# Jersey Central Power & Light Company

MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N.J. 07960 • 539-4111



August 24, 1973

Mr. Robert J. Schemel, Chief
Operating Reactors Branch #1
Directorate of Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

50-[illegible]

REFERENCES: (1) AEC letter from Mr. R. J. Schemel, July 16, 1973
(2) GE Topical Report, NEDM-10735, Supplement 6
(3) JCP&L Co. letter from Mr. I. R. Finfrock, Jr. to Mr. R. J. Schemel, August 15, 1973
(4) JCP&L Co. Oyster Creek Nuclear Generating Station PCR No. 4 and Supplements

Dear Mr. Schemel:

SUBJECT: Fuel Densification, EXXON Nuclear Fuel

This letter is to confirm recent verbal communications made by Jersey Central Power & Light Company to the AEC Staff.

The postulated LOCA analysis has been performed, as requested by the AEC Staff in a meeting held on August 22, 1973 and in subsequent telephone conversations, to determine the applicable limit on maximum average planar linear heat generation rate (MAPLHGR) for the EXXON nuclear fuel using the following conditions:

1. Gap conductance values applicable are those found in Figure 3-10 of Reference (2).

2. Densification effects, as detailed in Reference (1), are to be included.

3. The calculational techniques used are those employed in the analysis presented in Reference (4).

4. All other requirements of the Interim Acceptance Criteria are to be met.

This calculation has been performed. The results indicate that a MAPLHGR of 11.4 KW/ft is required to meet the 2300°F peak clad temperature limit. The staff has further postulated that an additional conservative margin of 170°F is required to be applied to the calculated peak clad temperature for EXXON fuel due to current staff concerns over uncertainty in the spray heat

8/176

8681

transfer coefficients utilized in the calculation. While it is the technical judgment of both Jersey Central Power & Light Company and EXXON that the utilization of these coefficients is valid and appropriately conservative in accordance with the Interim Acceptance Criteria, an additional reduction of the MAPLHGR to 10.8 KW/ft is dictated by the additional 100° margin. The application of a MAPLHGR under the conditions defined above results in a calculated PCT of 2200°F for EXXON Type III E fuel.

It is understood by Jersey Central Power & Light Company that these particularly conservative restrictions on the operation of the EXXON fuel in the Oyster Creek Nuclear Generating Station are temporary in nature and that a meeting is to be held to resolve the Staff concerns within the next week.

Very truly yours,

Shepard Bartnoff
President

pk

To: James P. O'Reilly
Directorate of Regulatory Operations
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

From: Jersey Central Power & Light Company
Oyster Creek Nuclear Generating Station Docket 50-219
Forked River, New Jersey 08731

Subject: Abnormal Occurrence Report 73-18.

The following is a preliminary report being submitted in compliance with the Technical Specifications paragraph 6.6.2.

Preliminary Approval:

J. T. Carroll Jr. 8/23/73
J. T. Carroll, Jr. Date

cc: Mr. A. Giambusso

8/11/77

8305100066 4pp

Abnormal Occurrence

Report No. 73-18

SUBJECT: Violation of the Technical Specification, paragraph 3.6.c, whereas the maximum amount of radioactivity, excluding tritium, noble gases, and isotopes with $t_{\frac{1}{2}}$ <3 days contained in the radwaste storage tanks external to the radwaste building exceeded 10 curies.

This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraph 1.15B. Notification of this event, as required by the Technical Specifications, paragraph 6.6.2.a, was made to AEC Region I, Directorate of Regulatory Operations, by telephone on Wednesday, August 22, 1973, at 11:00 a.m., and by telecopier at 4:15 p.m.

SITUATION: A routine analysis of the activity contained in the outside radwaste tanks was made and indicated the total activity to be 11.82 curies with 11.28 curies being contained in the Waste Surge Tank. In reviewing the outside tank activity status sheets and the radwaste logs, an assumption can be made that the activity has been in excess of 10 curies since Friday morning, August 17. The apparent reason for this activity not being detected in samples taken Friday morning, Saturday morning, and Monday morning, was a failure to recirculate the tank for a sufficient period of time to eliminate any stratification which may have been present.

CAUSE:

Due to an apparent plugging of the waste concentrator tube bundle which became evident Wednesday, August 15, plans were initiated to replace the element. The Waste Surge Tank, which had essentially been drained, was used to accommodate waste input into the radwaste systems. In subsequent radiochemical analyses of the water added to the tank starting on Thursday, August 16, at 2:00 p.m. the activity in the tank was found to be primarily as a result of particulate matter in suspension. A quantity of particulate material had been known to be in the tank from a prior inspection, and a purchase order has been issued to an outside concern to clean the tank and dispose of the waste. Due to the length of time required for this job, though, the tank had not yet been made available for cleaning. However, in adding water to the tank on August 16 and 17, it can be shown by comparison of previous analyses of the tank contents, that a quantity of solid or particulate material was added with the water. It was this additional material that caused a significant increase in the total curie content of the tank. By 10:37 a.m., Friday, August 17, approximately 33,000 gallons of water had been transferred to the tank. No additional water has been added to the tank since that time.

REMEDIAL ACTION:

With the return of the Waste Concentrator to service late Saturday night, August 18, overall water inventory in the various radwaste systems has slowly been decreasing. As sufficient room is made in the tanks internal to the building, waste water from

the Surge Tank will be transferred to reduce the overall activity. The area surrounding the tank has been re-surveyed and re-posted accordingly. Both operators and chemistry technicians have been advised that in the future recirculation of the contents of the Surge Tank should be conducted for a sufficient period of time to insure proper representative samples and subsequent analysis may be completed.

SAFETY SIGNIFICANCE:

As noted in the Technical Specifications, limiting the activity stored in the outside tanks to <10 curies assures that in the event of a rupture of the tanks, the resulting activity discharged to the bay would not be greater than the maximum activity recommended as the limiting condition for operation for the annual total quantity released in effluents given in the proposed Appendix I to 10CFR50. Due, in this case, to the activity being primarily as a result of particulate matter in suspension, it is not felt that the material would be deposited in the bay, but rather would be in the surrounding soil, never to reach the bay, should the tank rupture. Consequently, the significance of this event is minimal.

Prepared by: E. R. Crews, Jr. Date 8/23/73