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JUL 17 1970

Docket No. 50-237

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

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

Gentlemen:

Recent developments regarding the use of furnace-sensitized stainless steel in the Dresden Unit 2 reactor pressure vessel and the June 5, 1970 depressurization incident were discussed with representatives of your company and the General Electric Company at a meeting held on July 8, 1970. At that time we indicated that additional information regarding these matters would be necessary for our review before resumption of power operation. The specific information required is listed in the enclosure to this letter.

We would be glad to discuss and clarify any matters related to the foregoing request if you wish.

Sincerely yours,

Original Signed by
Peter A. Morris

Peter A. Morris, Director
Division of Reactor Licensing

Enclosure:
Request for Additional Information

cc: Arthur Gehr, Esquire
Isham, Lincoln & Beale
Counselors at Law

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See attached sheet for other concurrences

OFFICE ▶	DRL:BWR-2	DRL				
SURNAME ▶	RLTedesco/rgl	PAMorris				
DATE ▶	7/17/70	7/17/70				

Form AEC-318 (Rev. 9-53) U.S. GOVERNMENT PRINTING OFFICE: 1969—O-364-598

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Gentlemen:

Recent developments regarding the use of furnace-sensitized stainless steel in the Dresden Unit 2 reactor pressure vessel and the June 5, 1970 depressurization incident were discussed with representatives of your company and the General Electric Company at a meeting held on July 8, 1970. At that time we indicated that additional information regarding these matters would be necessary for our review before resumption of plant power operation. The specific information necessary is listed in an enclosure to this letter.

We urge you to respond in an expeditious and complete manner. We will be available to discuss and clarify any matters related to the foregoing request with you if necessary.

Sincerely yours,

Peter A. Morris, Director
Division of Reactor Licensing

Enclosure:
Request for Additional Information

cc: Arthur Gehr, Esquire
Isham, Lincoln & Beale
Counselors at Law

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OFFICE ▶	DRL:BWR 2	DRL:BWR 2	DRL:BWR	DRL		
SURNAME ▶	VStello:gl	RLTedesco	RSBoyd	PAMorris		
DATE ▶	7/16/70	7/16/70	7/16/70	7/ /70		

COMMONWEALTH EDISON COMPANY

DOCKET NO. 50-237

DRESDEN UNIT 2

ADDITIONAL INFORMATION REQUIRED

1. On page VIII-6 of "Special Report of Incident of June 5, 1970," it is stated that a new design temperature of 320°F has been established for the primary containment. Previously, the design temperature had been established at 281°F. Accordingly, provide analyses to show that the various structural elements, including penetrations, can withstand the effects of the higher temperatures and provide the results of analyses to show that this new design temperature is the maximum temperature which could be experienced within the primary containment. Include the effect of containment spray operation in the analyses. In addition, for equipment within the containment which is required to remain operational during such an incident as occurred on June 5, 1970, provide appropriate test results or other applicable data that demonstrate that such components can withstand the incident environment. The effects of a higher design temperature on the allowable primary containment leak rate should also be discussed.

   Based on the data provided in the "Special Report of Incident June 5, 1970," it appears that the leak tightness of the primary containment could have deteriorated. Accordingly, discuss the measures you have taken or will take to assure that the leak rate of the primary containment is within the limits of the Technical Specifications. Your discussion should include consideration of local tests as well as an integrated leak rate test of the primary containment.

2. Following the incident, the primary containment atmosphere was vented through the standby gas treatment system. The pressures and temperatures that the standby gas treatment system experienced during the venting operation are not stated in your report. These data should be provided and compared to the conditions for which the system was designed. In the event that design parameters were exceeded, discuss the inspection and maintenance actions that were performed that assure that the system is now capable of performing its design function and that design parameters will not again be exceeded.

   Also describe the revisions to procedures or equipment that have been implemented to prevent use of this system until the containment atmosphere is known to be within design conditions for the standby gas treatment system. The desirability of appropriate interlocks on the

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vent line isolation valves should also be included in the discussion as well as your plans to require operability of necessary instrumentation to evaluate the containment atmosphere during incident conditions. Redundancy aspects of such instrumentation should also be discussed.

