

ARKANSAS POWER & LIGHT COMPANY

INTRA COMPANY CORRESPONDENCE

Arkansas Nuclear One
Russellville, Arkansas
August 5, 1975

JWA-1373

MEMORANDUM

TO: William Cavanaugh III

FROM: John W. Anderson, Jr.

SUBJECT: ARKANSAS NUCLEAR ONE - UNIT ONE
PRESSURIZER LEVEL INDICATION FOLLOWING REACTOR TRIP
File: 0270.83

REFERENCE: Letter Govers to Cavanaugh July 24, 1975 Same Subject

Concerning B&W's letter of 7-24-75 relating recommendations to provide a solution for pressurizer level dropping below indication on reactor trip, we have the following comments.

Item 1 We concur that it would be nice that Tave not fall below 548°F. We do not concur that this can be accomplished solely by resetting our main steam safeties. Further, we believe that the blowback of the main steam safeties has been optimized through several attempts at resetting the amount of blowback in the early phases of A's startup test program. It is possible that some drift has occurred since the last setting; but since resetting of blowback is largely a trial and error process, it is likely that an attempt at change might worsen rather than improve the present blowback.

The B&W letter fails to relate differences in F.W. flow following the two trips discussed. It has been noted that excessive F. W. flows following a trip can drive T_c down just as effectively as lowering turbine header pressure.

It is felt that the ICS system design, which allows a runback of F.W. after trip at normal tracking rate (20%/min.), is a major contributor to the excessive shrink noted in our system. Even though the main and lo-load block valves trip closed rapidly on a trip, far too much F.W. flow is driven through the full-open S. U. valves which will not modulate to hold lo-level limit on the OTSGs until the F.W. demand signal is run back to below the lo-level limit valve. This does not occur until ≈4 minutes following the trip.

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Excessive F.W. flow also creates excessive blow time of the M. S. safeties, which tends to lower their lift and reset points.

The Operations group suggests that the S. U. control valves be placed in manual and reduced to $\approx 10\%$ demand (after the main F.W. blocks are opened in the course of plant startup). If a trip occurs, the F.W. flow will decrease at whatever rate the main and lo-load blocks will travel closed down to the minimum pre-set value. Hopefully this would provide data to demonstrate our contentions.

A long-term solution, such as instantaneous ICS runback on RX trip, could then be pursued.

Item 2 As pointed out, these differences could be due to F.W. flow differences between the two trips.

Item 3 We disagree; we do not want an unnecessary E. S. actuation to the same extent as some don't want the unnecessary HPI nozzle thermal cycles. See note below.

Item 4 We wholeheartedly disagree; this would eliminate any possibility of surviving load rejection, or loss-of-pumps runbacks.

Note: If operations were provided with wider range pressurizer level indication, the standby E. S. pump wouldn't be started.

JWA:THC:BAB:mcc

CC: J. H. Woodward
N. A. Moore
T. H. Cogburn
B. A. Baker