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

March 24, 1992
3F0392-01

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Refuel 8 Scope

Reference: 1. FPC to NRC letter dated October 1, 1990
2. NRC to FPC letter dated June 21, 1990

Dear Sir:

Florida Power Corporation (FPC) is providing this correspondence to keep the NRC Staff updated on those activities we have completed during the current operating cycle and that we plan to complete in the upcoming Refuel 8 (8R) outage. This letter also discusses items we had committed to accomplish by 8R that we may now not be able to fully complete and requests your concurrence to extend the approved schedule.

We plan to take Crystal River Unit 3 (CR-3) off line on or about April 30, 1992 for a 56 day refueling outage. The NRC Staff has been made aware through earlier discussions that our good performance in the operating period (currently an 80% cycle capacity factor including the Mid-cycle 8 (8M) outage) resulted in a rate of fuel burn-up such that a Fall 1992 refueling date was no longer practical. In order to avoid the summer peak demand period (June 1 - September 30) on our system, and yet retain the maximum time available for planning and material delivery, the outage was rescheduled to late Spring (April 30 - June 25). We typically begin Spring outages in mid-March. The net effect of these constraints has been to significantly reduce our planning and preparation time for the outage and to reduce our margin between restart and the summer peak demand period.

When we rescheduled the 8R outage (a decision made in early 1991), we assessed our ability to fulfill all regulatory commitments and, based on information available at that time, concluded it was possible to do so. However, our current scheduling effort indicates the completion of certain modifications may not be possible within the constraints we must consider. When this became apparent, we began discussing this possibility with appropriate members of the NRC Staff.

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Our long-term plans (contained in our Master Schedule) are to maintain nominal 24 month cycle lengths with a planned mid-cycle maintenance outage alternating each year with the refueling outages each Spring. This plan is intended to produce relatively levelized availability and generation costs as opposed to having years with high cost and low availability associated with refueling outages alternating with years of lower costs and higher availability. Further, we have been successful in advancing the schedules of appropriate field work while the unit is on-line as opposed to doing whole projects during planned outage time-frames. This approach has allowed us to better constrain supplemental manpower requirements during outages. This further levelizes costs, but also has positive effects on work quality and safety by assuring enhanced supervisory oversight. This has allowed us to complete the non-1E Battery ahead of schedule and to make significant progress on the new auxiliary feedwater pump installation.

The 8M Outage was the first of these mid-cycle outages at CR-3. A number of activities were completed during that outage. These included:

1) Integrated Leak Rate Test of the Reactor Building;

2) A limited scope of Local Leak Rate Testing;

3) A required (reduced frequency) snubber visual inspection;

4) The final tie-in of the new non-safety related battery. This allowed significant load reductions on the recently replaced Class 1E batteries thereby supplying sufficient margin to accommodate Station Blackout coping without significant DC Load Management;

5) The replacement of the temporarily installed spare site transformer with one designed to serve as the Off-Site Power Transformer;

6) The walkdowns needed to support completion of the qualification files and identify needed modifications to implement the expanded EQ Master List Scope;

7) Partial installation of the Smart Analog Signal selector (SASS) and the new auxiliary feedwater pump (FWP-7) modifications; and

8) The walkdowns of the proposed RB Flood Level-related relocation to optimize constructability.

The scope of 8R is continuing to be refined, but it <u>currently</u> includes the following items in addition to refueling, routine corrective and preventive maintenance activities, surveillance testing, etc:

1) Completion of the HPI Flow Upgrades to bring this parameter into full compliance with Regulatory Guide 1.97, Category 1 requirements;

2) Completion of a majority of the outstanding SPIP (Safety and Performance Improvement Program) items, most notably SASS (which detects failed instrumentation inputs and automatically selects the correct inputs for ICS);

3) Improved internal flooding protection by encapsulating Circulating and Raw Water system expansion joints (majority of CW scheduled to be done on-line);

4) Retubing the "A" water-box of the main condenser with titanium tubes (the first of four water-boxes);

5) Continuation of MOV program implementation including differential pressure MOVATs tests (completion schedule remains Refuel 9 (9R) outage unless the scope is expanded by ongoing industry/NRC efforts);

6) Final installation of FWP-7 (this closes GSI-124 for CR-3);

7) Replacement of Control Rod Position Indicator (PI) tubes with dual-channel PI design (requires NRC approval of TSCRN 195);

8) Relocation of RB equipment above the post-LOCA flood level (will not be fully completed);

9) Various modifications necessary to support expanded EQ Master List (will be accomplished to the extent possible);

10) Completion of modifications to the Atmospheric Dump Valves to support Station Blackout coping. (This will complete the physical modifications necessary to comply with 10 CFR 50.63. All procedural changes will be implemented prior to restart as well.);

11) Completion of the instrument replacements and NDE work to resolve the Intermediate Building High Energy Line Break issue;

12) Installation of reactor vessel fluence monitoring (part of the B&WOG integrated fluence monitoring program);

13) Initiation of preliminary work to support Mid-cycle 9 (9M) outage installation of the new 230kV to 4160V ES Transformer;

14) Replacement of the "C" Reactor Coolant Pump rotating assembly and cover;

15) Waterslap of both OTSG's;

16) OTSG Eddy Current Testing (enhanced in response to lessons learned from recent industry experience) and removal of a number of tubes in order to better characterize identified indications; and

17) Extensive Low Pressure Turbine and related inspections.

