UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 15, 1975

Docket No. 50-333

Power Authority of the State
of New York
ATTN: Mr. George T. Berry
General Manager and
Chief Engineer
10 Columbus Circle
New York, New York 10019

Gentlemen:

Our letter to you of February 13, 1975, discussed the Steam Vent Clearing Phenomenon and the Steam Quenching Vibration Phenomenon at various BWR plants with Mark I Containments. We also requested that you initiate action in accordance with a prescribed schedule of major events set forth in this letter. The first action to be accomplished was your submittal of proposed Technical Specifications to revise the suppression pool water temperature limits. Your letter of March 31, 1975, proposed no such changes to the Technical Specifications.

Because of the potential adverse effects on public health and safety of continued plant operation in accordance with existing Technical Specifications related to this matter, we believe that appropriate changes to these Technical Specifications are needed to assure that the integrity of the pressure suppression pool of your facility continues to be maintained. Accordingly, unless you inform us in writing within 20 days of the date of this letter that you do not agree with this course of action, including your reasons, we plan to initiate steps to issue the enclosed change to the Technical Specifications of the FitzPatrick Plant. A copy of our related Safety Evaluation is enclosed.

Sincerely,

Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Reactor Licensing

Enclosures:
1. Proposed Changes to Technical Specifications
2. Safety Evaluation

cc: See next page

D-26

cc w/enclosures:

Scott B. Lilly, General Counsel
Power Authority of the
State of New York
10 Columbus Circle
New York, New York 10019

Arvin E. Upton, Esquire
LeBoeuf, Lamb, Leiby and MacRae
1757 N Street, NW.
Washington, D. C. 20036

Lauman Martin, Esquire
Senior Vice President
and General Counsel
Niagara Mohawk Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Mr. Z. Chilazi
Power Authority of the
State of New York
10 Columbus Circle
New York, New York 10019

J. Bruce MacDonald, Deputy
Commissioner and Counsel
New York State Department of
Commerce and Counsel to the
Atomic Energy Council
99 Washington Avenue
Albany, New York 12210

Ecology Action
c/o Richard Goldsmith
Syracuse University
College of Law
E. I. White Hall Campus
Syracuse, New York 13210

Ms. Suzanne Weber
R.D. #3, West Lake Road
Oswego, New York 13126

Oswego City Library
120 East Second Street
Oswego, New York 13126

Mr. Robert P. Jones, Supervisor
Town of Scriba
R. D. #4
Oswego, New York 13126

Mr. Alvin L. Karkau
Chairman, County Legislature
County Office Building
46 East Bridge Street
Oswego, New York 13126

Dr. William E. Seymour
Staff Coordinator
New York State Atomic Energy
Council
New York State Department of
Commerce
112 State Street
Albany, New York 12207

Mr. Paul Arbesman
Environmental Protection Agency
26 Federal Plaza
New York, New York 10007

Anthony Z. Roisman, Esquire
Berlin, Roisman & Kessler
1712 N Street, NW
Washington, D.C. 20036

PROPOSED CHANGES TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

The enclosed pages 165, 166, 187, 188, and 188a are proposed as replacement pages to the Appendix A Technical Specifications. The changed areas on the revised pages are shown by a marginal line.

3.7 LIMITING CONDITIONS FOR OPERATION

3.7 CONTAINMENT SYSTEMS

Applicability:

Applies to the operating status of the primary and secondary containment systems.

Objective:

To assure the integrity of the primary and secondary containment systems.

Specification:

A. Primary Containment

1. The volume and temperature of the water in the pressure suppression chamber shall at all times, except as specified in Specification 3.5.F.2, be maintained within the following limits:

   a. Maximum water volume 110,100 ft^3 corresponding to a vent submergence level of 56 in.

   b. Minimum water volume 105,600 ft^3 corresponding to a vent submergence level of 4 ft 2 in.

   c. Maximum water temperature

      (1) During normal power operation maximum water temperature shall be 95F.

4.7 SURVEILLANCE REQUIREMENTS

4.7 CONTAINMENT SYSTEMS

Applicability:

Applies to the primary and secondary containment integrity.

Objective:

To verify the integrity of the primary and secondary containment systems.

Specification:

A. Primary Containment

1. The pressure suppression chamber water level and temperature shall be checked once per day. The accessible interior surfaces of the drywell and above the water line of the pressure suppression chamber shall be inspected at each refueling outage for evidence of deterioration. Whenever there is indication of relief valve operation or testing which adds heat to the suppression pool, the pool temperature shall be continually monitored and also observed and logged every 5 minutes until the heat addition is terminated. Whenever there is indication of relief valve operation with the temperature of the suppression pool reaching 160F or more and the primary coolant system pressure greater than 200 psig, an external visual examination of the suppression chamber shall be conducted before resuming power operation.

(2) During testing which adds heat to the suppression pool, the water temperature shall not exceed 10F above the normal power operation limit specified in (1) above. In connection with such testing, the pool temperature must be reduced to below the normal power operation limit specified in (1) above within 24 hours.

(3) The reactor shall be scrammed from any operating condition if the pool temperature reaches 110F. Power operation shall not be resumed until the pool temperature is reduced below the normal power operation limit specified in (1) above.

(4) During reactor isolation conditions, the reactor pressure vessel shall be depressurized to less than 200 psig at normal cooldown rates if the pool temperature reaches 120F.

