



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 163
License No. DPR-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated July 16, 1998, as supplemented by letter dated September 3, 1998, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter 1;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-69 is hereby amended to read as follows:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 163 are hereby incorporated into this license. Niagara Mohawk Power Corporation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



S. Singh Bajwa, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 18, 1998



ATTACHMENT TO LICENSE AMENDMENT NO.163

TO FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Replace the following page of the Appendix A Technical Specifications with the attached page.

Remove

96
97
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98

Insert

96
97
97a (new)
98



LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

3.2.3 COOLANT CHEMISTRY

Applicability:

Applies to the reactor coolant system chemical requirements.

Objective:

To assure the chemical purity of the reactor coolant water.

Specification:

- a. The reactor coolant water shall not exceed the following limits for > 24 hours with the coolant temperature ≥ 200 degrees F and reactor thermal power $\leq 10\%$, or a shutdown shall be initiated within 1 hour and the reactor shall be shutdown and reactor coolant temperature be reduced to < 200 degrees F within 10 hours.

Conductivity	1 μ mho/cm
Chloride ion	100 ppb
Sulfate ion	100 ppb

4.2.3 COOLANT CHEMISTRY

Applicability:

Applies to the periodic testing requirements of the reactor coolant chemistry.

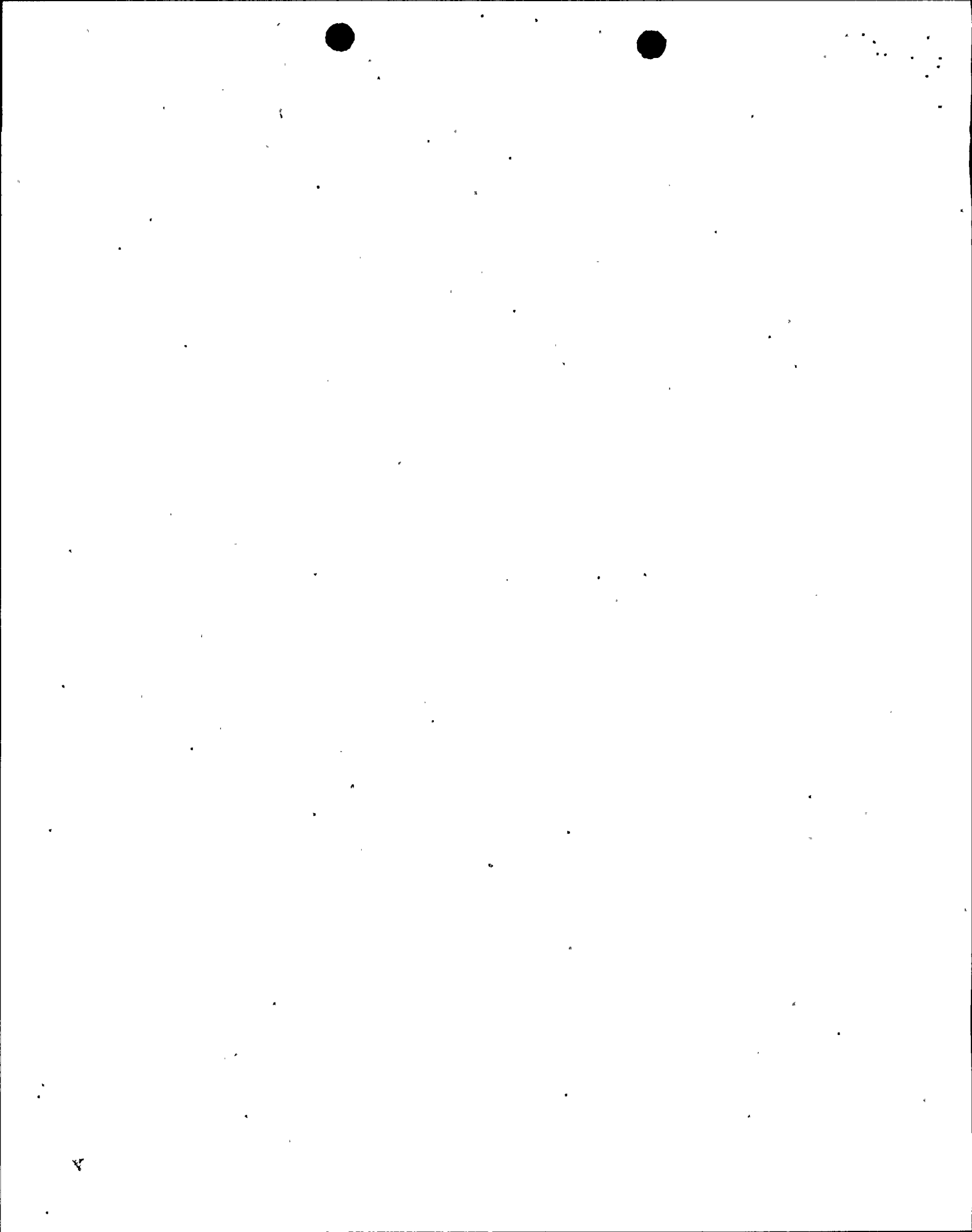
Objective:

To determine the chemical purity of the reactor coolant water.

