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UNITED STATES
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WASHINGTON, D.C. 20545

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LICENSEE : JERSEY CENTRAL POWER & LIGHT COMPANY

FACILITY : OYSTER CREEK

SUMMARY OF SEPTEMBER 6, 1974 MEETING WITH JERSEY CENTRAL POWER AND LIGHT COMPANY (JCP&L) ON OYSTER CREEK VACUUM BREAKERS TECHNICAL SPECIFICATIONS

On September 6, 1974 representatives of JCP&L and the staff met to discuss proposed changes to the Oyster Creek Technical Specifications for suppression chamber-drywell vacuum breakers. It was resolved that unless additional technical justification is available for our review, at least ten vacuum breakers must be operable as a limiting condition of operation (LCO). The changes to the technical specifications prepared by ORB#3, based on JCP&L's submittals, were jointly reviewed and minor changes made. Due to erroneous requirements in the present technical specifications, JCP&L requested that the revisions be issued as expeditiously as practicable. JCP&L is concerned that the present restrictions may result in plant shutdown resulting from more than one inoperable valve when tests are performed on September 24, 1974.

The staff requested that JCP&L prepare a curve of acceptable differential pressure decay rate with time for the maximum allowable leakage from the drywell to the torus. Also JCP&L was requested to submit additional details of their analysis supporting the permissible normal open position of the vacuum breakers.

Enclosed are a list of discussion points for the meeting and a list of attendees.

J. I. Riesland
J. I. Riesland
Operating Reactors Branch #3
Directorate of Licensing

- Enclosures:
1. Discussion Points
2. List of Attendees

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AND LIGHT COMPANY (JCP&L) ON OYSTER CREEK VACUUM BREAKERS
TECHNICAL SPECIFICATIONS

DISCUSSION

On September 6, 1974 the staff met with representatives of JCP&L in Bethesda to discuss the Technical Specifications proposed for the Oyster Creek Nuclear Generating Station vacuum breakers. JCP&L has submitted Technical Specification Change Request No. 23 and No. 24. J. Riesland, ORB#3, Reactor Projects had prepared a draft Technical Specification, based on the change requests and evaluations performed by the staff. These items formed the basis for the meeting.

1. Bodega Bay Test Facility Configuration and Pertinent Results.
The size of the test model, the need for and selection of the vacuum breaker used in the tests, and the pertinent results of the tests were discussed, primarily by Mr. McBride of General Electric Company (G. E.). We advised that in order to change bases for required number of vacuum breakers, additional analytical or test results, or both, would be needed for our review. Information of these types is presently not available, but may be submitted sometime in the future, according to GE and JCP&L.
2. Design Criteria for Sizing Vacuum Breaker Valves Number and Size.
The criteria for number and size of vacuum breakers was based on empirical data developed on the basis fo the Bodega Bay tests, as explained by GE and JCP&L. We advised that any changes to the number and size presented is the FDSAR would require substantial technical support.
3. Oyster Creek FDSAR Amendment 15.
Section II, Amendment 15 of the FDSAR states that seven vacuum breakers, providing a total area of 2970 in² will provide the 2920 in² of flow area required by the design criteria. This area is based on being equal to 1/16th. of the total drywell vent flow area required based on the Bodega Bay and Humboldt Bay tests performed by GE. Unless additional information can technically justify a change in these figures and is submitted as an amendment to the FDSAR (of the Facility License), the staff must reply on the data presented in Amendment 15 of the FDSAR.
4. Allowable Bypass Area.
The basis for the allowable bypass area vs break size (primary system) and the curve presented in Change Request No. 24, was presented. Operator Action following a small size break and the time required to perform the safety functions were described and are essentially as described in Change Request No. 24.
5. Effectiveness of Torus Sprays.
The torus sprays are considered to be 100% effective in suppressing bypass steam. The result is 2.5 #/sec condensed steam resulting in a stabilized temperature of 185°F and pressure of 26 psig when a small break occurs.

This information is not yet documented. Operator action to initiate torus spray is assumed to occur when the drywell temperature reaches 150°F. Station procedures may include this emergency action.

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6. Valve Position Indication Circuit.

The valve position indication circuit was described in some detail, explaining how the alarm circuit meets IEEE 279. The staff advised that the position indication subsystem is an operational convenience and, as such, is not included in the limiting conditions for operations (LCO) in the Technical Specifications. The alarm circuit, however, initiates operator action in the event of an emergency and is included in the LCO.

7. Accomodation of Tolerances in Linkage Between Valve Disc and Limit Switch.

JCP&L explained, by use of Figures 1 and 2, attached that all tolerances in the valve assembly and limit switch actuating arm are in the Conservative direction. Increased tolerances will result in the limiting switch actuating at less than the design 0.10" opening of the disc from the seat.

8. Justification of Alarm Set Point.

As noted in Change Request No. 24, the allowable bypass area for a small break in the primary system is 10.2 in², which is about 0.37" opening of a single valve. However, JCP&L claims that for a pressure less than that required to clear the water leg in the vent downcomer (1.8 psid) and a disc closing troque of 300 in lb, each valve could safely be open 0.10 inch or one valve safely open 1.40 in. The amount of steam leakage in this case could be conservatively condensed in the torus and containment pressure maintained within design limits. The analysis for this position should be submitted for review.

9. Relocation of Counterbalance Arm and Addition of Weights and Stainless Steel Pin.

Due to friction between the disc shaft and the shaft teflon bushing, the disc tends to remain open unless a positive closing force which exceeds the friction is applied. JCP&L adjusted the lever arm and added weights to the arm to provide this force. The force results in a closing troque in excess of 300 in lb. at any point in the disc travel from full open to close. The resulting closing force is only a fraction of the opening force exerted by 0.5 psid acting on the face of disc.

10. Future Modifications Being Considered.

Since the above corrections were made, one vacuum breaker disc was found open more than 0.10" and was secured in the closed position. This is considered by JCP&L to be due to growth with time of the teflon bushing, which increases friction between the shaft and the bushing. According to GE, this specific problem is being investigated presently by technical consultants. On the basis of the results of this investigation, modifications to the shaft or bushing are expected to be made.

11. Surveillance Test Procedures.

Torus and drywell pressures are monitored in the control room during the pressure decay rate tests (to be performed) to determine leakage between the drywell and suppression chamber. The pressure gages are considered to be sensitive enough to provide the data required for the test. We requested JCP&L to prepare a curve of acceptable differential pressure decay rate with time for the maximum allowable leakage path (2" diameter orifice).

Technical Specifications:

The draft Technical Specifications were reviewed by representatives of JCP&L and the staff, and appropriate changes made where necessary. JCP&L will review the draft and will discuss additional concerns by telephone with the staff. Due to the conflict between the present Technical Specifications and our letter dated January 30, 1974 that presented a requirement for additional information, it was agreed that it is essential to expedite issuance of these changes.

LIST OF ATTENDEES

SEPTEMBER 6, 1974

John Riesland
E. G. Greerman
David Dawson
M. G. McBride
E. F. OConnor
T. J. Madden
N. T. Trikouros
K. J. Krauklis
R. L. Cudlin
R. Swift

ORB#3, L, AEC
DRO:1, AEC
GE - Bethesda
GE - San Jose
JCP&L
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