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SUBJECT: — SIZE: 5+9

Discusses fire protec in operating nuc pwr stations in particular providing an analysis of facils' SER. Asserts that proposed fire protec mod represents an increase in level of protec against fire hazards.

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DISTRIBUTION TITLE: FIRE PROTECTION INFORMATION (AFTER ISSUANCE OF OL).

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Department of Nuclear Energy
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6 December 1978

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Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. Robert L. Ferguson
Plant Systems Branch

Dear Bob:

Subject: Fire Protection in Operating Nuclear Power Stations - Turkey Point Nuclear Power Plant Safety Evaluation Report Review

The Safety Evaluation Report, as developed jointly by the NRC staff and Brookhaven National Laboratory (BNL), adequately reflects the concerns and recommendations of the consultants. Throughout the reevaluation of Turkey Point there has been general agreement between the NRC staff and the BNL consultants. Based on present data, the proposed fire protection, as set forth in the draft SER, will provide significant enhancement of the fire protection program at the Turkey Point Plants, and thus, represents significant progress towards a comprehensive fire protection program. The following subjects represent the resolutions of the items of concern as discussed in a letter dated September 21, 1978 from R.E. Hall (BNL) to R.L. Ferguson (NRC), see attached. The final SER has not yet been received, and therefore, this discussion is based on an NRC memorandum from G.C. Lainas to A. Schwencer dated August 15, 1978 containing the originally reviewed draft SER and numerous discussions and meetings between the staff and BNL.

- Water Supply for Fire Protection

The adequacy of the dedicated fire protection water supply at the Turkey Point Units remains questionable. The administrative control, to guarantee a minimum of 180,000 gallons cannot be endorsed since the required information to determine the plant's maximum demands has not been submitted by the licensee. In addition, administrative controls should not replace the required physical dedication. This discussion is contained in the attached letter of September 21, 1978.

At this time it is our understanding that the subject of an adequate water supply for fire protection will be an open item in the safety evaluation. Upon the receipt of further information from the licensee, the evaluation will be completed.

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- Redundancy in Water Supply

The requirements of Appendix A to the Branch Technical Position 9.5-1, dated August 23, 1976, are such that two separate water supplies be provided. The licensee, at this time, does not meet this criteria and proposes to make available a spool piece to allow the use of the screen wash pumps, salt water, as the secondary source. Due to the unanswered questions regarding the maximum water demand and the capabilities of the screen wash pumps, this item should also be held as an open item, reference attached letter of September 21, 1978.

- Cable Protection - Area 58

Fire Area 58 contains a large volume of safety-related cables for both Units 3 and 4. In addition, this area is the main access hallway to the auxiliary building and as such is exposed to numerous transient combustibles, see letter of September 21, 1978. The licensee proposal to administratively control the flammable and combustible liquids in this area does not resolve the problem. The falme retardant cable coatings will retard flame propagation but this does not remove the possibility of a fire occurring that could affect both safety channels of Unit 3 as well as Unit 4.

There is a need to determine if relative remote shutdown capabilities exist for this area for both units in the event of a fire. Based on this information conclusions can be drawn as to the adequacy of the protection.

- Cable Protection - Cable Spreading Room

Upon reviewing the licensee submittal and visiting the site of Turkey Point Units 3 and 4, conclusions cannot be drawn as to the ability of the units to remotely shut down. This assumes the loss of the cable spreading room. Based on discussion with the NRC staff, we recommend that the licensee reevaluate this capability while investigating the same situation in Fire Area 58. Upon receipt of this reevaluation, a conclusion can be drawn as to the required fire protection in the cable spreading room.

- Yard Hydrants

Our letter of September 21, 1978 recommended the installation of a 2-1/2" gate valve on each 2-1/2" hydrant outlet in place of only one throttling valve per unit. Upon reevaluation, with new information supplied to BNL by the hydrant manufacturer, we conclude that the single valve should be acceptable. While the second valve would still aid the fire fighters in throttling and adding hose line, it has been determined that our concern about undermining the hydrant by throttling it has been resolved. At this time we recommend approval of the licensee position.

- Smoke Venting Equipment

The concept of utilizing two 5,000 CFM or greater smoke ejectors in place of the BNL recommended three unit scheme, reference letter of September 21, 1978, is marginally acceptable. Although the two units do not allow for as versatile a smoke moving capability, if sized correctly they should prove adequate. In addition, the problem of utilization of the third unit in the event of an ejector failure can be resolved by a proper maintenance and testing program. We therefore recommend at this time, the acceptance of the licensee program.

- Turbine Building

Subsequent to the September 21 letter, concerns have developed regarding the adequacy of the fire protection for cable systems in the turbine building. We recommend that the licensee perform a more realistic evaluation of the potential for safety-related cable damage given an oil fire in this location.

- Valve Supervision

Electrical valve supervision should be provided on all valves controlling fire water systems and sectionalizing valves. The present proposal of administrative controls or locks is unacceptable. See letter dated July 13, 1977 to Mr. R.L. Ferguson from Mr. R.E. Hall.

The preceding statements are a result of a detailed evaluation of the fire protection program as implemented by the Florida Power and Light Company at the Turkey Point Nuclear Power Station. The analysis covered a review of the fire prevention, detection and suppression capabilities of Units 3 and 4 of this plant as interfaced with the nuclear systems requirements. This was accomplished by utilizing a review team concept with members from Brookhaven National Laboratory (BNL) and the Nuclear Regulatory Commission Division of Operating Reactors staff.

The fire protection evaluation for Turkey Point is based on an analysis of documents submitted by the Florida Power and Light Company to the Nuclear Regulatory Commission and a site visit. The site visit was conducted by Mr. T. Dunning and Mr. L. Derderian of the NRC; Mr. M. Antonetti of Gage-Babcock and Associates, Inc., under contract to BNL; and Mr. John Townley, consultant to BNL. Mr. J. Townley was under contract to BNL to review the manual fire fighting capabilities of the station along with administrative controls. This review has been conducted under the direction of Mr. E. MacDougall and myself of the Reactor Engineering Analysis Group at BNL.

We have reviewed the Turkey Point Nuclear Power Plant (the licensee) analyses and have visited the facility to examine the relationship of safety-related components, systems and structures with both combustibles and the associated fire detection and suppression systems. Our review has been limited to the aspects of fire protection related to the protection of the public from the standpoint of radiological health and safety. We have not considered aspects of fire

protection associated with life safety of onsite personnel and with property protection, unless they impact the health and safety of the public due to the release of radioactive material.

It is our conclusion that the proposed fire protection modification, as discussed in the SER and as might be implemented by the items discussed above, represents an increase in the level of protection against serious fire associated hazards.

Respectfully yours,

Robert E. Hall

Robert E. Hall, Group Leader
Reactor Safety Analysis

REH:yo
Attachment

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