Specification:

Samples shall be taken and analyzed for conductivity, chloride and sulfate ion content daily. In addition, if the conductivity becomes abnormal (other than short term spikes) as indicated by the continuous conductivity monitor, samples shall be taken and analyzed within 8 hours.

When the continuous conductivity monitor is inoperable, a reactor coolant sample shall be taken and analyzed for conductivity, chloride and sulfate ion content at least once per 8 hours.



LIMITING CONDITION FOR OPERATION

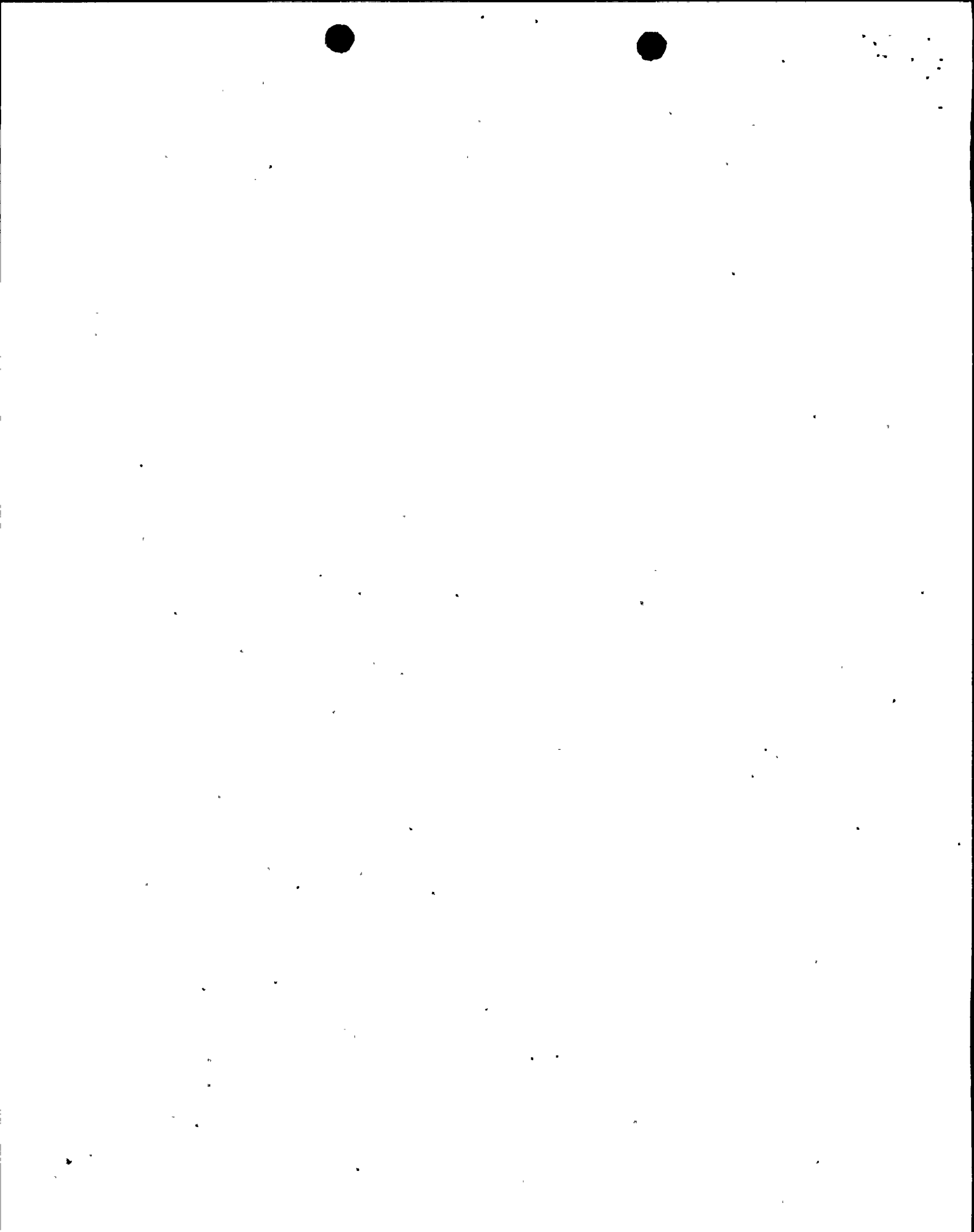
- b. The reactor coolant water shall not exceed the following limits for >24 hours with reactor thermal power >10%, or a shutdown shall be initiated within 1 hour and the reactor shall be shutdown and reactor coolant temperature be reduced to <200 degrees F within 10 hours.

