IAG Memo ~~#~~ IA-26c

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Task Scope Draft modification to Procedure EP-32 For constant mass control during natural circulation

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Task No. 26 C

Date Complete 4/26/79

Reason felt task is complete:

procedure modification ~~done~~ written and reviewed with Dick Wilson, Ed Wallace, Gary Broughton

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PRIMARY SYSTEM MASS CONTROL
DURING NATURAL CIRCULATION

This draft procedure modification is to assure that when the natural circulation attempt is made, planned or inadvertent, the pressurizer water level does not drop below the heaters whether or not the attempt is successful. This draft procedure modification is intended to be used by GPU to modify Emergency Procedure EP-32 and for inclusion in the procedures for planned natural circulation operations.

The pressurizer water level must be maintained at 250" $\pm$ 25" during forced circulation. This level allows for volume shrinkage if natural circulation is successful (See IAG Task Report #26E) and for volume swell if natural circulation is unsuccessful (See IAG Task Report #26A).

Whenever natural circulation is to be attempted, the following steps are to be included in the procedure:

1. Establish constant mass control per Emergency Procedure EP-21. Stabilized natural circulation is expected in less than one hour. When natural circulation is established (See Note A), constant mass control is no longer required unless pressurizer level is not available.

2. If the pressurizer level reaches 350", the natural circulation attempt should be aborted. If no/few voids are present and natural circulation is not established, this level will be reached in approximately 2½ hours after the pump trip.

3. If natural circulation is not achieved (See Note B) in two and a half (2½) hours, the natural circulation attempt should be aborted.

Note A: In natural circulation, using constant mass control, the pressurizer level, if available, indicates the progress of the move to natural circulation. If natural circulation is established, the pressurizer water level should stabilize at about 150"-175". Prior to the establishment of natural circulation, the level may rise at a rate of about 40"/hour. If the level rise significantly exceeds 40"/hour, voids are being formed in the system.

Note B: If level indication is not available, an alternate means must be developed to determine whether natural circulation flow has been established. This is the subject of a task that is not yet complete.