Florida
Power
CORPORATION
Crystal River Unit 3
Docket No. 50-302

July 3, 1997
3F0797-38

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Subject: Review of Potential Unreviewed Safety Questions in Final Safety Analysis Report (FSAR) Revision 23

References: A. NRC to FPC letter, 2N1296-18, dated December 20, 1996

B. NRC Enforcement Policy, NUREG-1600, dated October 18, 1996

Dear Sir:

In Reference A, the NRC identified two specific potential Unreviewed Safety Questions (USQ) and made reference to several other potential USQs that may have been incorporated in Revision 23 to the Crystal River Unit 3 (CR-3) Final Safety Analysis Report (FSAR). The referenced letter requested that, within fifteen days of receipt of the letter, a meeting should be scheduled with the NRC to discuss the potential USQs. FPC was in frequent communication with the NRC Project Manager on this issue after the letter was issued. During that time, the Project Manager stated that no meeting was required if the two issues noted in the letter were USQs. FPC reviewed the 10 CFR 50.59 evaluations associated with the two issues in Reference A and in January, 1997 determined that neither change constituted an USQ. At that point, the Project Manager and the Manager, Nuclear Licensing decided that an onsite meeting to discuss FSAR Revision 23 was necessary.

The Project Manager visited the CR-3 site on February 10-13, 1997 to discuss these two issues in Reference A further and thirteen other changes in FSAR Revision 23. As a result of the February, 1997 visit, determinations were made by FPC regarding each of the fifteen issues. These determinations are described in Attachment 1. Except for the SBLOCA operator actions issue (Issue #1 in the attachment), FPC has concluded that none of the other 14 issues involved USQs.

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Errors in controlling content of the FSAR have been identified through this review, but none constitute Unreviewed Safety Questions. However, as a part of the CR-3 restart efforts, several restart issues have been identified by FPC to assure that CR-3 systems meet the design and licensing bases requirements, improve the quality and accuracy of 10 CFR 50.59 reviews, resolve USQs identified by the NRC and FPC (principally associated with the Emergency Diesel Generators and the Emergency Feedwater System), ensure that the FSAR and licensing bases are controlled, and prepare a revision to the FSAR to capture the modifications made in this outage.

Restart Issue D-15, "Review Past Modification 50.59s," was initiated to define the "Extent of Condition" of the 10 CFR 50.59 program. A review of sample MARs was conducted which took a biased look at potentially significant modifications which had a cross-section of design disciplines. The review did not find any USQs in the modifications, but did develop some lesson-learned measures for future consideration. FPC considers this restart issue resolved.

Restart Issue OP-5, "Upgrade the 50.59 Review Process," was initiated to improve the overall 10 CFR 50.59 program and the lessons-learned from Issue D-15 were factored into the development of the new 10 CFR 50.59 program implementing procedure, CP-213, "Preparation of a Safety Assessment and Unreviewed Safety Question Determination." This effort is ongoing.

Restart Issue D-23, "Reasonable Assurance of Design Margin," is the System Readiness Review Program. It was initiated to provide additional assurance that CR-3 plant systems meet their design and licensing bases. This effort is ongoing.

FPC has established a team and process for updating the FSAR to reflect modifications made in this outage and correct previous errors. This effort will result in FSAR Revision 24 which will be completed prior to restart from the current outage. This process is Restart Issue R-20. FPC concludes that further examination of past 10 CFR 50.59 evaluations is not warranted.

FPC will submit a letter by July 25, 1997 to the NRC describing the FSAR improvement initiatives being taken by FPC. That letter is to be responsive to the NRC Policy on Enforcement, described in Reference B, for inconsistencies in licensing documents.

The commitments in this letter are contained in Attachment 2.

Sincerely,

Robert E. Grazio, Director
Nuclear Regulatory Affairs

REG/dfk/jwt

Enclosure

xc: Regional Administrator, Region II
Senior Resident Inspector NRR Project Manager

ATTACHMENT 1

Evaluation of Potential Unreviewed Safety Questions in CR-3 FSAR, Revision 23

Issue #1 High Pressure Injection System (HPI) Small Break LOCA (SBLOCA) Analyses

Issue #1 in Reference A, involving changes to the High Pressure Injection System (HPI) Small Break LOCA (SBLOCA) analyses model and assumed operator actions when single failures are postulated, generated a number of additional questions from the Project Manager and the NRC inspection team (also on site the week of February 10th) conducting Inspection 97-01. This issue has been identified as a violation in NRC Inspection Report 97-06 for failure to identify and have NRC approval of a number of operator actions required to mitigate a SBLOCA. Future activities related to this item will be tracked as a part of FPC's violation response to Inspection Report 97-06.

