



Commonwealth Edison

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January 11, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: LaSalle County Station Units 1 and 2
External Line Breaks Bounded By 10 CFR
100 Guidelines (Multiple Failure Concerns)
NRC Docket Nos. 50-373 and 50-374

- References (a): C. W. Schroeder letter to H. R. Denton dated October 27, 1983; Response to Special Scenario on Turbine Control System Failure of Non-Safety Equipment (Multiple Failure Concerns).
- (b): Telecon from Dr. A. Bournia to C. W. Schroeder and G. R. Crane on December 1, 1983; Requesting Additional Information.
- (c): C. W. Schroeder letter to H. R. Denton dated December 1, 1983, (Multiple Failure Concerns).

Dear Mr. Denton:

The purpose of this letter is to retransmit Reference (c) with a typographical error corrected. Reference (a) responded to the special scenario for an HELB on a feedwater heater line in the turbine building and its effects on a non-safety related control systems such as the turbine controls. The NSSS vendor's evaluation with the ODYN code indicated that the peak vessel pressures, peak heat fluxes, and peak neutron fluxes are acceptable and non-bounding. In the auto-flux control mode, feedwater flow adjustments keep the fuel clad temperatures low and MCPR remains in the acceptable regime. In the manual mode of feedwater control, this scenario results in a delta CPR of 0.25 with the MCPR attaining 1.00 ± 0.02 depending upon the ODYN option used to compute it. This indicates that some fuel rods (0.4 to 1.1 percent) may enter partial transition boiling. No fuel damage (perforations) is expected however because the peak cladding temperature remains belows 1000°F. No fission products are expected to be released from the fuel.

By Reference (b), NRC staff requested a live comparison of the offsite consequences from a steam line break outside primary containment (in particular this special scenario), with the 10 CFR 100 guidelines. The FSAR 15.6.4 event is a steam line break outside containment with an assumed release of 14,000 lb steam and 86,000 lb liquid reactor coolant

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January 11, 1984

(70 Ci of Iodines and 7.5 Ci noble gas released). Using the NRC conservative model to estimate doses, the following results were determined for this event:

	Whole Body	Thyroid dose (R)
Exclusion Boundary	3.5×10^{-2}	3.6×10^{-4}
Low Population Zone	1.5×10^{-5}	1.4×10^{-3}

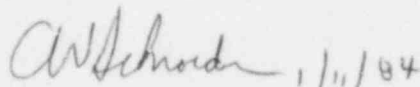
The FSAR 15.6.6 representation of a feedwater line break over a 3 to 4 hour period (outside containment) with an assumed release of 788,000 lbs of water, of which 165,000 lbs flash to steam, releases only 0.096 Ci of Iodine and trivial noble gas. This leads to NRC conservative potential dose of roughly 10^{-8} rad thyroid or whole body at the exclusion boundary or the LPZ distances.

These two events envelope the potential release from a feedwater heater line break in the turbine building basement as postulated in the NRR special scenario. Each of the FSAR events resulted in insignificant iodine and noble gas releases, hence the potential radiological insult associated with the special scenario event is trivial with respect to 10 CFR 100 guidelines.

To the best of my knowledge and belief the statements contained herein are true and correct. In some respects these statements are not based on my personal knowledge but upon information furnished by other Commonwealth Edison employees and contractor employees. Such information has been reviewed in accordance with Company practice and I believe it to be reliable.

If you have any further questions regarding this matter, please contact this office.

Very truly yours,



C. W. Schroeder
Nuclear Licensing Administrator

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cc: B. R. Shelton
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