



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

June 14, 1993

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: LaSalle County Nuclear Power Station
Units 1 and 2 Reply to Request for Information
Inspection Report Nos. 50-373/93009; 50-374/93009

Reference: T. Martin letter to L. DelGeorge dated
May 20, 1993 transmitting NRC Inspection Report
50-373/93009; 50-374/93009

Enclosed is Commonwealth Edison Company (CECo) response to
request for information.

The enclosed discusses specific concerns identified with
LaSalle Emergency Operating Procedure, LGA-RT-03, Alternate Boron
Injection.

If you have any questions concerning this information, please
contact Sara Reece-Koenig, Regulatory Performance Administrator,
708(663-7250).

Sincerely,

D.L. Farrar
Nuclear Regulatory Director

cc: C.D. Martin, Regional Administrator - RIII
R. Stransky, Project Manager - NRR
D.E. Hills, Senior Resident Inspector - LaSalle

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June 7, 1993
In Reply, please refer to
CHRON # 119628

To: G.F. Spedl

Subject: Clarification of Hot Shutdown Boron Weight in EOPs

This letter provides supplemental information to CHRON # 119621, which reviewed a Station evaluation of the adequacy of the target Boron concentrations for LGA-RT-03. In that letter, Engineering concurred with the station "white paper" that the UFSAR input parameters for SBLC do not necessarily correspond to the EOP alternate Boron injection procedures, and verified the Boron concentrations in LSCS Calculation 0-91-001.

Engineering has been asked to confirm that the Hot Shutdown Boron Weight adequacy will be bounded by verification of the Cold Shutdown Boron Weight. This is always the case, i.e. whenever either SBLC or the EOP procedures achieve injection of the Cold Shutdown Boron Weight, they then necessarily have injected sufficient Boron for Hot Shutdown. It should be noted however, that the adequacy of the HDSEBW calculation does not depend on this bounding argument because the target concentration and weight calculations are verified in separate calculations for the Hot and Cold Shutdown Conditions, in the above referenced calculation.

If you have any questions regarding this issue, please contact me or Bill Kirchhoff at extension 2927.

Jeff Miller 6-7-93
Jeff Miller
Site Engineering and Construction
Plant Support Supervisor

cc: R.M. Shields
L.M. Shearer
NEDCC
SEC CHRON File

May 27, 1993

In Reply Please refer to
CHRON: **119621**

To: G.F. Spedl

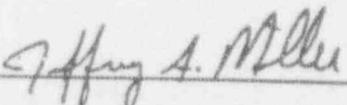
Subject: Engineering Review of LGA-RT-03 Boron Concentrations

Per your request, Site Engineering has reviewed the attached discussion from Systems Engineering regarding the basis and acceptability of the target Boron concentrations used for LGA-RT-03.

The review performed was a "top down" review of the Licensing and Technical basis for the assumptions used, and an independent review and performance of the concentration calculations themselves. Engineering agrees that the UFSAR parameters for the SBLC system do not necessarily correspond to those for EOPs. Specifically, the 25% 'inadequate mixing' penalty is not applicable to EOPs as the Boron weight assumptions are required to assume even mixing, and the EOPs themselves contain actions to ensure this mixing.

The technical input assumptions for reactivity conditions, RPV inventory and temperature effects, and Boron isotope mass fractions are conservative. The independent calculations resulted in minor variations due to rounding and calculation sequence differences. These differences are insignificant, and do not affect the acceptability of the results of LSCS Calculation 0-91-001, or the conclusions in the referenced discussion.

If you have any questions or concerns, please contact me at extension 2694 or William Kirchhoff at ext. 2927.

 5-27-93

Jeff Miller
Site Engineering and Construction
Plant Support Supervisor

cc: R.M. Shields
L.M. Shearer
NEDCC
SEC CHRON FILE

Response to specific concerns identified with LGA-RT-03 in inspection report 373/374-93009.

Issue:

No justification for not including the UFSAR required conservatism in the calculation of the required boron to be included in the alternate boron injection procedure.

Response:

LaSalle concluded that certain additional conservatisms contained in the UFSAR regarding the amount of boron in the SBLC tank are not applicable to calculations of boron weights required under conditions beyond the design basis. The EOP calculations of the required boron amounts to be injected into the RPV are based on the conservative assumptions outlined in the EPG SER appendix C and NEDO-31331 definitions.

As specified in the SER, the definitions are:

HOT SHUTDOWN BORON WEIGHT

"The Hot Shutdown Boron Weight is defined to be the least weight of soluble boron which, if injected into the RPV and mixed uniformly, will maintain the reactor shut down under hot standby conditions."

COLD SHUTDOWN BORON WEIGHT

"The Cold Shutdown Boron Weight is defined to be the least weight of soluble boron which, if injected into the RPV and mixed uniformly, will maintain the reactor shut down under all conditions."

These definitions assume that the boron injected into the RPV will be uniformly mixed. The LaSalle calculation of the HSDBW and CSDBW are consistent with this definition. This calculation applies to both the SBLC and alternate injection boron. The basis of the weight of boron injected during the alternate boron injection procedure, LGA-RT-03, is consistent with these calculations. Therefore the alternate boron injection support procedure is correct in this regard and uses the same basis as the flowchart EOP with SBLC for HSDBW and CSDBW. The UFSAR assumptions are used for the design criteria for SBLC. The SBLC system meets these design criteria.

The generic values used for CSDBW could be 500 ppm per reference 2, however the value of 660 was used for conservatism. If the 25% for imperfect mixing is included with the 500ppm value, the present 660ppm used for CSDBW would be sufficient if

imperfect mixing did occur.

The dilution factor for shutdown cooling is addressed in these calculations directly by using the increased water volume when shutdown cooling is initiated as part of the calculation for the required cold shutdown boron weight concentration in the RPV. The definition for CSDBW requires that the mass of water in the shutdown cooling loop be included in the calculation of CSDBW. Shutdown cooling is not placed in service until the cold shutdown boron weight is injected into the RPV(per LGA-10) to avoid dilution until sufficient boron to remain shutdown under all conditions is already in the RPV. The UFSAR description provides the additional amount in ppm of boron which must be added to the RPV to account for the subsequent dilution by shutdown cooling. The intent of the UFSAR (ie to account for shutdown cooling dilution) is met.

References:

1. LaSalle CALC EOP-91-001.
2. GE memo dated February 2, 1987, Hot and Cold shutdown boron weight for EPGs.
3. EPG SER appendix c, revision 4.
4. NEDO-31331, supplement A, revision 4.