2. Primary containment integrity shall be maintained at all times when the reactor is critical or when the reactor water temperature is above 212°F, and fuel is in the reactor vessel, except while performing low power physics tests at atmospheric pressure at power levels not to exceed 5 MWt.

2. The primary containment integrity shall be demonstrated as follows:

a. Type A Test (primary Containment Integrated Leakage Rate Test)

(1.) Containment inspection shall be performed as a prerequisite to the performance of Type A tests. During the period between the initiation of the containment inspection and the performance of the Type A test, no repairs or adjustments shall be made.

3.7 BASES

A. Primary Containment

The integrity of the primary containment and operation of the Emergency Core Cooling Systems in combination limit the offsite doses to values less than those suggested in 10CFR100 in the event of a break in the Reactor Coolant System piping. Thus, containment integrity is specified whenever the potential for violation of the Reactor Coolant System integrity exists. Concern about such a violation exists whenever the reactor is critical and above atmospheric pressure. An exception is made to this requirement during initial core loading and while the low power test program is being conducted during initial startup and ready access to the reactor vessel is required. There will be no pressure on the system at this time, which will greatly reduce the chances of a pipe break. The reactor may be taken critical during this period; however, restrictive operating procedures, RSCS and RWM, will be in effect again to minimize the probability of an accident occurring. Procedures and the rod worth minimizer would limit control worth to less than 1.5 percent k. In the unlikely event that an excursion did occur, the reactor building and Standby Gas Treatment System, which shall be operational during this time, offers a sufficient barrier to keep offsite doses well within 10CFR100.

The pressure suppression pool water provides the heat sink for the Reactor Coolant System energy release following a postulated rupture of the system. The pressure suppression chamber water volume must absorb the associated decay and structural sensible heat released during reactor coolant system blowdown from 1,020 psig.

Since all of the gases in the drywell are purged into the pressure suppression chamber air space during a loss of coolant accident, the pressure resulting from isothermal compression plus the vapor pressure of the liquid must not exceed 56 psig, the suppression chamber design pressure. The design volume of the suppression chamber (water and air) was obtained by considering that the total volume of reactor coolant to be condensed is discharged to the suppression chamber and that the drywell volume is purged to the suppression chamber (Section 5.2).

Using the minimum or maximum water volumes given in the specification, containment pressure during the design basis accident is approximately 45 psig which is below the design of 56 psig. Maximum water volume of 110,100 ft^3 results in a downcomer submergence of 56 in and the minimum volume of 105,600 ft^3 results in a submergence approximately 6 in. less. The majority of the Bodega tests (9) were run with a submerged length of 4 ft and with complete condensation. Thus, with respect to downcomer submergence, this specification is adequate.

The maximum temperature at the end of blowdown tested during the Humboldt Bay (10) and Bodega Bay tests was 170°F, and this is conservatively taken to be the limit for complete condensation of the reactor coolant, although condensation would occur for temperatures above 170°F.

Should it be necessary to drain the suppression chamber, this should only be done when there is no requirement for Emergency Core Cooling Systems operability as explained in basis 3.5.F.

Using a 40°F rise (Section 5.2 FSAR) in the suppression chamber water temperature and a maximum initial temperature of 95°F, a temperature of 145°F is achieved, which is well below the 170°F temperature which is used for complete condensation.

For an initial maximum suppression chamber water temperature of 95°F and assuming the normal complement of containment cooling pumps (two LPCI pumps and two RHR service water pumps) containment pressure is not required to maintain adequate net positive suction head (NPSH) for the core spray LPCI and HPCI pumps.

Limiting suppression pool temperature to 105°F during RCIC, HPCI, or relief valve operation, when decay heat and stored energy are removed from the primary system by discharging reactor steam directly to the suppression chamber assures adequate margin for a potential blowdown any time during RCIC, HPCI, or relief valve operation.

Experimental data indicates that excessive steam condensing loads can be avoided if the peak temperature of the suppression pool is maintained below 160°F during any period of relief valve operation with sonic conditions at the discharge exit. Specifications have been placed on the envelope of reactor operating conditions so that the reactor can be depressurized in a timely manner to avoid the regime of potentially high suppression chamber loadings.

In addition to the limits on temperature of the suppression chamber pool water, operating procedures define the action to be taken in the event a relief valve inadvertently opens or sticks open. These procedures include: (1) use of all available means to close the valve, (2) initiate suppression pool water cooling heat exchangers, (3) initiate reactor shutdown, and (4) if other relief valves are used to depressurize the reactor, their discharge shall be separated from that of the stuck-open relief valve to assure mixing and uniformity of energy insertion to the pool.

Because of the large volume and thermal capacity of the suppression pool, the volume and temperature normally changes very slowly and monitoring these parameters daily is sufficient to establish any temperature trends. By requiring the suppression pool temperature to be continually monitored and frequently logged during periods of significant heat addition, the temperature trends will be closely followed so that appropriate action can be taken. The requirement for an external visual examination following any event where potentially high loadings could occur provides assurance that no significant damage was encountered. Particular attention should be focused on structural discontinuities in the vicinity of the relief valve discharge since these are expected to be the points of highest stress.

If a loss-of-coolant accident were to occur when the reactor water temperature is below 330°F, the containment pressure will not exceed the 56 psig design pressure, even if no condensation were to occur. The maximum allowable pool temperature, whenever the reactor is above 212°F, shall be governed by this