Conductivity	1 μ mho/cm
Chloride ion	20 ppb
Sulfate ion	20 ppb

- c. In no case shall the reactor coolant exceed the following limits at the specified conditions or, a shutdown shall be initiated within 1 hour and the reactor shall be shutdown and reactor coolant temperature be reduced to <200 degrees F within 10 hours.

1. With reactor coolant temperature \geq 200 degrees F, the conductivity has a maximum limit of 5 μ mho/cm, or
2. With reactor coolant temperature \geq 200 degrees F and reactor thermal power \leq 10%, the maximum limit of chloride or sulfate ion concentration is 200 ppb, or
3. With reactor thermal power >10%, the maximum limit of chloride or sulfate ion concentration is 100 ppb.

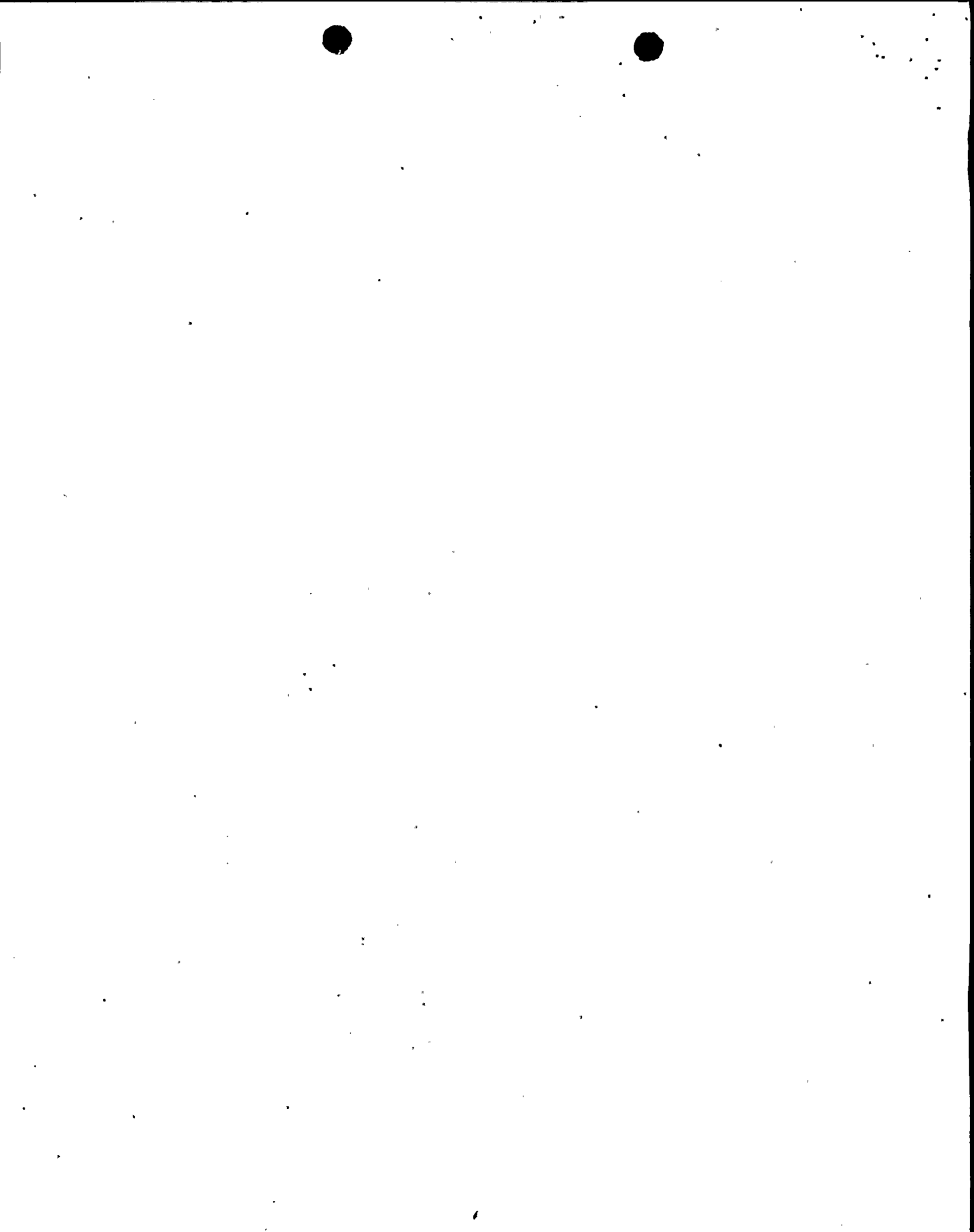
SURVEILLANCE REQUIREMENT



LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

- d. If the continuous conductivity monitor is inoperable for more than seven days, a shutdown shall be initiated within 1 hour and the reactor shall be shutdown and reactor coolant temperature be reduced to <200 degrees F within 24 hours.



BASES FOR 3.2.3 AND 4.2.3 COOLANT CHEMISTRY

In its May 8, 1997 letter, the NRC required that NMPC submit an application for amendment to address the differences between the current TS conductivity limits for reactor coolant chemistry and the analysis assumptions for the core shroud crack growth evaluations. The purpose of this specification is to limit intergranular stress corrosion cracking (IGSCC) crack growth rates through the control of reactor coolant chemistry. The LCO values ensure that transient conditions are acted on to restore reactor coolant chemistry values to normal in a reasonable time frame. Under transient conditions, potential crack growth rates could exceed analytical assumptions, however, the duration will be limited so that any effect on potential crack growth is minimized and the design basis assumptions are maintained. The plant is normally operated such that the average coolant chemistry for the operating cycle is maintained at the conservative values of $< 0.19 \mu\text{mho/cm}$ for conductivity and $< 5 \text{ ppb}$ for chloride ions and $< 5 \text{ ppb}$ for sulfate ions. This will ensure that the crack growth rate is bounded by the core shroud analysis assumptions. Since these are average values, there are no specific LCO actions to be taken if these values are exceeded at a specific point in time. The EPRI "BWR Water Chemistry Guidelines-1996 Revision" (EPRI TR-103515-R1, BWRVIP-29) action