July 18, 2007

Mr. Dale E. Young, Vice President
Crystal River Nuclear Plant (NA1B)
ATTN: Supervisor, Licensing & Regulatory Programs
15760 W. Power Line Street
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER, UNIT NO. 3, REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT REQUEST NO. 295 REV. 0, EXTENSION OF ALLOWED OUTAGE TIME TO SEVEN DAYS AND ELIMINATION OF SECOND COMPLETION TIMES (TAC NO. MD5241)

Dear Mr. Young:

By letter dated April 13, 2007, the Florida Power Corporation (FPC) submitted an application to change the Crystal River, Unit No. 3, Technical Specifications (TSs) related to low pressure injection, reactor building spray, decay heat closed cycle cooling water, and decay heat seawater systems. The proposed changes would revise the applicable TSs, in part, to extend the allowed outage time associated with one inoperable train of these systems from 72 hours to 7 days, consistent with the staff approved Technical Specifications Task Force (TSTF) traveler TSTF-430, which implements approved topical report BAW-2295, Revision 1, "Justification for Extension of Allowed Outage Time for Low Pressure Injection and Reactor Building Spray Systems." The Nuclear Regulatory Commission staff has determined that it needs additional information in order to complete its review. The enclosed questions were sent by e-mail to FPC on July 3, 2007, and discussed during a conference call on July 12, 2007.

Please respond to the enclosed questions within 30 days of the date of this letter. This schedule was discussed and agreed to by Mr. Paul Infanger of FPC.

Please contact me at 301-415-1321 if you have any questions on this issue.

Sincerely,

/RA/

Stewart N. Bailey, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: As stated

cc: See next page

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REQUEST FOR ADDITIONAL INFORMATION

CRYSTAL RIVER UNIT NO. 3

IMPLEMENTATION OF TSTF-430 AND TSTF-439

DOCKET NO. 50-302

By letter dated April 13, 2007, the Florida Power Corporation (FPC, the licensee) submitted License Amendment Request No. 295 for Crystal River Unit No. 3 (CR-3). The proposed amendment would change the CR-3 Technical Specifications, in part, to extend the allowable completion time associated with one inoperable train of low pressure injection (LPI), reactor building spray, decay heat closed cycle cooling water, and decay heat seawater systems from 72 hours to 7 days, consistent with the staff approved Technical Specifications Task Force (TSTF) traveler TSTF-430, which implements approved topical report BAW-2295, Revision 1, "Justification for Extension of Allowed Outage Time [AOT] for Low Pressure Injection and Reactor Building Spray Systems." The Nuclear Regulatory Commission staff has determined that it needs responses to the following questions in order to continue the review:

1. In the submittal with regards to the quality of the CR-3 probabilistic risk assessment (PRA), the licensee does not state the scope of their model (i.e., internal events, external events, fires, seismic, etc., as well as at-power, transition, shutdown). The quantitative results presented are compared to the acceptance guidance of Regulatory Guides (RGs) 1.174 and 1.177, which are based on a full scope risk analysis. The submittal later states that the licensee does not have a fire PRA model. The licensee is requested to clarify the scope of their risk analysis used for this application.

2. In the submittal (Attachment A, page 15 of 27), the licensee states that the only potentially significant external events that could influence the risk are fires and severe weather. This conflicts with the conclusions of the topical report BAW-2295-A Rev. 1, which was the basis for the staff approval of TSTF-430, on which this amendment request is based. BAW-2295-A concluded that the impact of the proposed changes had a negligible impact on external events risk. The basis for the licensee's conclusion identifies a review of the CR-3 Individual Plant Examination (IPE) and supporting data. Since external events, including fires, were not in the scope of the IPE, the basis for this conclusion is not clear. The licensee is requested to provide its disposition of external events (other than fires and severe weather) not included in the risk assessment results (such as seismic events, external flooding, high winds, transportation accidents), and a basis for its conclusions regarding the low-risk significance of each of these events for this application.

3. In the submittal, the licensee identified general assumptions relevant to their risk analysis, including that "During performance of the AOT, the corresponding opposite train equipment and diesel are considered to be protected." The term "protected" should be more clearly defined as to what specifically is prohibited while the equipment is protected. The specific scope of equipment should be stated, and appropriate regulatory commitments identified.

4. In the submittal (Attachment E, Section 5.3), the licensee states that 96 additional hours of unavailability are assumed for each train of the affected systems, and that the unavailability would be incurred simultaneously for each train of the systems. No basis has been provided to justify either of these assumptions based on maintenance practices and past component maintenance history. This assumption is also inconsistent with the topical report BAW-2295-A Rev. 1. BAW-2295-A identified an increase from 80 to 93 hours of unavailability per train per year. Further, the licensee identified a compensatory measure (Attachment A, page 17) to schedule concurrent outages of raw water and decay heat systems, "if possible." This appears to conflict with an assumption of concurrent outages, since it identifies that such concurrent scheduling may not be possible in some circumstances. The licensee should justify these assumptions and clarify the intent of the compensatory measures regarding concurrent outages, or provide more realistic risk analyses accounting for nonconcurrent outage scheduling.

