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NewYorkPower Authority

Michael J. Colomb
Plant Manager

October 3, 1996
JAFP-96-0391

U. S. Nuclear Regulatory Commission
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Washington, DC 20555

SUBJECT: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Supplemental Information Regarding Updated Page Changes for Proposed Change to the Technical Specifications Regarding Power Uprate (JPTS-91-025)

REFERENCES:

1. NYPA Letter, Michael J. Colomb to the NRC, "Updated Page Changes for Proposed Change to the Technical Specifications Regarding Power Uprate (JPTS-91-025)," JAFP-96-306, dated August 15, 1996

2. NYPA Letter, Michael J. Colomb to the NRC, "Installation of the (Alternate) Decay Heat Removal System," JAFP-96-0291, dated July 26, 1996

Dear Sir:

Reference 1 transmitted revised proposed Technical Specification pages and other information regarding the proposed change to the Technical Specifications to allow operation at an uprated power of 2536 MW_t. Two questions have been raised by the NRC during their final reviews in preparation for issuance of the Technical Specification amendment for power uprate. The first regards the finding of no significant environmental effects of uprated power, and the second was a request for an updated description of refueling practices at the plant.

A discussion of the "Significant Hazards Consideration Assessment" was included within Attachment IV of the transmittal. This included the statements that "NYPA expects to apply for a SPDES permit modification which raises the allowable intake-discharge temperature difference. This is required because present condenser (the condenser was retubed in the 1994-1995 refueling outage) and circulating water system performance trends indicate that plant output may need to be limited below full uprated values to comply with the present limit." After review of condenser and circulating water system evaluations for power uprate, NYPA no longer plans on requesting a revision to the SPDES permit which would allow a higher intake-discharge temperature difference. A revised Attachment IV is provided with this letter.

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NYPA is installing a Decay Heat Removal System (DHRS) at JAF to enhance decay heat removal capabilities during refueling outages with the ultimate goal of enhancing outage performance. Details of the DHR design and the associated Nuclear Safety Evaluations were transmitted to the NRC Staff via reference 2.

If the DHRS is unavailable, present limitations on fuel movement will remain in effect: 96 hours must elapse after shutdown before fuel movement to the Spent Fuel Pool (SFP) begins, the rate of movement cannot exceed 4 assemblies per hour and SFP temperature will be maintained between 68 °F and 125 °F using the Fuel Pool Cooling system, or 68 °F and 135 °F using the Fuel Pool Cooling assist mode of the Residual Heat Removal (RHR) system. These limitations are based on the analyses supporting the current licensing basis. If NYPA chooses to reevaluate the ability of FPC (with or without RHR Fuel Pool Cooling assist) to meet decay heat removal requirements for different fuel movement plans, such changes in plans will be controlled in accordance with 10 CFR 50.59.

The limits on fuel movement may be relaxed if the DHRS is available. The DHRS is able to remove decay heat from fuel in either the reactor core or the SFP utilizing natural circulation between the reactor cavity and the SFP. When the DHRS is operated in the maximum cooling mode, it is capable of removing 45 E+6 Btu/hr at a SFP temperature of 125 °F and an ambient wet bulb temperature of 73 °F. A bounding calculation of decay heat load (assuming power uprate, high-energy 24 month cycles and an end of life full SFP) shows a thermal loading less than 45 E+6 Btu/hr 1.5 days following shutdown. Therefore, if the DHRS is available to operate in the maximum heat removal configuration and RHR is available to operate in the Shutdown Cooling or Fuel Pool Cooling Assist mode(s), fuel movement to the SFP may be initiated 1.5 days after shutdown, and there will be no limit on the rate of movement. These limitations on fuel movement maintain the plant in a configuration which will tolerate failure of an active component with no degradation of the decay heat removal function. While this is not required by the plant's licensing basis, it is desirable for managing shutdown risk. SFP temperature will continue to be maintained between 68 °F and 125 °F using the DHRS or between 68 °F and 135 °F if the Fuel Pool Cooling Assist mode of RHR is used.

The bounding decay heat load becomes less than the nominal heat removal capability of the DHRS (30 E+6 Btu/hr at a SFP temperature of 125 °F and an ambient wet bulb temperature of 73 °F) 4.5 days following shutdown. After this time tolerance to failure of an active component is provided by maintaining the DHRS available to operate in the maximum heat removal configuration or by maintaining DHRS in the nominal configuration with RHR available for operation in the Shutdown Cooling or Fuel Pool Cooling Assist mode(s).

Choice of fuel movement strategies between full core offload/onload and core shuffle for any outage will be dependent on outage management considerations and our licensing basis.

NYPA commits, as stated in Attachment 1, to perform the following tests for power uprate:

a. Main Steam Isolation Valve testing will be performed in accordance with Technical Specification 4.7.D.1.c.(2.) which requires, "With the reactor at a reduced power level, fast close each main steam isolation valve, one at a time, and verify closure time," test acceptance criteria require valve closure within between the limits of 3 seconds and 5 seconds. This testing will be performed during power ascension at approximately 70 percent of uprate power.

b. A modification of the Reactor Core Isolation Cooling system which replaces the steam admission valve addresses the concerns of General Electric SIL No. 377, RCIC Startup Transient Improvement with Steam Bypass. Reactor Core Isolation Cooling system performance testing will be performed in accordance with Technical Specification 4.5.E.1, which requires that, "The RCIC pump shall deliver at least 400 gpm for a system head corresponding to a reactor pressure of 1195 psig to 150 psig," for the power uprate condition. Performance and/or operability testing will be performed during the power ascension at reactor pressures of approximately 150 psig and 1000 psig and at approximately 100 percent of uprate power.

c. High Pressure Coolant Injection system performance testing will be performed in accordance with Technical Specification 4.5.C.1, which requires that, "the HPCI pump shall deliver at least 4250 gpm against a system head corresponding to a reactor vessel pressure of 1195 psig to 150 psig," for the power uprate condition. Performance and/or operability testing will be performed during the power ascension at reactor pressures of approximately 150 psig and 1000 psig and at approximately 100 percent of uprate power.

