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June 20, 1986

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Mr. George W. Knighton, Director  
PWR Project Directorate No. 7  
Division of PWR Licensing-B  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

SUBJECT: Waterford SES Unit 3  
Docket No. 50-382  
Auxiliary Pressurizer Spray  
Technical Specification

REFERENCES: (1) W3P83-2197, dated June 29, 1983  
(2) W3P85-2115, dated June 13, 1985  
(3) NRC letter dated April 22, 1986  
(4) W3P84-1492, dated May 29, 1984

Dear Mr. Knighton:

By Reference (1), LP&L identified a potential single failure vulnerability associated with the charging loop isolation valves, which, when closed, divert charging flow to the Auxiliary Pressurizer Spray (APS). Of concern was the potential for one of the isolation valves to fail to close on demand, thus reducing the amount of charging flow to the APS and a subsequent reduction in RCS depressurization rate. As a result, the Waterford 3 Operating License was conditioned to require performance of a test to demonstrate adequate APS depressurization capability with an open charging loop isolation valve. The required test was successfully performed and the results, demonstrating a more than adequate depressurization rate, were submitted to the NRC via Reference (2). Finally, the NRC SER provided in Reference (3) concluded that License Condition 2.C.12 had been satisfied and that the APS could satisfy its design function.

Although not documented in the Waterford 3 SER Supplements or the Operating License, an outstanding item remains concerning the APS. In response to various Reactor Systems Branch questions on proposed Waterford 3 Technical Specifications LP&L, in Reference (4), noted that "should the APS prove necessary [to satisfy steam generator tube rupture criteria] LP&L agrees that issue resolution shall include a commitment to develop a technical specification...on the APS." For the reasons discussed below, LP&L feels that it is no longer appropriate to develop an APS technical specification.

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### Commitment Background

In May, 1984 LP&L representatives met with members of the Reactor Systems Branch (RSB) to review various NRC questions related to the Waterford 3 technical specifications. One question raised by the RSB, and later responded to by Reference (4), dealt with the need to implement a technical specification for the APS based on its role in SGTR mitigation. During the meeting LP&L took the position that an APS technical specification was a generic issue (i.e. applicable to more than one plant) which should be resolved by the Staff through the normal Standard Technical Specification (STS) process. The RSB representatives agreed that it was a generic issue but indicated that it was unlikely that such a technical specification could be successfully processed through the Committee to Review Generic Requirements (CRGR), and therefore maintained that LP&L commit to implementing an APS technical specification.

LP&L and RSB representatives met with Mr. R. Wayne Houston (then Assistant Director for Reactor Safety) later the same day. It was again agreed by all parties that an APS technical specification was a generic issue. LP&L agreed to develop such a technical specification, if needed, and the NRC agreed to process the proposed technical specification as a change to the CE STS. Once the APS technical specification appeared in the STS, LP&L agreed to propose a change for Waterford 3 under 10CFR50.90. In this context it is clear that the Reference (4) commitment was to develop a generic APS technical specification but not to submit the change for Waterford 3 until NRC had issued the technical specification as part of the STS.

### Appropriateness of APS Technical Specification

The last few years have seen a marked change in the NRC and industry criteria concerning what should be included in the technical specifications. One of the earliest indications of this change occurred in the Atomic Safety and Licensing Appeal Board proceeding for the Trojan plant. In part, the Appeal Board stated:

From the foregoing it seems quite apparent that there is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a Technical Specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the Act and the regulations is that Technical Specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility

of an event giving rise to an immediate threat to the public health and safety. [emphasis added]

This theme was expanded upon with the issuance in November, 1983 of NUREG 1024, "Technical Specifications - Enhancing the Safety Impact", and appears to have reached fruition in the NRC's Technical Specification Improvement Program (TSIP).

The TSIP provides three criteria for determining what requirements should be placed in the technical specifications. These criteria are:

1. Installed instrumentation that is used to detect, by indicators in the control room, a significant abnormal degradation of the reactor coolant pressure boundary, or
2. A process variable that is an initial condition of the Design Basis Accident and Transient Analysis that either assumes failure of or presents a challenge to the integrity of a fission product barrier, or
3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

It is clear that only criterion 3 could be applied to the APS. In assessing the applicability of criterion 3 to the APS it is necessary to review the SGTR event in Chapter 15 of the Waterford FSAR. Such a review shows that no credit is taken for the APS. Therefore, the TSIP criteria are not met and inclusion of an APS technical specification is not appropriate.

An important concept underlying the TSIP development, and as stated in the ALAB proceeding for Trojan, is that technical specifications should be applied to systems needed for the immediate protection of the health and safety of the public. For instance, the reactor protection system must function immediately to mitigate many Chapter 15 transients. Other systems not credited in Chapter 15 provide no immediate protective function and/or are not needed in the primary success path for the transient. The APS is one such system. As demonstrated in the Reference (2) analysis accompanying the resolution of the Waterford 3 APS license condition, the APS would not be actuated by the operators until 1 hour 20 minutes into the event - clearly not an immediate protective function.

#### Significance of the APS in SGTR Depressurization

Referring to the analysis in Reference (2), depressurization during a SGTR event is accomplished by throttling HPSI flow. Physically, the APS does not

provide substantial actual depressurization but merely shrinks the pressurizer steam bubble allowing HPSI flow to fill the pressurizer to a higher level. The system pressure is not significantly affected. When HPSI is throttled, reducing the RCS in-flow below the out-flow through the SGTR, system pressure is decreased. The APS serves the function of allowing pressurizer level to increase to the point of satisfying emergency operating procedure criteria for throttling HPSI.

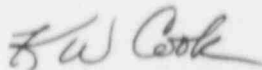
As part of the analyses performed to resolve the APS license condition LP&L analyzed a SGTR case wherein the APS was unavailable. As would be expected, the results of this analysis showed successful depressurization via throttling HPSI with an insignificant increase in offsite dose. Because operation without the APS would require changes to the emergency operating procedure criteria for throttling HPSI, LP&L did not submit this analysis nor is there an intention in the future to submit it. The results, however, are instructive in demonstrating the relative significance of the APS in a SGTR depressurization scenario.

#### Conclusions

As noted above, the APS does not meet the current NRC criteria for systems required for inclusion in the technical specifications, nor does the safety significance of the APS warrant inclusion. It is also worthwhile to note that in the over 2 years since Reference (4) was submitted the Staff has not prepared a revision to the CE STS for the APS. For these reasons, LP&L does not intend to develop a generic technical specification for the APS.

Should you have any questions on this matter please feel free to contact Mike Meisner at (504) 595-2832.

Yours very truly,



K.W. Cook  
Nuclear Support & Licensing Manager

KWC/MJM/plm

cc: B.W. Churchill, W.M. Stevenson, R.D. Martin, J.H. Wilson, C. Liang,  
Resident Inspector's Office (W3)