



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 12, 2001

Mr. H. B. Barron  
Vice President, McGuire Site  
Duke Energy Corporation  
12700 Hagers Ferry Road  
Huntersville, NC 28078-8985

SUBJECT: ISSUANCE OF AMENDMENTS - MCGUIRE NUCLEAR STATION, UNITS 1  
AND 2 (TAC NOS. MA9934 AND MA9935)

Dear Mr. Barron:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 198 to Facility Operating License NPF-9 and Amendment No. 179 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. The amendments are in response to your application dated August 22, 2000, as supplemented by letter dated November 7, 2000.

The amendments revise the Technical Specifications (TS) of each unit to restore a time limit for an allowable condition for the occurrence of an inoperable refueling water storage tank level transmitter in TS 3.3.2.

A Notice of Issuance of Amendments will be included in the Commission's biweekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script that reads "Robert E. Martin".

Robert E. Martin, Senior Project Manager Project  
Directorate II/1  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-369 and 50-370

Enclosures:

1. Amendment No. 198 to NPF-9
2. Amendment No. 179 to NPF-17
3. Safety Evaluation

cc w/encls: See next page

April 12, 2001

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A Notice of Issuance of Amendments will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager  
Project Directorate II/1  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CORPORATION

DOCKET NO. 50-369

McGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 198  
License No. NPF-9

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility), Facility Operating License No. NPF-9 filed by the Duke Energy Corporation (licensee) dated August 22, 2000, as supplemented November 7, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
  - 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 set forth in 10 CFR Chapter I;
  - 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.

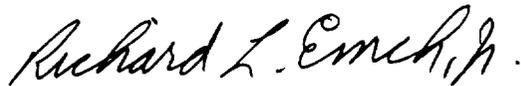
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-17 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 198, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Duke shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Richard L. Emch, Jr., Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Operating License  
Changes

Date of Issuance: April 12, 2001



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

DUKE ENERGY CORPORATION

DOCKET NO. 50-370

McGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 179  
License No. NPF-17

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility), Facility Operating License No. NPF-17 filed by the Duke Energy Corporation (licensee) dated August 22, 2000, as supplemented November 7, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
  - 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 set forth in 10 CFR Chapter I;
  - 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.

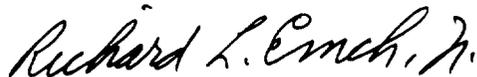
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-9 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 179 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Duke shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Richard L. Emch, Jr., Chief, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Operating License  
Changes

Date of Issuance: April 12, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 198

FACILITY OPERATING LICENSE NO. NPF-9

AND

ATTACHMENT TO LICENSE AMENDMENT NO. 179

FACILITY OPERATING LICENSE NO. NPF-17

DOCKET NOS. 50-369 AND 50-370

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. \*No changes made to text. Pages are included to accommodate rollover of text for document completeness.

Remove

Insert

3.3.2-6

3.3.2-6

3.3.2-7

3.3.2-7

3.3.2-13

3.3.2-13

B 3.3.2-36

B 3.3.2-36

B 3.3.2-37

B 3.3.2-37

B 3.3.2-38\*

B 3.3.2-38

B 3.3.2-39\*

B 3.3.2-39

B 3.3.2-40\*

B 3.3.2-40

B 3.3.2-41\*

B 3.3.2-41

B 3.3.2-42

ACTIONS (continued)

CONDITIONS		REQUIRED ACTION	COMPLETION TIME
N.	One or more channels of Auxiliary Feedwater Suction Pressure-Low for one auxiliary feedwater pump inoperable.	N.1 Restore channel(s) to OPERABLE status.	48 hours
		<u>OR</u>	
		N.2 Declare associated auxiliary feedwater pump inoperable.	48 hours
O.	One or more channels of Auxiliary Feedwater Suction Pressure-Low for two or more auxiliary feedwater pumps inoperable.	O.1 Declare associated auxiliary feedwater pumps inoperable.	Immediately
P.	One channel inoperable.	P.1 Place channel in trip.	1 hour
		<u>AND</u>	
		P.2 Restore channel to OPERABLE status.	48 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>Q. One channel inoperable.</p>	<p>Q.1 Verify interlock is in required state for existing unit condition.</p> <p><u>OR</u></p> <p>Q.2.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>Q.2.2 Be in MODE 4.</p>	<p>1 hour</p> <p>7 hours</p> <p>13 hours</p>
<p>R. One or more Containment Pressure Control System channel(s) inoperable.</p>	<p>R.1 Declare affected supported system inoperable.</p>	<p>Immediately</p>
<p>S. Required Action and associated Completion Time of Condition P not met.</p>	<p>S.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>S.2 Be in MODE 4.</p>	<p>6 hours</p> <p>12 hours</p>

