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MEMORANDUM FOR: Frank Miraglia, Assistant Director
for Safety Assessment
Division of Licensing

FROM: R. Wayne Houston, Assistant Director
for Reactor Safety
Division of Systems Integration

SUBJECT: WAPWR REVIEW, PRETENDING MODULE NO. 11,
PLANT LAYOUT

Plant Name: Westinghouse Advanced Pressurized
Water Reactor, RESAR-SP/90

Docket Number: None

Licensing Stage: Pre-PDA

TAC No.: 668

Responsible Branch: SSPB

Project Manager: K. Eccleston

DSI Branch Involved: RSB

We recently received the Subject document as one of the items pertinent to the ongoing review of the Westinghouse RESAR-SP/90. Our review of the plant layout has revealed a number of significant discrepancies between the design depicted in the layout drawings and the design described in the Primary Side Safeguards System Reference Safety Analysis Report. These include:

1. Preliminary module information received from Westinghouse showed the SI systems to be separated and located either within containment or in individual compartments which communicated with containment (pump houses). This is consistent with the SAR, which states: "The ISS consists of four identical and totally separated mechanical subsystems..." The Subject documentation shows two SI systems on one side of containment with communication between the systems via an open hallway, and the other two systems 180° away in an identical arrangement. This is contradictory to the SAR. The layout also violates the SAR statement: "It is proposed that the four pumping modules be housed in Containment Pressure Enclosures (CPE's) in order to encompass all piping and components associated with any post accident recirculation of highly radioactive fluid within a containment boundary."

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- 2. The SAR contains a discussion referencing either two or four emergency electrical power trains. The drawings clearly show only two, with no mention or provision for four.
- 3. The SAR (p. 6.3-26), for the loss of offsite power and one electrical train, states: "...for a two electrical train system only two of the four (ECC) subsystems would be operating...." This, in conjunction with the item 1 discussion, may mean a single failure in the pump compartment could disable two pumps. The location of the diesels may mean that one train is connected to the closest of the two of four ECC systems. One diesel failure could disable the two remaining ECC subsystems. The previous layout of separated SI pumps would prevent this occurrence.

The lack of consistency in the information being received indicates there may be a quality assurance problem at Westinghouse. Moreover, discrepancies of this magnitude and nature lead us to question whether we will be able to continue our review.

Please request that Westinghouse address what steps they intend to take to assure that in the future, information submitted will be consistent with submitted licensing documents, and that changes which occur in the design process are clearly identified and justified.

Our review of Module 11 also indicates that the passive steam condenser system, which was described in pretending Module 2 and which potentially offered significant safety improvement over present designs, appears to have been eliminated. Please ask Westinghouse to provide background for this design change.

We also note all charging pumps are located in a common area. Flooding of this area could cause loss of all three pumps, with corresponding loss of RCP seal injection and attendant problems. Please ask Westinghouse to address this problem.

The layout drawing quality and legibility is too poor for use in further evaluations. Please ask Westinghouse to resubmit a legible set of layout drawings.

Original Signed By
E. Wayne Houston

R. Wayne Houston, Assistant Director
for Reactor Safety
Division of Systems Integration

Enclosure

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