-sized storage locations within the proposed racks and channeled fuel assemblies with large irradiation-induced deformation of the channels (i.e., "channel bowing"). Upon further analysis, Applicant has concluded that cases of such interference, while unlikely, are not incredible, and therefore the consequences must be addressed.^{1/} The enclosed testimony establishes that the consequences would not be significant.

Dr. O'Boyle's testimony explains what fuel channel bowing is and gives the likelihood and magnitude of expected bowing.

Jim Gilcrest of Quadrex/NSC describes the potential interferences between channeled spent fuel assemblies and the proposed Dresden spent fuel racks, assuming the unlikely combination of worst case fabrication tolerances

1/ See, e.g., Florida Power and Light Company (St. Lucie Nuclear Power Plant, Unit 1), ALAB-603, 12 NRC 30 (1980).

8102060 306
T



DS03
S 1/1

and worst case channel bowing. Mr. Gilcrest testifies that under these conditions the maximum force needed to overcome friction and lift the channelled fuel assembly from the rack would be only 1190 pounds (this includes the 680 pound weight of the assembly). Due to a logistical problem, Mr. Gilcrest's testimony is not accompanied by his affidavit. The affidavit will be submitted next week.

Carl R. Mefford of General Electric Company, who is an expert on the mechanical design of nuclear fuel, explains that G.E. fuel and channels will not be harmed by the loads described in Mr. Gilcrest's testimony.

Mr. Mefford's testimony is limited to G.E. fuel components since Applicant cannot provide G.E. with information relating to the structural and mechanical properties of fuel and fuel channels manufactured by G.E.'s competitors. Dr. O'Boyle therefore testifies that the different fuel assemblies and fuel channels used or to be used in the future at Dresden Units 2 and 3 are sufficiently similar that Mr. Mefford's conclusions can be applied.

Finally, Ron Ragan, assistant superintendent of Dresden Station, describes the grapple interlock and fuel handling procedures which will ensure that excessive forces will not be applied to a channelled fuel assembly if one should experience interference in the proposed racks. Mr. Ragan also explains that in view of the further analysis which has been done, Edison has decided that it is unnecessary to implement Dr. Draley's previous recommendation concerning periodic mandrel testing of selected storage locations after installation of the proposed racks in the Dresden spent fuel pools.

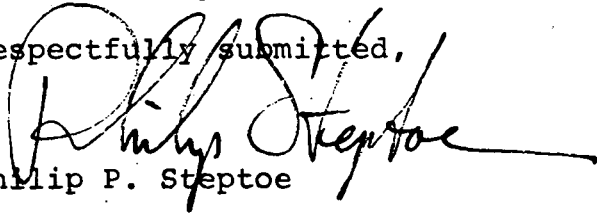
Also enclosed is the affidavit of Kin Wong of Quadrex/NSC, addressing a matter unrelated to fuel channel bowing. Applicant has entered into a requirements contract with Exxon Nuclear Corporation for future reloads of nuclear fuel for Dresden Units 2 and 3. Applicant received the final nuclear design of the first Exxon reload in late November, 1980. The various revisions of the Licensing Report (including Revision 5, which is being mailed to the Board under separate cover) do not include a criticality analysis of the Exxon fuel. As Dr. Wong's affidavit explains with the Exxon fuel K_{eff} in the proposed racks would slightly

January 30, 1981
Page Three

exceed 0.95 for the conditions, assumptions, and uncertainties listed in the Licensing Report at page 3-17 (one out of 32 absorber plates missing, plus one extra assembly at side of rack, plus all racks in contact with each other, plus all other uncertainties shown in Licensing Report table 3.3-1). However, as Dr. Wong goes on to point out, this set of assumptions, conditions and uncertainties is not required by the NRC Staff guidance document (attached to his affidavit) which establishes the requirement that K_{eff} be less than 0.95. While this matter is not related to any of Intervenor's contentions, and even though the NRC Staff has not yet approved the use of Exxon fuel in the Dresden reactors, Applicant is bringing it to the Board's attention in accordance with the tenets of full disclosure as articulated in Duke Power Company (William B. McGuire Station, Units 1 and 2), ALAB-143, 6 AEC 623(1973).

The Board has not established a schedule for future proceedings in this matter. Applicant will contact the other parties in a few weeks, after they have had an opportunity to review this submittal, and we will try to agree upon such a schedule, following which we will arrange a conference call to obtain the Board's approval.

Respectfully submitted,


Philip P. Steptoe

PPS:kb
Atts.

CC: Service List