ESFAS Instrumentation  
3.3.2

Table 3.3.2-1 (page 4 of 6)  
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
6. Auxiliary Feedwater (continued)						
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Station Blackout						
(1) Loss of voltage	1,2,3	3 per bus	D	SR 3.3.2.7 SR 3.3.2.9	≥ 3122 V (Unit 1) ≥ 3108 V (Unit 2) with 8.5 ± 0.5 sec time delay	3174 V (Unit 1) 3157 V (Unit 2) ± 45 V with 8.5 ± 0.5 sec time delay
(2) Degraded Voltage	1,2,3	3 per bus	D	SR 3.3.2.7 SR 3.3.2.9	≥ 3661 V (Unit 1) ≥ 3685.5 V (Unit 2) with ≤ 11 sec with SI and ≤ 600 sec without SI time delay	3678.5 V (Unit 1) 3703 V (Unit 2) with ≤ 11 sec with SI and ≤ 600 sec without SI time delay
e. Trip of all Main Feedwater Pumps	1,2(a)	1 per MFW pump	K	SR 3.3.2.7 SR 3.3.2.9	NA	NA
f. Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	2 per MDP, 4 per TDP	N,O	SR 3.3.2.7 SR 3.3.2.8 SR 3.3.2.9	≥ 3 psig	3.5 psig
7. Automatic Switchover to Containment Sump						
a. Refueling Water Storage Tank (RWST) Level - Low	1,2,3	3	P, S	SR 3.3.2.1 SR 3.3.2.3 SR 3.3.2.8 SR 3.3.2.9	≥ 175.85 inches	180 inches
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

(a) Above the P-11 (Pressurizer Pressure) Interlock.

BASES

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## ACTIONS (continued)

this case, the associated AFW pumps must be declared inoperable immediately.

P.1 and P.2

Condition P applies to RWST Level-Low Coincident with Safety Injection.

RWST Level-Low Coincident With SI provides actuation of switchover to the containment sump. The inoperable channel shall be returned to OPERABLE status or placed in the trip condition within 1 hour. This Condition applies to a function that operates on two-out-of-three logic. Therefore, failure of one channel places the Function in a two-out-of-two configuration. The channel must be tripped to place the Function in a one-out-of-two configuration that satisfies redundancy requirements. A channel placed in the trip condition shall be restored to OPERABLE status within 48 hours. With one channel in the trip condition, a single failure of another channel coincident with a design basis Loss of Coolant Accident (LOCA) could result in premature automatic switchover of ECCS pumps to the containment recirculation sump. For a failure leading to early switchover, plant analyses assume operators do not have sufficient time to resolve the problem prior to ECCS pump damage. Consequently, as a result of this premature switchover, both trains of ECCS pumps could fail due to insufficient sump water level. This could prevent the ECCS pumps from performing their post-LOCA cooling function. The allowed Completion Time of 48 hours is reasonable since, based on operating experience, there is a very small probability of a random failure of another RWST level channel in a given 48 hour period.

Q.1, Q.2.1 and Q.2.2

Condition Q applies to the P-11 and P-12 interlocks.

With one channel inoperable, the operator must verify that the interlock is in the required state for the existing unit condition. The verification is performed by visual observation of the permissive status light in the unit control room. This action manually accomplishes the function of the interlock. Determination must be made within 1 hour. The 1 hour Completion Time is equal to the time allowed by LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to

BASES

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ACTIONS (continued)

reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks.

R.1

Condition R applies to the Containment Pressure Control System Start and Terminate Permissives.

With one or more channels inoperable, the affected containment spray, containment air return fans, and hydrogen skimmer fans must be declared inoperable immediately. The supported system LCOs provide the appropriate Required Actions and Completion Times for the equipment made inoperable by the inoperable channel. The immediate Completion Time is appropriate since the inoperable channel could prevent the supported equipment from starting when required. Additionally, protection from an inadvertent actuation may not be provided if the terminate function is not OPERABLE.

S.1 and S.2

Condition S applies to RWST Level-Low Coincident with Safety Injection.

When Required Actions cannot be completed within their Completion Time, the unit must be brought to a MODE or Condition in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and MODE 4 within 12 hours of entering the Condition. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection functions noted above.

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**SURVEILLANCE  
REQUIREMENTS**

The SRs for each ESFAS Function are identified by the SRs column of Table 3.3.2-1.

A Note has been added to the SR Table to clarify that Table 3.3.2-1 determines which SRs apply to which ESFAS Functions.

BASES

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## SURVEILLANCE REQUIREMENTS (continued)

Note that each channel of process protection supplies both trains of the ESFAS. When testing channel I, train A and train B must be examined. Similarly, train A and train B must be examined when testing channel II, channel III, and channel IV (if applicable). The CHANNEL CALIBRATION and COTs are performed in a manner that is consistent with the assumptions used in analytically calculating the required channel accuracies.