Issue #2 Number of Containment Fan Coolers Aligned to Emergency Diesel Generator

Issue #2 in Reference A, involving the number of containment fan coolers able to be aligned to the Emergency Diesel Generators (EDG) versus analysis assumptions and Improved Technical Specification requirements. This change to the FSAR was made to preclude a potential overload to EDGs during certain postulated design basis Loss-of-Coolant Accidents. The 10 CFR 50.59 evaluation describing this change was provided on Page 118 of the attachment to FPC's letter dated December 9, 1996, which submitted the biennial report of 10 CFR 50.59 evaluations. The change did not create an USQ. The issue has been resolved with the Project Manager and can be closed.

Issue #3 High Pressure Injection Nozzle Cycles, Table 4-8

FSAR Table 4-8, Transient Cycles, was changed to reflect eighty (80) allowable cycles for each High Pressure Injection (HPI) nozzle rather than the previous eleven (11) allowable cycles. The NRC was concerned that this increase in allowable cycles might involve an USQ because of the change in probability of a previously evaluated accident if the number of allowable cycles had already been exceeded. This led the NRC to question the number of allowable cycles already used at CR-3 for previous transients on the HPI nozzles and why this change was necessary.

Approximately six years ago, FPC realized that the eleven allowable cycles might not be enough to reach the end of plant life. An engineering analysis was performed to evaluate whether or not new allowable cycle limits could be established based upon an improved engineering analytical technique using a three-dimensional finite element model. The analysis produced the allowable limit of 80 cycles and that value appears in FSAR Revision 23. The FSAR Revision 23 changes were evaluated under 10 CFR 50.59. The evaluation did not identify any USQs, however, we re-evaluated this change and decided that this change

should not have been made. FPC will revise FSAR Table 4-8 to read 11 cycles for the HPI nozzles and Figure 4-16 will be removed in FSAR Revision 24. The surveillance procedure which controls the allowable transients accountability has not been revised yet to show 80 cycles, so this revision to the FSAR text does not create a conflict with plant procedures. The Makeup System Enhanced Design Basis Document does not address this level of detail.

The NRC Project Manager also questioned the number of allowable nozzle cycles actually used by CR-3 during its operating life. As of December 13, 1996, the operating transients for CR-3 have accounted for the following allowable cycles for the HPI nozzles which are associated with the indicated valves:

MUV-23	4
MUV-24	2
MUV-25	2
MUV-26	2

Issue #4 Delete Engineered Safeguards Signal for Reactor Building Purge Valves - FSAR Section 5.3.3.3

FSAR Section 5.3.3.3 was revised to delete an Engineered Safeguards (ES) signal to automatically close the 48-inch containment purge isolation valves (AHV-1A, AHV-1B, AHV-1C, and AHV-1D) in the event of a postulated design basis accident. These valves are not allowed to be open during Modes 1 through 4 in accordance with ITS Surveillance Requirements. In 1990, FPC was planning to license Reactor Building purges while at power with the valves open. Modification Approval Record (MAR) 90-11-13-02 was initiated to install an ES signal to close the purge valves. Included in that modification was a proposed FSAR change to Section 5.3.3.3. The associated 10 CFR 50.59 evaluations identified no USQs for this modification. FPC decided not to proceed with opening the purge valves and cancelled the modification. The change to the FSAR was made in error. This error occurred in December 1994.

In September 1995, FPC recognized this mistake and corrected it in FSAR Revision 23 by returning the text to its original wording. A 10 CFR 50.59 evaluation was not performed because the facility itself was not being changed, the FSAR was being corrected. Because of this error, FPC has changed its administrative procedures for handling FSAR revisions in early 1996 to preclude this type of error again.

FPC also initiated a Precursor Card (PC 97-1289) to research plant changes between December 1, 1994 (FSAR Revision 21 submittal) and November 18, 1996 (FSAR Revision 23 submittal) to determine whether or not plant activities relied on the erroneous information in preparing changes to the plant. The assessment of that Precursor Card was that the System Readiness Review Project being performed as part of the Restart Program is sampling the licensing and design bases for each system. When deficiencies are found, Precursor Cards are written. No deficiencies have been found regarding this particular incorrect FSAR change.