level 1 guidelines suggest that if conductivity is above $0.3 \mu\text{S/cm}$, or chloride or sulfate ions exceed 5 ppb, that corrective action be initiated as soon as possible and to restore levels below level 1 within 96 hours. If the parameters are not reduced to below these levels within 96 hours, complete a review and implement a program and schedule for implementing corrective measures.

Specifications 3.2.3a, b, and c are consistent with NMPC's commitment to Table 4.4 of the BWR water chemistry guidelines. The 24 hour action time period for exceeding the coolant chemistry limits described in 3.2.3a and b ensures that prompt action is taken to restore coolant chemistry to normal operating levels. The requirement to commence a shutdown within 1 hour, and to be shutdown and reactor coolant temperature be reduced to < 200 degrees F within 10 hours minimizes the potential for IGSCC crack growth. Reactor water samples are analyzed daily to ensure that reactor water quality remains within the BWR water chemistry guidelines. These samples are analyzed and compared to action level 1 values.

The conductivity of the reactor coolant is continuously monitored. The continuous conductivity monitor is visually checked shiftly in accordance with procedures. The monitor alarms at the local panel. The recorder, which is located in the Control Room, alarms in the Control Room. The samples of the coolant which are analyzed for conductivity daily will serve as a comparison with the continuous conductivity monitor. The primary sample point for the reactor water conductivity samples is the non-regenerative heat exchanger in the reactor water cleanup system. An alternate sample point is the #11 recirculation loop. The reactor coolant samples will also be used to determine the chloride and sulfate concentrations. Therefore, the sampling frequency is considered adequate to detect long-term changes in the chloride and sulfate ion content. However, if the conductivity becomes abnormal ($> 0.19 \mu\text{mho/cm}$), other than short term spike chloride and sulfate measurements will be made within 8 hours to assure that the normal limits ($< 5 \text{ ppb}$ of chloride or sulfate ions) are maintained. A short term spike is defined as a rise in conductivity ($> 0.19 \mu\text{mho/cm}$) such as that which could arise from injection of additional feedwater flow for a duration of approximately 30 minutes in time. These actions will minimize the potential for IGSCC crack growth.

