



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
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September 30, 1970

Files

THRU: W. C. Seidle, Senior Reactor Inspector
Region II, Division of Compliance

DRL MEETING - FLORIDA POWER AND LIGHT COMPANY (TURKEY POINT 3), LICENSE
NO. CPPER-27, DOCKET NO. 50-250 - SEPTEMBER 16, 1970

1. Varela and Lewis attended a meeting at Bethesda on September 16, 1970, to listen to a presentation by Bechtel and Florida Power and Light to AEC personnel on the concrete failure of the Unit No. 3 containment dome.

2. The following personnel were in attendance:

P. Check, DRL	J. Olmstead, FP&L	F. Kulka, T. Y. Lin
F. Nolan, CO	D. Halligon, Bechtel	R. Marsh, Bechtel
L. Beratan, CO	R. DeYoung, DRL	N. Duchon, Bechtel
H. Denton, CO	A. Dromerick, DRS	L. Dail, Duke
J. Varela, CO:II	J. Henderson, CO	M. Malcom, Bechtel
R. Stade, Bechtel	R. Lewis, CO:II	E. Arndt, DRS
D. Muller, DRL	J. McKinley, ARC Staff	F. Schauer, DRS
M. Saad, Bechtel	C. Long, DRL	A. Gluckmann, DRS
N. Bhatia, Bechtel	M. Hildreth, CO	

3. Presentation

Bechtel made a presentation of the Turkey Point Unit No. 3 concrete containment dome failure. Bhatia stated that they were not ready to arrive at any conclusions as to the cause of the failure or the fix that would be required. The statement was also made that the problem only exists at Turkey Point 3 and that Bechtel has been unable to identify a containment problem on any of the other Bechtel containments.

Bhatia stated that at the time of the discussion they had drilled either 22 or 24 cores on the dome and that on the first 16 cores they attempted to stay above the third layer of tendons. Bhatia stated that the deepest core taken was 29 $\frac{1}{4}$ -inches deep and the deepest separation located was at the 14-inch level and approximately 33 feet from the

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September 30, 1970

center of the dome. Sixteen feet from the center of the dome, the separation was at a level of five inches down. Bhatia stated that they were unable at this time to establish a separation pattern and that in no cores did two laminations (separation) occur at different elevations. Basically, Bechtel is trying to ascertain two things: (1) the distressed area; (2) how to effect a fix. The investigative effort to date has disclosed the following information:

- a. Materials investigation to include petrography of concrete - No material defects identified.
- b. Water analysis - No water problems identified.
- c. Cement tested - Satisfactory.
- d. Compressive strength - Average greater than 6,500 psi (5,000 pound mix).
- e. Tensile strength - Approximately 400 psi.
- f. Core samples of failed slab - Tested over 600 psi tensile.

Bhatia stated that the stressing sequence at Palisades, Point Beach, and Turkey Point are the same sequence. The original sequence which specifies the vertical tendons must be tensioned prior to the horizontal or dome tendons, was found not to be important; and this sequence was changed in 1968.

The tendon liftoff readings were taken on the three relaxed tendons and that the reduced liftoff pressure was within the 10% that was predicted to occur over a 90-day period from creep and relaxation.

The pressure applied by the greasing pumps during greasing of the tendons was discussed; Bhatia stated that the pumps had been checked and that one of the pumps had a cutoff pressure of 200 psi and the second pump had a cutoff pressure of 250 psi. With the 165-foot head that is required to pump grease to the top of the dome, the grease to the tendon should be less than 100 psi.

The placement of the containment dome concrete was reviewed and it was stated that the last concrete pour occurred in December 1969, the tendons were stressed in May 1970, and greased in June 1970.

Bechtel postulated that it is possible that the failure could be caused by a strain failure and not a stress failure. The containment liner was discussed, and Bechtel's position is that no additional investigation of the liner will be undertaken as both Palisades and Point Beach

have the same hollow sound. Bechtel states that due to the thermal history of the containment, the liner will buckle away from the concrete and give a hollow sound without a corresponding void.

Bechtel also stated that their plans, relative to Point Beach and Palisades, are that if the Turkey Point investigation discloses any problem that could be related to Point Beach or Palisades, then the investigation will be extended to those plants. Bechtel stated that they have sounded the dome at both plants and have confidence of the sounding up to a depth of ten or eleven inches.

With reference to the Oconee containment, a Bechtel design, Bechtel stated that there are no failure symptoms and that nothing is wrong and that nothing has to be done.

Unit No. 4 - Bechtel stated that there is no official hold at this moment on placement of concrete and that placement of structural rebar and sheeting is continuing; however, no concrete will be placed on the dome until the failure mechanism is known on Turkey Point Unit 3.

Tentatively, Bechtel plans to submit an interim report within ten days of the date of this presentation. However, Bechtel stated that the interim report will contain only the information that was verbally presented at the DRL meeting.

Florida Power and Light maintains that the containment is not on the critical path and will not be if the fix can be identified within 90 days. FP&L also stated that when the investigation is completed and the mechanism of failure and proposed fix is established, they will meet with DRL and discuss the failure prior to performing the fix.

Compliance Headquarters personnel, Denton and Beratan, discussed the Army Lab report which indicated that the AEC consultant concurs with the Bechtel presentation, as regarded to the findings of no defective concrete and/or material.

CO:II:RCL:wb

R. C. Lewis
Reactor Inspector