Issue #5 Group B & C Butterfly Valves - FSAR Section 5.5.3.2

This issue is directly related to Issue #4 and concerns the removal of a statement in FSAR Revision 23 that dealt with an emergency signal causing the Group B (outside air supply) valves and Group C (building exhaust) valves to close. FSAR Revision 23 text changes associated with Issue #4 were also included this FSAR section. This statement should not have been removed from the FSAR section in Revision 23 when the correction for Issue #4 was made. FPC will correct this error in FSAR Revision 24 by returning this statement to its original wording. No USQ is involved in these changes since they are administrative errors or corrections to the FSAR and no change to the facility was implemented as a result of the incorrect wording.

Issue #6 RB Cooling/RB Spray - FSAR Section 6.2.3

FSAR Section 6.2.3 was revised to delete "One Reactor Building Emergency Cooling Unit and the Reactor Building Spray System operating at one-half capacity" as one of the combinations of equipment which will provide for post-LOCA containment heat removal. FPC has determined that this sentence should not have been removed from Section 6.2.3, however, its removal was not an USQ because the fan cooler/RB Spray combination remains a possible combination which is discussed in FSAR Section 6.3.1. It is also the combination assumed in the Design Basis LOCA evaluation described in Section 14.2.2.5. This was an administrative error and FPC will return this statement to Section 6.2.3 in FSAR Revision 24.

Issue #7 SW Tank Operating Pressure - Section 6.3.2

This issue concerns a change to the description of the expected minimum pressure in the Nuclear Service Closed Cycle Cooling (SW) System following a design basis accident. Before FSAR Revision 23, the expected minimum pressure was 60 psig. Revision 23 changed it to 54.75 psig. This value is still above the maximum calculated post-accident containment pressure of 54.2 psig.

The change in expected minimum pressure was made as a result of a revision to the SW System Surge Tank (SWT-1) pressure instrumentation calculation to reflect instrumentation errors. No changes to the plant operating procedures were required as a result of this calculation since the SWT-1 operating limits in Operating Procedure OP-408, "Nuclear Services Cooling System," were not changed. However, a revision was required in the SW System Enhanced Design Basis Document (EDBD) section that discusses the SW System parameters which includes the minimum expected post-accident SW System pressure. A 10 CFR 50.59 evaluation was performed for the EDBD changes which concluded that there were no USQs associated with this change.

Issue #8 Lack of Seismic Qualification on Inadequate Core Cooling System Instrumentation - Section 7.3 7.1

This change to the FSAR was to clarify the extent of seismic qualification for the Subcooling Margin Monitors. The FSAR was revised without performing a 10 CFR

50.59 evaluation since there was no change to the facility. No USQ exists because of this change. This change clarified the extent to which this instrumentation was seismically qualified and FPC did not regard this change as a change in either the licensing bases or the design bases. This clarification was provided in FPC's letter dated July 8, 1996 (3F0796-03). FPC also submitted Technical Specification Change Request Number 209 in September, 1996 to add subcooling margin as one of the variables covered by Improved Technical Specification 3.3.17, Post Accident Monitoring Instrumentation.

A non-editorial change such as this one, which is not a change to the facility, would now receive a safety assessment in accordance with FPC procedure CP-213, "Preparation of a Safety Assessment (SA) and Unreviewed Safety Question Determination (USQD)." As such, a SA/USQD evaluation now would be required to substantiate a conclusion that a change to the facility is being made by such an FSAR change, but no USQ is involved.

Issue #9 Two Letdown Coolers Vs One Letdown Cooler - Section 9.1.2.1

The FSAR was revised to state that two of the three letdown coolers are normally in service. This change was made to make the FSAR agree with the Enhanced Design Basis Document (EDBD) for the Makeup and Purification (MU) System. According to the EDBD for the MU System, the two coolers are in service to prevent thermal cycling when placing a standby cooler in or out of service. The plant operating procedure for the MU System has this requirement for two coolers to be operating. This requirement has been part of the CR-3 design basis since March 1977 when the Babcock & Wilcox Company advised FPC to operate two letdown coolers in parallel to minimize thermal transients on the coolers. There is no evidence that a 10 CFR 50.59 evaluation was performed in 1977. We now recognize this was an error. Therefore, FPC will perform a 10 CFR 50.59 USQ determination on the use of two letdown coolers as the normal service prior to restarting CR-3 from the current outage.