If you have any questions, please contact Mr. R. Plasse at (315) 349-6793.

Very truly yours,

MICHAEL J. COLOMB
Plant Manager

Att: As stated

cc: next page

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Attachment 1
Summary of Commitments

Commitment Number	Commitment	Due Date
JAFP-96-0391-01	Perform MSIV fast closure test.	S/U Following RFO-12
JAFP-96-0391-02	Perform RCIC tests.	S/U Following RFO-12
JAFP-96-0391-03	Perform HPCI tests.	S/U Following RFO-12

Attachment IV to JAFP-96-0306

CLARIFICATIONS REGARDING NEDC-32016P

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333
DPR-59

This attachment discusses sections of the Power Uprate Safety Analysis Report (PUSAR) which have been affected by modifications proposed subsequent to the submittal or later work done in support of power uprate.

Neutron Monitoring System

§5.1.1.1 of the PUSAR stated that "Due to the new defined rated power, the flow-biased APRM rod block and simulated thermal power monitor (STPM) scram setpoints will be effectively modified (see section 5.1.2), because the same percent power difference between the rod block warning and scram protection will be maintained." Upon approval and implementation of JPTS-96-005, Proposed Change to the Technical Specifications Regarding Implementation of BWROG Option I-D Long-Term Solution for Thermal Hydraulic Stability, the STPM time delay will be removed from the APRM flow-biased scram. Therefore, for cycle 13 operation (the first cycle of uprated operation), a more accurate description of the neutron monitoring system is that the APRM flow-biased rod blocks and scram setpoints will be effectively modified because the instruments will be calibrated to the new rated power such that the same percentage margin will exist between the normal operating point and the rod block and between the rod block and scram setpoint.

ATWS Recirculation Pump Trip

§5.1.2.2 of the PUSAR stated that, "These evaluations found a resulting increase in the peak vessel bottom pressure. However, the calculated peak pressure will remain below the 1500 psig limit for ATWS. Therefore, the existing ATWS-RPT setpoint is acceptable." This statement is true, however this setpoint is below the setpoint at which SRVs are set to lift. Therefore to reestablish margin between the SRV lifting and the ATWS setpoints, an analysis was performed to determine the ATWS high reactor pressure setpoint which is acceptable if either zero or one SRV is out of service. This analysis proved that an ATWS setpoint above the lowest SRV pressure is acceptable for zero or one SRV out of service. JPTS-96-009, Proposed Change to the Technical Specifications Regarding ATWS Recirculation Pump Trip Instrumentation Requirements was submitted to the NRC requesting the change.

§9.3.1 of the PUSAR also discussed ATWS events and the basis for acceptability of the plant response:

> "A generic evaluation for the ATWS event is in Section 3.7 of Supplement 1 to Reference 2. This evaluation concludes that the ATWS acceptance criteria for fuel, RPV and containment integrity will be met for power uprate, if:
>
> 1. reactor power increases ≤ 5%;
> 2. dome pressure increases ≤ 40 psi;

3. SRV opening setpoints increase ≤ 80 psi; and
4. ATWS high pressure setpoint increases ≤ 20 psi.

The parameter changes at FitzPatrick for power uprate are within the above criteria. Therefore, the FitzPatrick response to an ATWS event at uprated power is acceptable."

The ATWS Recirculation Pump High RPV Pressure setpoint proposed in JPTS-96-009 is more than 20 psi above the present setpoint (the setpoint will be raised 35 psi for zero or one SRV out of service), however the change is supported by an analysis specific to FitzPatrick of the MSIV closure event (the limiting event with respect to the high RPV pressure setpoint). This analysis also concludes that the ATWS acceptance criteria for fuel, RPV and containment integrity will be met with the new setpoint.

EHC Turbine Control System

§5.2.1.2 of the PUSAR stated that, "No modification to the turbine control valves or the turbine bypass valves are required for operation at the uprated throttle pressure conditions. No control stability problems associated with the increase in steam pressure are expected for power uprate operation." It has since been determined that modification of the EHC logic is required to improve reactor pressure control. The steam line resonance compensation will be modified to include filtering the third harmonic. The card which controls opening of the number 4 control valve will be replaced and the cards for the first three control valves adjusted to improve control valve opening characteristics.

Equipment Qualification

§10.2 of the PUSAR stated that, "Except as noted below, normal (current) EQ aging parameters (pressure, temperature, radiation) remain bounding for power uprate." §10.2.3 of the PUSAR discussed EQ for the steam tunnel with no inclusion of the effect of higher temperature (due to higher saturation temperature of the steam contained in the lines and higher feedwater temperature at full power) during normal operations on equipment aging. These effects are being investigated and will be included in the EQ program for affected components.

Significant Hazards Consideration Assessment

§11 of the PUSAR stated that NYPA would "apply for a small increase in the state thermal discharge limit." NYPA was notified by the New York State Department of Environmental Conservation, by letter dated December 1, 1995, that the State Pollutant Discharge Elimination System Permit for the facility was modified to allow a net heat addition of 6.00×10^9 Btu/hr to Lake Ontario, as required for power uprate.

The effect of power uprate on radiation levels associated with normal operation were evaluated in the PUSAR (§8.5). At most, dose rates are expected to increase no more than the change in power level and the impact was judged to be negligible or insignificant.