SR 3.3.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and reliability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.2.2

SR 3.3.2.2 is the performance of an ACTUATION LOGIC TEST. The SSPS is tested every 31 days on a STAGGERED TEST BASIS, using the semiautomatic tester. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and that there is an intact voltage signal path to the master relay coils. The Frequency of every 31 days on

BASES

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SURVEILLANCE REQUIREMENTS (continued)

a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.2.3

SR 3.3.2.3 is the performance of a COT on the RWST level and Containment Pressure Control Start and Terminate Permissives.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be found within the Allowable Values specified in Table 3.3.1-1. This test is performed every 31 days. The Frequency is adequate, based on operating experience, considering instrument reliability and operating history data.

SR 3.3.2.4

SR 3.3.2.4 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. This test is performed every 31 days on a STAGGERED TEST BASIS. The time allowed for the testing (4 hours) and the surveillance interval are justified in Reference 7.

SR 3.3.2.5 is the performance of a COT.

A COT is performed on each required channel to ensure the channel will perform the intended Function. The tested portion of the loop must trip within the Allowable Values specified in Table 3.3.1-1.

The setpoint shall be left set consistent with the assumptions of the setpoint methodology.

The Frequency of 92 days is justified in Reference 7.

BASES

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SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.6

SR 3.3.2.6 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation MODE is either allowed to function, or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment that may not be operated in the design mitigation MODE is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay. This test is performed every 92 days. The Frequency is adequate, based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.2.7

SR 3.3.2.7 is the performance of a TADOT. This test is a check of the Manual Actuation Functions, AFW pump start, Reactor Trip (P-4) Interlock, and Doghouse Water Level-High High feedwater isolation. It is performed every 18 months. Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.). The Frequency is adequate, based on industry operating experience and is consistent with the typical refueling cycle. The SR is modified by a Note that excludes verification of setpoints during the TADOT for manual initiation Functions. The manual initiation Functions have no associated setpoints.

SR 3.3.2.8

SR 3.3.2.8 is the performance of a CHANNEL CALIBRATION.

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter within the necessary range and accuracy.

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the unit specific setpoint methodology.

The Frequency of 18 months is based on the assumption of an 18 month

BASES

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SURVEILLANCE REQUIREMENTS (continued)

calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology.

This SR is modified by a Note stating that this test should include verification that the time constants are adjusted to the prescribed values where applicable. The applicable time constants are shown in Table 3.3.2-1.

SR 3.3.2.9

This SR ensures the individual channel ESF RESPONSE TIMES are less than or equal to the maximum values assumed in the accident analysis. Response Time testing acceptance criteria are included in the UFSAR (Ref. 2). Individual component response times are not modeled in the analyses. The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the Trip Setpoint value at the sensor, to the point at which the equipment in both trains reaches the required functional state (e.g., pumps at rated discharge pressure, valves in full open or closed position).

For channels that include dynamic transfer functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer functions set to one with the resulting measured response time compared to the appropriate UFSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured.

ESF RESPONSE TIME tests are conducted on an 18 month STAGGERED TEST BASIS. Testing of the final actuation devices, which make up the bulk of the response time, is included in the testing of each channel. The final actuation device in one train is tested with each channel. Therefore, staggered testing results in response time verification of these devices every 18 months. The 18 month Frequency is consistent with the typical refueling cycle and is based on unit operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

This SR is modified by a Note that clarifies that the turbine driven AFW pump is tested within 24 hours after reaching 900 psig in the SGs.

BASES

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- REFERENCES
1. UFSAR, Chapter 6.
  2. UFSAR, Chapter 7.
  3. UFSAR, Chapter 15.
  4. IEEE-279-1971.
  5. 10 CFR 50.49.
  6. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
  7. WCAP-10271-P-A, Supplement 1 and Supplement 2, Rev. 1, May 1986 and June 1990.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20545

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 198 TO FACILITY OPERATING LICENSE NPF-9  
AND AMENDMENT NO. 179 TO FACILITY OPERATING LICENSE NPF-17

DUKE ENERGY CORPORATION

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By letter dated August 22, 2000, as supplemented by letter dated November 7, 2000, Duke Energy Corporation (DEC or the licensee), submitted a request to revise the Technical Specifications (TS) of each unit to restore a time limit for an allowable condition for the occurrence of an inoperable refueling water storage tank level transmitter in TS 3.3.2.

2.0 DISCUSSION AND EVALUATION

In the event of a loss-of-coolant accident (LOCA) from the reactor coolant system, the refueling water storage tank (RWST) provides a source of water for the plant's safety injection pumps, residual heat removal pumps, and charging pumps. As this water source is drawn down, the need arises to switch the suction source for the engineered safety feature (ESF) pump's water supply to the reactor containment sump, where an inventory of water will have accumulated.