5. The submittal did not analyze emergent component failures (i.e., unplanned maintenance) and the potential impact on risk from increased probability of common cause failure. Since the applicability of the extended AOT is not limited to planned maintenance activities, the risk analysis should address emergent repairs per RG 1.177 Section 2.3.3.1 and Appendix A Section A.1.3.2.

6. The submittal discusses the development of a fire risk sensitivity study and presents its results. The staff requests additional clarifications regarding the fire risk of the proposed changes:

    a. The submittal does not discuss the role of the LPI subsystem and its cooling water support systems for mitigation of fire events for achieving a safe shutdown. The licensee should discuss the anticipated role of these systems given a fire in the plant.

    b. The fire zones of interest are identified as those which contain circuits of the systems for which the AOT extension is requested. However, fires which disable other systems resulting in a demand for the LPI and supporting systems would also be impacted by the AOT extension. For example, fire-induced failure of emergency feedwater components would increase the likelihood of requiring core cooling by bleed-and-feed once through cooling, which may ultimately require the use of LPI systems for long term decay heat removal. The licensee should justify the selection of fire scenarios.

    c. The submittal states that fires which impact "manual actions that are credited in the Fire Study" are expected to have a minimal risk impact. It is not understood to what the term "Fire Study" refers, nor are the manual actions identified in any way, therefore the basis for this statement is not clear. The licensee should clarify the intent of this assumption and assure it has a proper basis.

d. The development of the "compensated frequency" adjusts for "equipment which will not be operated without special precautions." It is not understood to what "special precautions" refers, to what equipment these precautions apply, and whether these are associated with any licensee commitments specific for this application. The licensee should clarify the scope and intent of this assumption.

e. The licensee applied a 0.1 conditional core damage probability given a fire and identified this as a conservative assumption. However, no specific basis has been provided to justify this value as conservative. Further, the final results of the fire sensitivity study using this assumption do not demonstrate low sensitivity to fire risk, which would indicate that the use of a conservative screening value may be inappropriate. The licensee should justify the use of 0.1 as the conditional core damage probability, or consider applying a more realistic value to better establish a less conservative estimate of fire risk during the extended AOT.

f. The results of the sensitivity study show that fire risk dominates the risk impact of the extended AOT, and the acceptance guidance of RG 1.177 of 5E-7 incremental conditional core damage probability is exceeded by almost a factor of 10. The licensee has not drawn any conclusions from these results, nor have specific compensatory measures been identified to offset this risk. (The licensee has proposed an undefined "periodic" fire watch in the decay heat pump room and seawater rooms, which contain the equipment subject to the extended AOT. However, in their fire analysis the decay heat pump rooms have a compensated frequency of "0" since the pumps are not running, so this compensatory fire watch does not directly offset any specific source of the fire risk.) The licensee should discuss the implications of the fire risk sensitivity study to the overall conclusions of the risk impacts associated with the extended AOTs, and consider implementing specific compensatory measures to address fire risk as a significant contributor to the risk profile.

7. The submittal did not identify whether the risk analyses provided point estimates of the mean or actual means, nor was there any discussion of uncertainty analyses to support the calculations. The licensee is requested to address PRA model and parametric uncertainty using the guidance of RG 1.174 Section 2.2.5 and RG 1.177 Section 2.3.5.

8. The submittal did not address the truncation level used for this analysis. The licensee is requested to provide this information consistent with RG 1.177 Section 2.3.3.4.

9. The submittal (Attachment A, page 16) ends the first bulleted compensatory measure with a phrase "These protective measures . . . ," which is not completed. The licensee is requested to provide the missing information.

10. The submittal (Attachment A, page 16) identifies a commitment to "avoid an AOT . . . that results in 'Higher Risk' (Orange Color Code)." The licensee is requested to clarify the intended meaning of "avoiding an AOT," and to specify the basis for the "Higher Risk (Orange Color Code)" in terms of risk impact.

11. RG 1.177 Section 2.3.7.2 identified the key components of a configuration risk management program. The licensee has not identified whether the program applied under plant procedure CP-253 satisfies all aspects of RG 1.177, specifically:

    - The scope of structures, systems, and components (SCCs) included.

    - Applicability if additional SSCs become inoperable or non-functional while in a risk-informed AOT.

    - Consideration of external events and level 2 issues.

    The licensee is requested to clarify this issue.