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SUBJECT: Forwards responses to NRC questions re spent fuel & containment filter fans.

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United States Nuclear Regulatory Commission
Attention: Document Control Desk
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
INFORMATION REGARDING SPENT FUEL FILTER FANS
AND CONTAINMENT FILTER FANS

Gentlemen:

On April 15, 1996, a conference call was held between Carolina Power & Light (CP&L) Company and the NRC concerning our Technical Specifications change request dated July 17, 1995, regarding the spent fuel filter fans and containment filter fans. The enclosure to this letter provides the response to the NRC's questions.

Questions regarding this matter may be referred to me at (803) 857-1802.

Very truly yours,

R. M. Krich
Manager - Regulatory Affairs

070050

JSK/klb
Enclosure

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Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
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H. B. Robinson Steam Electric Plant, Unit No. 2
Responses to NRC Questions Regarding Spent Fuel and Containment Filter Fans

Question 1

Updated Final Safety Analysis Report (UFSAR) Section 15.7.4.3.2 cites an off-site thyroid dose of 24.8 Rem due to a fuel handling accident inside containment. Does this dose include credit for the filters?

Response

As stated in UFSAR Section 15.7.4.2, the fuel handling accident analysis assumes the fans exhaust through filters at ground level.

Also, Technical Specifications (TS) Section 3.8.1.i requires, "The Spent Fuel Building ventilation system shall be operating when handling irradiated fuel in this area. Prior to moving irradiated fuel assemblies in the spent fuel pool, the ventilation system exhaust shall be aligned to discharge through HEPA and impregnated charcoal filters. When in operation, the exhaust flow of the Containment Purge System shall discharge through HEPA and impregnated charcoal filters. When the Containment Purge System is not in operation at least one automatic containment isolation valve shall be secured in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere."

Question 2

Following a fuel handling accident inside containment, how much time does it take to isolate the containment?

Response

H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 TS Section 3.8.1.g requires that direct communication between the control room and the refueling cavity manipulator crane operator shall be available whenever changes in core geometry are taking place. Abnormal Operating Procedure (AOP) -013, "Fuel Handling Accident," requires the control room operator, upon being notified of a fuel handling accident, to sound a containment evacuation alarm, to notify radiation control personnel to perform surveys, as required, then to take action to isolate the containment, if appropriate. We estimate that manual containment isolation could be completed in less than one minute after a fuel handling accident; however, the analysis in UFSAR Section 15.7.4 assumes that containment isolation occurs five minutes into the fuel handling accident.

Question 3

a. Are the fans inside containment safety-related?

Response

The four HVH (Heating and Ventilation Air Handling) units in containment are safety related.

b. How many fans will be operating during refueling?

Response

During refueling operations one or two HVH recirculation fans are normally operating; however, there is no procedural requirement for operation of the HVH recirculation fans. During refueling, the containment ventilation system is lined up to take suction from the refueling cavity area and to exhaust through the purge valves and through HEPA (High Efficiency Particulate Air) filters and impregnated charcoal filters. The purge valves will be closed either automatically or manually during a refueling accident, thereby minimizing any release. Therefore, operation of the HVH units is not necessary to ensure mixing of the containment atmosphere to dilute a release that may result from a fuel handling accident.

c. What is the flow rate?

Response

The flow rates are 85,000 cubic feet per minute per HVH recirculation fan as stated in UFSAR Table 9.4.3-1.

Question 4

Regarding mixing of containment atmosphere, since the containment ventilation system (including the recirculation system) is in operation under administrative control, how do we assure the recirculation fans will be operating during refueling. If they fail, do we suspend refueling operations?

Response

General Procedure (GP) - 010, "Refueling," requires that the purge system to be placed in the "Refuel" mode to ensure that the purge fans take suction from the refueling cavity via the refueling cavity surface ducts. This will ensure that the atmosphere in the vicinity of a postulated fuel handling accident will be exhausted through the purge valves and through HEPA filters and impregnated charcoal filters, as required by TS Section 3.8.1.i. The purge valves may be closed either automatically or manually after a fuel handling accident. Refueling operations

would not necessarily cease if the containment HVH recirculation fans fail, since they are not required to ensure containment atmosphere mixing and dilution of a potential release. However, TS Section 3.8.1.j states, in part, "If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease" Thus, if a failure of the Spent Fuel Building ventilation system, exhausting through HEPA and impregnated charcoal filters, occurred, or a failure of the Containment Purge system, exhausting through HEPA and impregnated charcoal filters, occurred, and the containment could not be isolated, then refueling activities would cease. Note also, that TS Section 3.8.2.e states, "From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel building shall be terminated immediately."

Question 5

Are hatches closed during refueling?

Response

Yes. TS Section 3.8.1.1 requires that the equipment door and at least one door in the personnel air lock shall be properly closed during refueling operations.