

UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	§	
	§	
HOUSTON LIGHTING & POWER COMPANY	§	Docket No. 50-466
	§	
(Allens Creek Nuclear Generating Station, Unit No. 1)	§	
	§	

APPLICANT'S MOTION FOR SUMMARY
 DISPOSITION ON INTERVENOR DOHERTY'S
 CONTENTION NO. 12

Applicant moves the Board under 10 CFR § 2.749 to grant summary disposition with respect to Intervenor Doherty's Contention No. 12 relating to the alleged unreliability of the Rod Pattern Control System (RPCS). As shown in the accompanying statement of material facts as to which there is no genuine issue to be heard, and the affidavit of Joseph F. Lesyna there is no issue to try in this proceeding and Applicant is entitled under § 2.749 to have the contention summarily dismissed as a matter of law.

The Contention

Doherty's Contention No. 12 states:

Intervenor contends the Rod Pattern Control System in the Instrument and Controls systems of the proposed ACNGS is not reliable. The operators of Dresden Unit 3 (a GE BWR) reported the system in-

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operable for 54 percent of start-ups in the start-ups, and Millstone Unit 1 reported this system failed in 172 of 245 start-ups in a 16-month period beginning in 1971. Further, 34.6 percent of "Reportable Occurrences" in BWR reactors in 1977 were in the Instrumentation and Controls area (NUREG-0483, p. 4-7). The Average Power Range Monitor (APRM) used to detect surplus neutron flux in this system is not highly reliable. Power Range Instruments contributed to 36 "Reportable Occurrences" in BWRs in 1977, and 17 in 1976, (Nuclear Safety, Volumes 19(1) and 20(1), 1978 and 1979, pp. 84 and 82, respectively). Most recently a rod block monitor was inoperative during start-up of the Brunswick-2 reactor (September 4, 1978) due to a failed integrated circuit. Petitioners contend danger to their health and safety interest by a reactivity insertion accident during start-up unless Applicant installs a more reliable system than this one.

Argument

Intervenor's argument that Applicant's Rod Pattern Control System is unreliable is based on a factually erroneous premise. Intervenor presumes that instrumentation problems that occurred at older BWRs are applicable to the RPCS designed for Allens Creek. Contrary to Intervenor assertions, there are significant design and operational differences between the systems and components which experienced some performance difficulties and the totally redesigned system to be installed in ACNGS.

The attached affidavit of Mr. Lesyna explains that Intervenor may have grounds for faulting the older Rod Worth Minimizer (RWM) system, but that there are no analogous grounds applicable to the new RPCS. The RWM is a single-channel computer

system which takes rod position inputs from single detectors and compares them against a "software" programmed memory; the system is easily manipulated or completely bypassed.

The RPCS system is a dual-channel computer system which takes rod position inputs from dual detectors and compares them against a hardwired memory locked in electronic circuit cards; the system cannot be altered except by the improbable course of "rewiring" and it cannot be completely bypassed.

A reactor startup cannot proceed unless the RPCS is completely operable. The failure of any component within the RPCS system will interrupt "permissive" signals; without these permissive signals, it is not possible to generate rod movement signals to the control rod hydraulic drives. Therefore, any failure--or "unreliability"--in the system will result in the inability to move rods, but will not prevent shutting down the reactor through a reactor trip (SCRAM).

Moreover, the RPCS cannot be completely bypassed, as was the case with the RWM system. To avoid unnecessary operating restrictions, it is possible to substitute input signals for a very small number of failed inputs from inoperable position detectors or failed drives. The number of substitutions is operationally and systematically limited to guarantee that deleted inputs will not produce unacceptable rod patterns.

The sole purpose of the RPCS is to limit the reactivity worth of individual control rods by restricting rod movement to predetermined patterns or sequences. These patterns have in turn been conservatively analyzed to assure that the associated worst-case reactivity addition accident (rod drop) does not exceed appropriate limits.

Finally, Intervenor's disjointed citations to alleged failures in various instruments (Average Power Range Monitors, Rod Block Monitors, etc.) totally miss the mark: these components and systems have nothing to do with the purpose or functioning of RPCS. Moreover, as noted above, any RPCS failure automatically produces a safe condition in that rods cannot be moved at all and certainly not into unacceptable patterns. The RPCS is self-checking and immune to hazardous failures.

Accordingly, there is no genuine issue of material fact to be tried in this proceeding, and Applicant is entitled to summary disposition as a matter of law.