UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

50-237

Docket No. 50-249

JUL 24 1970

Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Attention: Mr. Byron Lee, Jr.
Assistant to the President

Gentlemen:

During its meeting held on July 9-11, 1970, the Advisory Committee on Reactor Safeguards completed its review of your application for a license to operate Unit 3 of the Dresden Nuclear Power Station. A copy of the Committee's report, dated July 17, 1970, is enclosed. In its report the Committee made comments on certain matters that will require additional information or action on your part prior to licensing of Unit 3.

In this regard, we will need your responses to each of the Committee's concerns. These include provision for necessary instrumentation in the containment for remote monitoring of the containment atmosphere, measures taken to assure continued integrity and isolability of the small-diameter instrument lines, your plans and programs for submission of a proposed design for hydrogen control and purging, information on the adequacy of the biological shield to accommodate the effects of a safe end rupture or nozzle leak of equivalent cross-section, your schedule regarding the completion of the study of anticipated transients in the presence of a failure to scram resulting from a systematic or common mode failure, and the possible need for design modifications to make tolerable the consequences of such a transient. In addition, we will need your plans on the formulation of an inspection and surveillance program for the replaced and/or repaired furnace-sensitized stainless steel components in the Unit 3 reactor pressure vessel, and your plans to modify the design of the pressure sensors in the low pressure core cooling interlock in the automatic relief system. In this latter regard, please indicate what action you propose to take on Unit 2.

Please note the comments of Drs. Stratton and O'Kelly regarding their opinions on the undesirability of inerting. As we have indicated to you, inerting will be required for both Units 2 and 3; however, because it will

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also be necessary that you propose a system that can adequately cope with the effects of hydrogen that will be generated as a result of radiolysis following a loss-of-coolant accident, you may wish to include in this design proposal ways and means to cope with excess hydrogen that may be generated from metal-water reactions. The effectiveness of such a system to cope with all means of hydrogen generation could affect the decision to require inerting for Units 2 and 3.

We will need your responses to the items raised in the Committee's letter as soon as possible to complete our review of Dresden Unit 3 in time to meet your anticipated fuel loading date which we understand would be September 15, 1970.

Sincerely yours,

Original Signed by
Peter A. Morris

Peter A. Morris, Director
Division of Reactor Licensing

Enclosure:
ACRS Report for Unit 3

cc: Arthur C. Gehr, Esquire
Isham, Lincoln & Beale
Counselors at Law
72 West Adams Street
Chicago, Illinois 60690

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
UNITED STATES ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

July 17, 1970

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: REPORT ON DRESDEN NUCLEAR POWER STATION UNIT 2

Dear Dr. Seaborg:

At its 123rd meeting, July 9-11, 1970, the Advisory Committee on Reactor Safeguards completed its review of the Commonwealth Edison Company's assessment of the condition of furnace-sensitized stainless steel components in the primary system of the Dresden Nuclear Power Station Unit 2, and the possible need for additional inspection or preventive measures. During the review, this matter was considered at Subcommittee meetings held on May 22, 1970, and July 7, 1970, and during the 122nd ACRS meeting, June 11-13, 1970. In the course of these meetings, the Committee had the benefit of discussions with representatives and consultants of Commonwealth Edison Company, General Electric Company, and the AEC Regulatory Staff. The Committee also had the benefit of the documents listed. The Committee previously discussed this project in an operating license report dated September 10, 1969.

Normal procedures for most reactor pressure vessels, including the Dresden Unit 2 vessel, have been to join the austenitic stainless steel safe ends to the nozzles prior to the stress relieving heat treatment. This heat treatment sensitizes the safe ends, which makes the steel less resistant to certain types of corrosion. Sensitized austenitic stainless steels in this condition have given reasonably satisfactory service over many reactor-years of operation.

Recently, leaks developed in sensitized safe ends of two operating reactors. The causes of the leaks have been studied exhaustively, and it is concluded by the licensees that the leaks were caused by unusual circumstances that need not have existed.

In view of this experience, an extensive inspection program has been proposed for the Dresden Unit 2. This program includes inspection of all safe ends during the current shutdown and during the first and second refueling periods; additionally, the safe ends which contain nonflowing coolant will be inspected nine months after start-up and nine months after the first refueling. The Committee believes that this proposed program should be implemented to the satisfaction of the Regulatory Staff.

The two core spray system nozzle safe ends of the Dresden Unit 2 reactor vessel are in certain respects similar to one of those referred to above which cracked and leaked. The Committee suggests that consideration be given to replacement of the two core spray nozzle safe ends with unsensitized steel.

The applicant has agreed to provide means to remove gases from high points of the core spray piping system. A review should be made of other high points in nonflowing parts of the system and means should be provided, if necessary, to remove gases that could become trapped at such points.

The Committee believes that an independent check should be made of stresses in the as-built piping of the primary system, and that displacements should be observed in the hot condition.

Operation of the leak detection and location systems presently installed should be reviewed and modified as appropriate to obtain the maximum speed and sensitivity for detection of leaks.

The Committee also believes that the Regulatory Staff should assure itself that the biological shield surrounding the reactor vessel can withstand the pressure that could be developed by a safe end rupture or a nozzle leak of equivalent cross section, or that failure of the shield would have no unacceptable consequences.

Subject to these comments, and to acceptable resolution by the Regulatory Staff of questions raised as a result of recent operational transients, and if due attention is paid to the items discussed in the previous Committee report of September 10, 1969, the

Committee reaffirms its belief that there is reasonable assurance that the Dresden Nuclear Unit 2 can be operated at power levels up to 2527 MW(t) without undue risk to the health and safety of the public.

Sincerely yours,

Joseph M. Hendrie
Chairman

References

1) Commonwealth Edison Company letter dated July 9, 1970; Additional Information Relative to Dresden Unit 2

2) Commonwealth Edison Company letter dated July 6, 1970; Additional Information Relative to Provisional Operating License DPR-19 for Dresden Unit 2 with attached exhibits