The TS for the Engineered Safety Features Actuation Systems (ESFAS) Instrumentation includes a line-item entry specifying the requirements for the instrumentation for switching of the water source from the RWST to the containment sump. This transfer would be made upon an indication of low level in the RWST as measured by level transmitters in the RWST system. Prior to the conversion of the TS to the format of NUREG-1431, Standard Technical Specifications - Westinghouse Plants, Revision 1, in Amendment 184 to the McGuire Unit 1 TS and Amendment 166 to the McGuire Unit 2 TS, dated September 30, 1998, the required action for one channel of the function being inoperable was specified by TS Table 3.3-3, Item 8, "Automatic Switchover to Recirculation - RWST Level", ACTION 15b, as follows:

**ACTION 15b** With the number of OPERABLE channels one less than the Total Number of Channels, operation may proceed until performance of the next required OPERATIONAL TEST provided the inoperable channel is placed in the tripped condition within 1 hour.

The frequency of the channel Operational Tests was specified as on a monthly basis in TS Table 4.3-2, Item 8. Therefore, the previously existing TS allowed a maximum period of 30 days for the condition of one inoperable channel being placed in the tripped condition,

dependant on the point in a 30 day Operational Test period that it was declared to be inoperable.

The signal to transfer the suction source from the RWST to the containment sump is initiated by a 2 out of 3 logic for the RWST low level signal. The current TS allow one channel of RWST level-low to be placed in the tripped condition with no time limit. With one channel in the tripped condition, a single failure of a second channel of RWST level-low could cause transfer of the suction source to the containment sump before the RWST level reaches the low level setpoint and before adequate inventory had accumulated in the containment sump. If this were to occur during a LOCA, the ESF pumps could have their suction source supplied by an inadequate inventory of coolant, possibly resulting in the failure of the ESF pumps.

The licensee's proposed revision to require restoring a tripped channel of RWST level to OPERABLE status within 48 hours imposes a limit on the amount of time that a channel can be in a tripped condition to 48 hours. Additionally, proposed new Condition S requires that, if the inoperable channel of RWST level is not removed from the tripped condition within 48 hours, the unit be in at least hot standby (MODE 3) within the next 6 hours and in hot shutdown (MODE 4) within the following 12 hours. The requirement to be in hot standby within the next 6 hours and in hot shutdown within the next 12 hours is consistent with the requirements for other McGuire ESFAS instrumentation and is acceptable.

The licensee states that the 48 hour allowed time was selected because operating experience has demonstrated that there is a very small probability of a random failure of another RWST channel in a given 48 hour period and because it is consistent with current McGuire TS 3.3.2 requirements. For instance, for four other Conditions in TS 3.3.2 (Conditions B, F, G, N) addressing the return of an inoperable channel to OPERABLE status, the time limit is 48 hours. The licensee also noted that the 48 hour limit is consistent with the disposition of a similar technical specification issue on the Arkansas Nuclear One, Unit 2 (ANO-2) plant on December 29, 1998. The ANO-2 TS example also dealt with placing a limit (48 hours) on the time to return an inoperable channel of refueling water storage tank level to a condition of OPERABLE.

Additionally, in its submittal dated November 7, 2000, the licensee evaluated the risk impacts of one RWST level transmitter in a tripped condition for up to 48 hours for small and large break loss-of-coolant accidents. The probabilistic risk analysis of the RWST level transmitter being out of service showed the estimated incremental conditional core damage probability (ICCDP) was 2.0E-09 for the 48 hour duration. This ICCDP value of 2.0E-09 is below the Regulatory Guide 1.177 threshold of 5.0E-07 that is considered small for a single TS allowed outage time change. Therefore, the NRC staff concludes that this proposed TS amendment involves minimal safety impact.

The licensee's proposal is also consistent with the Standard Technical Specifications (STS) in NUREG-1431 for conditions addressing the return of an inoperable channel to OPERABLE status, wherein the time limit is also 48 hours. However, the STS specify that for one out of four channels of RWST Level-Low Low inoperable, Condition K requires placing the channel in bypass within 6 hours with no time limit. This is an acceptable response for a four channel system but would not be acceptable for the McGuire RWST three channel system, since as noted above, with one inoperable channel, the system does not have sufficient redundancy to

accommodate an additional single failure without disabling actuation of the switchover when required. Therefore, it is desirable to limit this condition to a 48 hour period.

The proposed changes do not modify the design or configuration of the plant. The proposed changes provide a more restrictive time limit for a channel of RWST Level-low to be in a tripped condition than is currently allowed by the TS. By reducing the allowed time, the probability is reduced that a single failure of another channel would result in an early transfer of pump suction during the injection phase of a LOCA. On these bases, the staff finds the proposed changes to be acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official, Mr. Virgil Autrey, was notified of the proposed issuance of the amendments. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (65 FR 65341). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

### 5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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