3. Page VI-7 of June 5 Incident Report provides a discussion of the mechanisms which could have caused the safety valves to lift. It is stated that if waterhammer were the responsible mechanism for lifting the safety valves a pressure rise of 225 psi above system pressure is calculated to have occurred. If the other mechanism discussed on page VI-7, i.e. the possibility of a pressure pulse in the steam lines due to rapid condensation of trapped steam, were responsible, what pressure pulse would occur? What is the maximum pressure pulse that would occur by either, or a combination of, these postulated events? Compare these pressures to the design and hydrostatic test pressure of the main steam piping system.

4. Transient and accident analyses presented in the FSAR do not consider the compressibility effects of the steam volume within the reactor vessel. Provide the results of analyses that show that such effects will not result in unacceptable consequences for the various accident and transient conditions.

5. Describe the preoperational test program conducted for the isolation condenser. Discuss the results of this test with regard to demonstrating that the isolation condenser met its design characteristics.

6. During the incident, the steam discharged through the safety valves impinged on various components within the primary containment. Provide a sketch that shows which components were exposed to the steam jet and provide resulting pressure loadings to which such components were subjected. Relate these loadings to those included in design evaluations. Include in this evaluation the change (due to a heated valve and springs) in setpoints that could have resulted from the safety valves that were subjected to the steam jet.

7. Provide an evaluation of the feedwater controller operation during the incident conditions for both the automatic and manual modes. What is the minimum condition for which automatic (and manual) operation is possible?

8. Provide the results of your evaluation of the temperature transient experienced by the primary system during the June 5 incident with regard to any deviations from allowable cooldown rates and discuss the effects on subsequent usage factors.

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9. We understand that you plan to perform additional leakage testing of each main steam line isolation valve prior to Unit 2 startup. Describe and discuss your plans and program for the conduct of these tests.

10. We have been made aware of certain operational difficulties due to temperatures encountered with the main steam line isolation valves and the corrective actions taken to assure their operability. Discuss the effects of temperature on valve operability including the reasons why you do not consider establishing a maximum temperature as a limiting condition of plant operation to be required.

11. As a result of an evaluation of data obtained from the Unit 2 vibration test program, we understand that additional bracing in the jet pump risers has been incorporated into subsequent similar BWR plants. You have indicated that such action is not necessary, however, for Unit 2. Accordingly, discuss the basis and justification that safe plant operation can be assured without the additional bracing.

    Any consideration to future action including inspection should be fully discussed.

12. The consequences of failure of certain furnace-sensitized stainless steel (FSSS) components were discussed in your July 9, 1970 letter. Our preliminary review of this information has indicated that certain safety aspects related to failure of these FSSS components have not been considered. These include:

    (a) What are your conclusions on the consequences of failure with regard to safety?

    (b) What would be the consequences of failure of any of the specified FSSS brackets; i.e., the steam dryer guide and support brackets, feedwater sprayer brackets, core spray line brackets, shroud heat guide brackets and the jet pump riser support pad?

    (c) Since it appears that failure of the indicated FSSS brackets could lead to undesirable consequences, what courses of action are being considered to assure that the occurrence of failures would be highly unlikely? Your plans and programs in this regard should be discussed in detail.

    (d) We will need your evaluation of the consequences of failure of the indicated FSSS components in conjunction with an assumed loss-of-coolant accident sequence of either a recirculation line or main steam line rupture.

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(e) Describe the results of your evaluation of breaks in the region between the reactor pressure vessel and the sacrificial shield in terms of pressure and jet impingement loads that could cause failure of the shield structures or cause portions of the shield plugs to become missiles that would affect engineered safety features necessary to mitigate the consequences of such an event; i.e., ECCS and containment structure.

13. Discuss the results of your recent non-destructive testing of FSSS nozzle safe-ends.

14. Discuss your plans and programs with regard to the performance of an independent stress analysis of the 'as-built' piping systems and observation of piping system during plant heat-up prior to power operation of Unit 2.

15. Amendment 13/14 contained a discussion on the instrumentation systems that would be available to provide plant operators with necessary information regarding the environment within the primary containment following an accident or an incident. Describe your plans to assure that the necessary instrumentation will be installed and operable prior to resuming operation of Dresden Unit 2.

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