This extensive list illustrates our continued commitment to the overall improvement in plant safety and reliability. Our challenge is to plan and manage the outage activities in a safe and efficient manner. Two of the items that we may not be able to complete (RB equipment relocation and EQ modifications) are activities we had committed to complete by 8R when it was scheduled for the Fall of 1992. These are more fully addressed below.

We stated in Reference 1 that the RB equipment relocations were contingent on material delivery and the ability to complete the modifications within a normal refueling outage schedule. A listing of the affected equipment is attached. The design and field installation packages are being developed in three phases. One phase was issued several months ago and the second phase will be issued within the next few weeks. The third phase was to address components in the Letdown Cooler Room which we no longer plan to modify. The 8M outage was used to walkdown the modification packages for the first phase and perform design walkdowns for the second and third phases.

The scope addressed in the third phase was position indication equipment associated with two Letdown Cooler isolation valves. The only viable means to move the indication outside the post-LOCA flood region is to raise the valves themselves. This work scope would be very difficult due to the tight confines and piping configuration in the Letdown Cooler Room. Based on other work we have done in this location, the radiation exposure received would be significant. The indication components are only a few inches below the maximum flood level and would not be submerged for at least 25 minutes into the event; well after the valves will have operated. FPC has concluded the exposure and cost to absolutely assure retention of the position indication is not warranted from an overall consideration of safety.

The current plan for the other two phases is to complete all the work in the first phase and to complete as much work on the second phase as the schedule allows. This is reflected in the last column of the attached table. The remainder of the work, with one exception, will be completed in 9M currently scheduled for the Spring of 1993. The RB Flood Level interim corrective action was justified and approved by the NRC until the end of Refuel 8 (Reference 2) with a condition that NRC approval for any schedule change was necessary. At the time our commitment to resolve this issue was made, it was anticipated 8R would occur in the Fall of 1992. Extension to 9M represents no more than a six month addition to the original schedule. The principle reasons for needing to alter the original schedule are resource management concerns and interferences with other 8R work scope. The south wall workscope would interfere somewhat with RB sump pump replacement, TSP basket installation and RB sump transmitter activities. The one item deferred to 9R (DHV-3) would require extensive work in both decay heat trains and is located below RCP work activities thus creating a potential personnel safety hazard. The 9M outage will not involve a defueled window facilitating work on decay heat trains. Defueling will occur in 9R and the RCP work in that outage is not in the same RB area.

The Equipment Qualification modifications are being made to implement an expanded EQ Master List. The expanded list is principally a result of establishing a radiation threshold for identifying harsh environment areas in a manner more consistent with industry practice. Components on the expanded list were walked down and necessary upgrades have been identified. These include MOV motor replacements, installation of qualified splices, etc. The EQ modification packages are in various stages of development. Some will not be issued until a few days before the outage begins. At this point, it appears that we will have adequate manpower to complete these modifications. However, we have recently identified some small motors (lube oil pumps) that have a delivery date outside the 8R window. We will attempt to complete these items, but expect to defer part of the scope to 9M.

These changes in 8R scope also impact the review of license amendment requests currently underway within the NRC staff. The analyses to support utilization of Tri-Sodium Phosphate (TSP), as well as that associated with raising the BWST maximum boron concentration, rely on post-LOCA sump inventory assumptions consistent with complete utilization of the BWST. Since the RB equipment relocations are not expected to be completed, FPC may have to defer the utilization of TSP instead of Sodium Hydroxide to control post-LOCA pH in the RB Spray System. Therefore, we may have to defer the implementation of the associated Technical Specification Change Requests, 186 (TSP) and 194 (Maximum BWST Boron Concentration), until 9M. Nevertheless, we have requested that the reviews for these items proceed to completion.

Please provide your approval to complete the RB Flood Level and EQ modifications as described above. We would be pleased to have a meeting with the appropriate members of the NRC staff to go over our plans more fully and to address any concerns that may arise. Your prompt consideration of our request is appreciated.

