

JUN 20 1967

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Original Signed by
Charles G. Long

DUKE POWER COMPANY - DOCKET NOS. 50-269, 50-270, AND 50-287

On June 6, 1967, Mr Lee of Duke Power Company called to provide information on topics raised at the May 31, 1967, ACRS Subcommittee meeting and by the staff in recent telephone conversations. The following topics were discussed:

- (1) Thermal Design - Mr. Lee indicated that Duke and B&W were willing to list thermal design as a research and development item and would so state in the direct testimony to be given in the hearing and also in an amendment if the staff requires this. I see no reason why this must be documented before the hearing since some areas of the thermal hydraulic design are already indicated as R&D.
- (2) Rod Drives
 - (a) In response to the subcommittee's concern, B&W proposes to install a clutch which will provide positive insertion of the drives after a scram signal has been received. They will also provide a device to prevent blowdown forces from lifting the rods after a scram. (This latter provision was installed after calculations indicated that upward forces during blowdown would be about equal to the weight of the rod.)
 - (b) If a seal is completely lost on the rod housing, a collar on the shaft will cut off flow out the break. Break of a vent line will cause no rod motion. Loss of the buffer seal housing would cause a slow outward movement of the rod. Loss of the bolts on top of the housing would cause rod ejection.
- (3) Turbine Stop Valves - In case of a steam line break accident, both valves on the unbroken line must close to prevent blowdown of the second generator. The valves on the broken line could not take the accident pressure in the reverse direction.

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- (4) Emergency Feedwater Pumps - Contrary to previous indications the applicant states that two emergency feedwater pumps will not be installed with the first unit. We had requested that redundancy of emergency feedwater pumps provided and Duke proposed that the outlet of the pumps for each unit be cross-connected. This is a satisfactory solution when more than one unit is in operation but does not solve the requirement for redundancy when only one unit is in operation. The applicant had agreed to look into installing the Unit 2 feedwater pump with Unit 1 and running temporary steam piping but now states that this will not be done.
- (5) Refueling Administrative Error - If a high enrichment assembly were placed in a low enrichment region of the core burnout could take place according to Duke.
- (6) Steam Line Break - Duke indicated that the reactivity balance for the steam line break coincident with multiple tube rupture was calculated using all three high pressure injection pumps. For the 125 tube rupture case with one rod stuck out of the core, the minimum shutdown margin calculated was 1.4%. If only one boron injection pump operated this margin would be 1.2%. The core is not uncovered in the 125 tube rupture case (which corresponds to a 0.2 ft² break in the primary system) and core uncover would not occur for a 0.4 ft² break.
- (7) Instrumentation - At our request the servo channel will be connected to one rather all 4 of the flux channels and a 2 out of 4 safety system will be used. Lee said that isolation amplifiers might be proposed as sufficient at a later date on the basis of equipment tests.
- (8) Containment - We expressed our disapproval of tack welding the reinforcing bar to provide cathodic protection since overheating and resultant embrittlement of the bar could occur in the absence of rigid quality controls. Duke stated that either the quality controls would be delineated or tack welding elimination of tack welding would be possible if soil resistivity tests this week show high enough resistivity to eliminate need for a cathodic protection system.

Distribution:

Suppl. (3) ~~XXXX~~
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