



**Commonwealth Edison**

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OG-154

June 10, 1985

Mr. John A. Zwolmski, Chief  
Operating Reactors Branch #5  
Division of Licensing  
Office of Nuclear Regulatory Commission  
U.S. Nuclear Regulatory Commission  
Phillips Building  
7920 Norfolk Avenue  
Bethesda, MD 20014

Dear Mr. Zwolmski:

Westinghouse Owners Group  
Response to Supplemental Safety Evaluation of  
the BASIC Emergency Response Guidelines

The NRC letter of March 11, 1985 (J. A. Zwolmski to J. J. Sheppard) provided the Supplemental Safety Evaluation Report (SSER) on additional material applicable to the BASIC version of the Westinghouse Owners Group (WOG) Emergency Response Guidelines (ERGs). The SSER concluded that the additional BASIC version items of the ERGs (transmitted by WOG letters J. J. Sheppard to D. G. Eisenhower dated February 9, March 16 and March 14, 1983) are acceptable for implementation into plant specific procedures.

Section III of the SSER identified five NRC staff findings resulting from the NRC review of the additional BASIC version guideline material. The attachment to this letter provides WOG responses to the five staff findings in Section III of the SSER. The WOG has addressed these five staff findings in developing the Revision 1 version of the ERGs and considers these findings on the BASIC version to be closed.

Very truly yours,

L. D. Butterfield, Chairman  
Westinghouse Owners Group

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**Attachment**

cc: Mr. H. L. Thompson, Jr., Director Division of Licensing  
Mr. W. T. Russell, Acting Director Division of Human Factors Safety  
WOG Reps

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RESPONSES TO NRC SSER  
OF THE BASIC ERGs

The NRC staff findings contained in Section III of the NRC SSER of the BASIC ERGs are repeated below and are followed by the WOG responses.

NRC ITEM 1

In Contingency Guideline ECA-4, Step 16 should be modified to replace the 2000 psig criterion for SI termination with "stable or increasing pressure".

WOG RESPONSE 1

Guideline ECA-2.1, "Uncontrolled Depressurization of All Steam Generators", of the Revision 1 version replaces ECA-4 of the BASIC version. The concern over worsening the effect of a multiple steam generator depressurization by increasing RCS pressure above 2000 psig is addressed in ECA-2.1 by specifying that any reduction in SI flow or the stopping of a high or low head SI pump be done with "stable or increasing pressure" and pressure greater than the appropriate pump shutoff head, rather than pressure simply being above 2000 psig.

NRC ITEM 2

In Contingency Guideline ECA-7, the criteria and bases for SI accumulator isolation and venting will be the subject of a longer-term staff review in connection with Revision 1 of the ERGs.

## WOG RESPONSE 2

Guidelines ECA-3.1, "SGTR With Loss of Reactor Coolant-Subcooled Recovery Desired", and ECA-3.2, "SGTR With Loss of Reactor Coolant-Saturated Recovery Desired" of the Revision 1 version replace ECA-7 of the BASIC version.

The basis for isolation or venting in both of these guidelines is that SI accumulators should be isolated or vented during RCS depressurization prior to RCS pressure reaching accumulator nitrogen pressure to prevent unnecessary water discharge. Such discharge would impede further RCS depressurization, increasing leakage from the RCS, and may cause unnecessary cooldown in stagnant loops. Eventually non-condensable nitrogen could be injected rendering pressurizer pressure control less effective or causing gas binding in the steam generator U-tubes.

Actions prior to the isolation or venting in each guideline establish adequate RCS inventory and secondary heat sink to ensure that the SI accumulators are not needed. Consequently, if RCS subcooling and pressurizer level are sufficient at this time, the SI accumulators should be isolated or vented.

If the RCS temperature is less than 400°F, the SI accumulators should be isolated to prevent nitrogen injection even if the RCS is not subcooled.

## NRC ITEM 3

In Contingency Guidelines ECA-8, ECA-9 and FR-P.1, the criteria for SI accumulator isolation and venting should be identified. The bases for these criteria will be reviewed in connection with Revision 1 of the ERGs.

## WOG RESPONSE 3

Guidelines ECA-3.1, "SGTR With Loss of Reactor Coolant-Subcooled Recovery Desired", and ECA-3.2, "SGTR With Loss of Reactor Coolant-Saturated Recovery Desired" of the Revision 1 version replace ECA-8 of the BASIC version.

Revision 1 Guideline ECA-3.3, "SGTR Without Pressurizer Pressure Control" replaces ECA-9 of the BASIC version, and Guideline FR-P.1, "Response to Imminent Pressurized Thermal Shock Condition" of the Revision 1 version (HP and LP) updates FR-P.1 (HP and LP) of the BASIC version.

Criteria for SI accumulator isolation and venting are identified in the guidelines cited. Concerning isolation and venting criteria and bases for ECA-8 (ECA-3.1, Step 27 and ECA-3.2, Step 21) and ECA-9 (ECA-3.3, Step 22), see the response to Item 2, above.

For FR-P.1, the injection of cold SI accumulator water into the RCS should be avoided due to the additional thermal stresses it could cause. Since SI termination criteria are satisfied by this point of the guideline, this is an indication that the SI accumulators are no longer required, and should be isolated.

#### NRC ITEM 4

Contingency Guidelines ECA-8 and ECA-9 should be associated with specific transition points from Optimal Recovery Guideline E-3, and these points should be identified in Guideline E-3.

#### WOG RESPONSE 4

Revision 1 guidelines have been written to ensure all necessary transitions are specified for steam generator contingencies. Namely transitions are provided to ECA-3.1 (which replaces ECA-8) from Steps 3, 5, 13, 14, 15, 16, 19, 20 and 25 of E-3, and to ECA-3.3 (which replaces ECA-9) from Step 18 of E-3.

#### NRC ITEM 5

In Functional Recovery Guidelines FR-P.1 and FR-P.2, the background material will be the subject of a longer term review in connection with Revision 1 of the ERGs.

## WOG RESPONSE 5

Section 2.7, The P-Function: Maintenance of RCS Integrity, of the SSER addresses three changes that were incorporated into the final BASIC version of these guidelines. These changes from Section 2.7 are repeated below and are followed by WOG discussion of how the respective changes have been addressed in the Revision 1 version of the ERGs.

1. In FR-P.1, a new Step 11 has been added to the HP-version to stabilize RCS hot leg temperature after terminating the cooldown. (This is Step 12 in the LP-version.)

This concept has been preserved in Revision 1. Stabilizing RCS temperature facilitates pressurizer level and pressure control while the plant is being realigned to nominal condition.

2. In FR-P.1 guidance for determining if an RCS soak is required has been modified. This affects Step 23 (HP) and Step 24 (LP).

This concept has been preserved in Revision 1, as well as its bases. Use of the Technical Specification curve is not appropriate due to its already having been exceeded, and the use of a 100°F/hr cooldown rate vice 50°F/half-hour is consistent with the analysis basis.

3. In FR-P.2, Step 4 (HP and LP) has been modified to delete the requirement for a post-recovery soak.

This concept has been preserved in Revision 1. Due to there being no temperature decrease below  $T_1$ , soak is not required even though the cooldown may have exceeded 100°F in any one hour.