

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Jan 3, 1984

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Glenn O. Bright
Dr. James H. Carpenter
James L. Kelley, Chairman

In the Matter of

CAROLINA POWER AND LIGHT CO. et al.
(Shearon Harris Nuclear Power Plant,
Units 1 and 2)

Docket 50-400 OL

ASLBP No. 82-168-01
OL

Wells Eddleman's new contentions re SPDS

Background: On December 3, 1983 I received CP&L's "Safety Analysis of the Shearon Harris Safety Parameter Display System"(SPDS). I do not take it to be the information the Board ordered CP&L to produce by mid-February on SPDS human factors. But it is new information. For the first time I have some descriptive data on the SPDS that enables evaluation. Therefore, under the Board's order that such new info compels contentions to be filed within 30 days of having the document in hand, I now (taking into account Jan 2 was a holiday) file:

Contention 169: The Harris SPDS design fails to adequately provide information needed for operating personnel to protect the health and safety of the public in an accident, because (A) the SPDS logic does not indicate loss of quality signals for parameters until all signals are lost, and uses "1 out of 2 logic" (how can you logically tell which one to use?) when only 2 signals are left, thus not providing accurate information or early indication that instruments or signal lines may be failing. It also uses average values only, failing to alert operators to possible widely divergent readings of the same variable. See p.25 of "Safety Analysis" of SPDS.

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Contention 170: The Harris SPDS design is defective because it does not take sufficient account of overcooling, which can cause pipes to break in the primary cooling system (and could lead to pressure vessel failure). Page 29 of the SPDS "Safety Analysis" indicates the core cooling will remain GREEN (OK) on the display even tho cooling exceeds 100 degrees F per hour (the pressure vessel code limit). This could lead to primary system boundary failure followed by release of radiation to atmosphere, e.g. by venting, bad seals.

Contention 171: The Harris SPDS design and safety analysis is defective because in the event of a large LOCA it does not provide accurate information to operators. For example, page 45 of the SPDS "safety analysis" says that the RCS Integrity signal during a "large LOCA" will be GREEN (OK). In fact, a large LOCA is a huge leak in the reactor cooling system -- not "integrity" at all. It also assumes the control rods will be insertable after the LOCA begins (p.45), ignoring possible warping, steam explosions, or CRDM (or CRDM controls or power supply) failures.

Contention 172: Due to dropped information signals not being signaled to the operators, and due to inaccurate setups, e.g. the failure of RCS integrity to signal other than OK during a large LOCA (SPDS "Safety Analysis" p.45), failure to take account of overcooling (p.29), and variation of signals, the setup for prioritizing operator actions (pp 26-27) may actually confuse operators or misdirect their attention during a nuclear accident. The selected parameters have not been fleshed out for Harris (e.g. overcooling, ibid. ppl4-16) and may provide actual misinformation during an accident if set wrongly, e.g. for overcooling.

WHAT'S NEW : SPDS Safety Analysis and description therein of how it's planned to work. WHY COULDN'T FILE EARLIER: Basis in the

"Safety Analysis" cited above was not available. 5 factors: Good cause, *Sand Record*: I have technical analysis ability, can do cross & may get witnesses. info not available earlier. No other parties pursuing SPDS issue. No real delay, safety hearing discovery only beginning now. Broaden issues not much, SPDS always been issue. No contentions, no record. *thus no sound record.*