UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 1 1975

Docket No. 50-335

R. C. DeYoung, Assistant Director for Light Water Reactors, Group 1, RL

SAFETY EVALUATION REPORT SUPPLEMENT

Plant Name: St. Lucie Plant, Unit 1
Licensing Stage: OL
Docket Number: 50-335
Milestone Number: 27-02
Responsible Branch: LWR 1-3
Project Manager: H. Rood
Requested Completion Date: July 25, 1975

The enclosed Safety Evaluation Report Supplement covers areas of Amendment 47 for which the Auxiliary and Power Conversion Systems Branch has primary responsibility.

The following two items are now considered resolved:

(1) Section 9.1, Spent Fuel Cask Handling -

The applicant has selected to demonstrate that a 25 Ton single element fuel cask drop can be tolerated without an unacceptable release of radioactivity. This approach meets the requirements of Branch Technical Position APCSB 9-1 and is, therefore, acceptable to us.

(2) Section 5.5, Auxiliary Feedwater System Water Hammer Protection -

The applicant has proposed to add standpipes to the feedwater sparger nozzles as a means of preventing auxiliary feedwater hammer. We will require procedural testing of steam generator water level recovery to demonstrate that unacceptable damage will not result. Until the tests are performed to establish the particular limit for this plant, and since this is a CE plant, we will limit the steam generator water level recovery rate to about 170 gpm in the plant Technical Specifications. This is a generic issue in PWR's.

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The following item has not yet been resolved:

(1) Section 3.f, Component Cooling Water Heat Exchanger Tornado Missile Protection -

We are unable to make an evaluation of the adequacy of the CCW system tornado missile protection until the Accident Analysis Branch establishes the review criteria to be used. If we must consider tornado missiles impacting both of the CCW heat exchangers simultaneously, we would conclude that the present protection is unacceptable. If, however, only one heat exchanger need be considered, we may conclude the protection is acceptable.

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Enclosure:
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5.5 Auxiliary Feedwater System Water Hammer

Events such as damage to the feedwater system piping at Indian Point 2, November 13, 1973, and at other plants, could originate as a consequence of recovering of the feedwater sparger in the steam generator or uncovering of the steam generator feedwater or auxiliary feedwater inlet nozzles. Subsequent events in turn lead to the generator of a pressure wave that is propagated through the pipes and could result in unacceptable damage. In response to our inquiry, in Amendment 47, the applicant has proposed to add sandpipes to the feedwater sparger nozzles. This modification tends to prevent the water from draining from the sparger, if the sparger were to uncover, thus inhibiting steam-water interaction (water hammer) in the sparger. The water hammer issue is a generic item for all PWR's. The applicant must demonstrate during plant operation that unacceptable damage such as experienced at Indian Point 2 and Calvert Cliffs would not result in St. Lucie, Unit 1. We will require the applicant to perform tests to demonstrate that uncovering the modified feedwater sparger and subsequent refill via the auxiliary feedwater system over the complete spectrum of allowable refill rates will not result in unacceptable damage from feedwater hammer. Until these tests are performed to establish the particular limit for this plant, and since this is a CE plant, we will limit the steam generator water level recovery rate to 168 gpm in the plant Technical Specifications. This recovery rate was demonstrated to be safe in tests performed at the Calvert Cliffs plant. We will complete the review of the feedwater instability phenomenon as a post OL item.

9.1 Spent Fuel Cask Handling

Amendment 47 provides an analysis which shows that a 25 Ton single element spent fuel cask drop can be tolerated anywhere along its travel path without resulting in an unacceptable release of radioactivity or damage to safety related equipment. Our Branch Technical Position APCSB 9-1 requires that a single failure proof crane be provided, or that a cask drop accident be tolerated without unacceptable consequences. The applicant's approach to cask drop protection is, therefore, acceptable to us. We reviewed the applicant's evaluation and agree with the conclusions. On this basis, we conclude that the spent fuel cask handling system is acceptable.