Sincerely,

P. M. Beard, Jr.
Senior Vice President
Nuclear Operations

Attachment

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

EQUIPMENT RELOCATED TO RESOLVE RB FLOOD LEVEL ISSUE

| LOCATION | TAG NO. | DESCRIPTION | PRINCIPAL USE | SCHEDULE |
|---|---|---|---|---|
| NORTH Y: STEAM GENERATOR 3A | RC-158-PT | Ext. Range RCS Pressure | RSP | 8R |
| | RC-147-PT | Low Range RCS Pressure | RSP | 8R |
| | RC-1-LT3 | Pressurizer Level | RG 1.97 | 8R |
| | RC-3A-PT4 | Wide Range RCS Pressure | ESAS | 8R |
| | SP-20-LT | High Range OTSG Level | EFIC | 8R |
| | SP-28-LT | Low Range OTSG Level | EFIC | 8R |
| | SP-18-LT | High Range OTSG Level | EFIC | 8R |
| NORTH X: STEAM GENERATOR 3A | RC-131-PT1 | Low Range RCS Pressure | PORV LTOP | 8R |
| | RC-3A-PT3 | Wide Range RCS Pressure | ESAS | 8R |
| | RC-1-LT1 | Pressurizer Level | RG 1.97 | 8R |
| | RC-131-PT | Low Range RCS Pressure | PORV LTOP | 8R |
| | SP-19-LT | High Range OTSG Level | EFIC | 8R |
| | SP-27-LT | Low Range OTSG Level | EFIC | 8R |
| SOUTH Y: STEAM GENERATOR 3B | RC-159-PT | Ext. Range RCS Pressure | RSP | 9M |
| | RC-148-PT | Low Range RCS Pressure | RSP | 9M |
| | SP-22-LT | High Range OTSG Level | EFIC | 9M |
| | SP-24-LT | High Range OTSG Level | EFIC | 9M |
| | SP-32-LT | Low Range OTSG Level | EFIC | 9M |
| | SP-29-LT | Low Range OTSG Level | EFIC | 9M |
| SOUTH X: STEAM GENERATOR 3B | RC-132-PT | Wide Range RCS Pressure | ACI | 9M |
| | RC-3B-PT3 | Wide Range RCS Pressure | ESAS | 9M |
| | SP-21-LT | High Range OTSG Level | EFIC | 9M |
| | SP-23-LT | High Range OTSG Level | EFIC | 9M |
| | SP-31-LT | Low Range OTSG Level | EFIC | 9M |
| | SP-30-LT | Low Range OTSG Level | EFIC | 9M |

EQUIPMENT RELOCATED TO RESOLVE RB FLOOD LEVEL ISSUE

| LOCATION | TAG NO. | DESCRIPTION | PRINCIPAL USE | SCHEDULE |
|---|---|---|---|---|
| SOUTH WEST SHIELD WALL: RICTS | RC-163A-LT1 | Hot Leg Level | ICC | 9M |
| | RC-163B-LT1 | Hot Leg Level | ICC | 9M |
| | RC-164A-LT1 | Reactor Vessel Level | ICC | 9M |
| | RC-164B-LT1 | Reactor Vessel Level | ICC | 9M |
| | RC-163A-TE1 | Temp. Comp. HL Level | ICC | 9M |
| | RC-163B-TE1 | Temp. Comp. HL Level | ICC | 9M |
| | RC-164A-TE1 | Temp. Comp. RV Level | ICC | 9M |
| | RC-164B-TE1 | Temp. Comp. RV Level | ICC | 9M |
| MOTOR OPERATED VALVES: | CAV-1 | Pzr Steam Space Isol | PASS | 8R |
| | CAV-3 | Pzr Water Space Isol | PASS | 8R |
| | CAV-4 | OTSG Sample Isol | PASS | 8R |
| | CAV-5 | OTSG Sample Isol | PASS | 8R |
| | CAV-126 | Letdown Sample Isol | PASS | 8R |
| | MUV-40 | Letdown Isol | CIV | DELETE |
| | MUV-41 | Letdown Isol | CIV | DELETE |
| | MUV-505 | Letdown Isol | CIV | 9M |
| | DHV-3 | DH Dropline Isol | CIV | 9R |
| | DHV-4 | DH Dropline Isol | CIV | 8R |
| RB AVG. TEMPERATURE: | AH-536-TE | RB Temperature | SPDS | 9M |

RSP = Remote Shutdown Panel
ESAS = Engineered Safeguards Actuation System
EFIC = Emergency Feedwater Initiation & Control
ICC = Inadequate Core Cooling
SPDS = Safety Parameter Display System
PASS = Post Accident Sampling System
ACI = Automatic Containment Isolation
CIV = Containment Isolation Valve
LTOP = Low Temperature Overpressure Protection