Issue #10 Change in Makeup Tank High Level Alarm - Section 9.1.2.6

This change to the FSAR increased the Makeup Tank high level alarm from 86" to 100" nominal. During the NRC's February 10-13 visit, FPC mistakenly stated that the 10 CFR 50.59 evaluation involving this change did not specifically assess the change in alarm setpoint. FPC researched this issue and has determined that the 10 CFR 50.59 evaluation did consider the effect of the Makeup Tank level change. The 10 CFR 50.59 evaluation describing this change was provided on Page 22 of the attachment to FPC's letter dated December 9, 1996, which submitted the biennial report of 10 CFR 50.59 evaluations. This evaluation concluded that this change did not introduce an USQ.

Issue #11 Air Handling Changes - Section 9.7

There appear to be many changes in this section of the FSAR because revision bars are on every page. There are three reasons for these changes. First, there were two changes within this section which were accompanied by 10 CFR 50.59

evaluations that did not identify any USQs. Section 9.7.2.1.a was revised to clarify when the SW System is used versus the Industrial Cooling System for Reactor Building (RB) cooling and how many RB fans may operate. Section 9.7.2.1.h.5 was revised to clarify normal cooling in the Turbine Building Switchgear Room.

Second, this section received a review by Nuclear Licensing to add FPC equipment tag numbers to hardware that was described by text. Third, pages were consolidated to eliminate intentionally blank pages or partially filled pages. FPC regarded the last two reasons as being editorial changes which do not require 10 CFR 50.59 evaluations and do not involve USQs.

Issue #12 Reduce Fire Service Water Supply Pressure - Section 9.8.7.1

This change to the FSAR decreased the Fire Service Jockey Pump discharge pressure from 110 psig to 105 psig. The issue is that the 10 CFR 50.59 evaluation did not specifically assess the change in discharge pressure. Precursor Card 97-1274 was initiated to request review of this issue.

That evaluation concluded that changing the jockey pump starting pressure was not an USQ because the margin of safety for the fire service system was improved, not decreased. That conclusion was based on the function of the jockey pump is to reduce the number of starting cycles on the fire service pumps due to system leakage and pressure losses during no flow demand conditions.

Issue #13 MUT Tank Operating Conditions - Table 9-19 (Refer to Issue #15)

Issue #14 ECCS Pump NPSH - Table 6-12 (Refer to Issue #15)

Issue #15 Change in ECCS Sump Volume - Table 6-15

The foregoing two issues were grouped with Issue #15 as one discussion with the NRC during the February 13 visit. In each case, the 10 CFR 50.59 evaluation for the change did not address each change specifically. Precursor Card 97-1273 identified this issue as needing further evaluation. The present schedule is to complete this evaluation by August 25, 1997. Following completion of this Precursor Card evaluation, FPC will provide a review package to the Senior Resident Inspector for review and closure.

Attachment 2

List of Regulatory Commitments

The following table identifies those actions committed to by Florida Power Corporation in this document. Any other actions discussed in the submittal represents intended or planned actions by Florida Power Corporation. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager, Nuclear Licensing of any questions regarding this document or any associated regulatory commitments.

ID NUMBER	COMMITMENT	COMMITMENT DATE OR OUTAGE
3F0697-20-1	FPC will correct an error made in FSAR Section 5.5.3.2, Revision 23 that dealt with an emergency signal causing the Group B (outside air supply) valves and Group C (building exhaust) valves to close.	12/31/97
3F0697-20-2	FPC will return the statement "One Reactor Building Emergency Cooling Unit and the Reactor Building Spray System operating at one-half capacity" to Section 6.2.3.	12/31/97
3F0697-20-3	FPC will perform a 10 CFR 50.59 USQ determination on the use of two letdown coolers as the normal service prior to restarting CR-3 from the current outage.	11/30/97
3F0697-20-4	Complete evaluation of PC 97-1273.	8/25/97
3F0697-20-5	Following completion of Precursor Card (PC 97-1273) evaluation, FPC will provide a review package to the Senior Resident Inspector for review and closure.	09/30/97
3F0697-20-6	FPC will submit a letter to the NRC describing the FSAR improvement initiatives being taken by FPC.	7/25/97
3F0697-20-7	FPC will revise FSAR Table 4-8 to read 11 cycles for the HPI nozzles and Figure 4-16 will be removed in FSAR Revision 24.	12/31/97