Docket No. 50-244

August 24, 1990

Dr. Robert C. Mecredy
Vice President, Nuclear Production
Rochester Gas & Electric Corporation
89 East Avenue
Rochester, New York 14649

Dear Dr. Mecredy:

SUBJECT: ISSUANCE OF AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. DPR-18 - R. E. GINNA NUCLEAR POWER PLANT (TAC NO. 73136)

The Commission has issued the enclosed Amendment No. 40 to Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment is in response to your application dated May 9, 1989, as supplemented on February 20, 1990.

This amendment incorporates additional Specifications and Action Statements to the Ginna Technical Specifications (TS) regarding required operability and testing, of the Ginna Station motor-driven and turbine-driven auxiliary feedwater (AFW) pumps. In particular, additional Action Statements have been added for the turbine-driven AFW System and its relationship to 10 CFR 50.63, the Station Blackout Rule. Reformat of the Specifications and Action Statements have been modified for clarification. The TS change also precludes outages in excess of 37 days for inoperable AFW pumps.

A copy of our Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by:

Allen Johnson, Project Manager
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 40 to License No. DPR-18
2. Safety Evaluation

cc w/enclosures:
See next page

*See Previous Concurrence

SUBJECT TO REVISION OF SAFETY EVALUATION FOR COMMENTS.

LA:PDI-3	PM:PDI-3*	OGC	(A)PD:PDI-3
BClayton	AJohnson/mes	EHoller	JNerses
8/16/90	08/03/90	8/14/90	8/23/90

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AMENDMENT NO. 40 TO DPR-18 - R. E. GINNA NUCLEAR POWER PLANT DATED August 24, 1990

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

ROCHESTER GAS AND ELECTRIC CORPORATION

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 40
License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:

   A. The application for amendment filed by the Rochester Gas and Electric Corporation (the licensee) dated May 9, 1989, as supplemented on February 20, 1990, 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 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. DPR-18 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 40, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 30 days after NRC approval.

FOR THE NUCLEAR REGULATORY COMMISSION

Victor Nerses, Acting Director
Project Directorate I-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 24, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 40

FACILITY OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove	Insert
3.4-1	3.4-1
3.4-2	3.4-2
3.4-3	3.4-3
---	3.4-4
4.8-1	4.8-1
4.8-2	4.8-2
4.8-3	4.8-3

3.4 TURBINE CYCLE

Applicability

Applies to the operating status of turbine cycle.

Objective

To define conditions of the turbine cycle steam-relieving capacity, and to define the Auxiliary Feedwater System and supporting Service Water System operation as necessary to ensure the capability to remove core decay heat. The Standby Auxiliary Feedwater System provides additional assurance of capability to remove core decay heat should the Auxiliary Feedwater System be unavailable.

3.4.1 MAIN STEAM SAFETY VALVES

Specification

Except during testing of the main steam safety valves, with the RCS temperature at or above 350°F, a minimum turbine cycle code approved steam relieving capability of eight (8) main steam safety valves shall be available.

Action

With one or more main steam code safety valves inoperable, restore the inoperable valve(s) to operable status within 4 hours or be in hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

3.4.2 AUXILIARY FEEDWATER

3.4.2.1 MOTOR-DRIVEN AUXILIARY FEEDWATER SYSTEM

Specification

With the RCS temperature at or above 350°F, both motor-driven auxiliary feedwater pumps must be operable, each with an operable flow path from the condensate storage tanks to its respective steam generator.

Action

a. With one motor-driven auxiliary feedwater pump inoperable and at least one turbine-driven auxiliary feedwater pump flowpath operable, restore the pump to operable status within 7 days or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

b. With both motor-driven auxiliary feedwater pumps inoperable, and at least one turbine-driven auxiliary feedwater pump flowpath operable (see 3.4.2.2), or with a motor-driven and turbine-driven pump (or both flow paths) inoperable, restore a pump to operable status within 24 hours or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

c. With all auxiliary feedwater pumps inoperable (motor-driven, turbine-driven, and standby), immediately initiate corrective action to restore any of these pumps to operable status as soon as possible.

3.4.2.2 TURBINE-DRIVEN AUXILIARY FEEDWATER SYSTEM

Specification

With the RCS temperature at or above 350°F, the turbine-driven auxiliary feedwater pump associated flow paths from the condensate storage tanks to the steam generators, and flow paths of steam from each steam generator to the pump turbine, must be operable. The turbine-driven auxiliary feedwater pump must be shown to be operable prior to exceeding 5% power.

Action

a. With the turbine-driven auxiliary feedwater pump and/or both associated flow paths inoperable, restore the pump (and at least one flow path) to operable status within 72 hours or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the next 6 hours.

b. With one associated flow path of the turbine-driven auxiliary feedwater pump inoperable, restore to operable status within 7 days or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the next 6 hours.

3.4.2.3 STANDBY AUXILIARY FEEDWATER SYSTEM

Specification

With the RCS temperature at or above 350°F, two standby auxiliary feedwater pumps each with an associated flow path from the service water system to its respective steam generator, shall be operable.

Action

a. With one standby auxiliary feedwater pump inoperable restore the pump to operable status within 14 days or be in hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

b. With both standby auxiliary feedwater pumps inoperable restore at least one standby auxiliary feedwater pump to operable status within 7 days or be in at least hot shutdown within 6 hours and at an RCS temperature less than 350°F in the following 6 hours.

3.4.3 SOURCES OF AUXILIARY FEEDWATER

Specification

a. With the RCS temperature at or above 350°F, the following sources of auxiliary feedwater shall be operable:

1) One or more condensate storage tanks with a minimum of 22,500 gallons of water, and

2) Service water as the primary supply to the standby auxiliary feedwater pumps.

Action

a. With the condensate storage tanks inoperable, within 4 hours either:

1) restore the condensate storage tanks to operable status, or be in at least hot shutdown within the following 6 hours and at an RCS temperature less than 350°F within the following 6 hours, OR

2) demonstrate the operability of the service water system as a water supply to the motor-driven and turbine-driven auxiliary feedwater pumps and restore the condensate storage tanks to operable status within 7 days, or be in at least hot shutdown within the following 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

b. With the service water system to one or both standby auxiliary feedwater pump(s) inoperable, declare the standby auxiliary feedwater pump(s) inoperable and comply with Specification 3.4.2.3.

Basis

A reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condenser. Therefore, core decay heat can be continuously dissipated via the steam bypass to the condenser as feedwater in the steam generator is converted to steam by heat absorption. Normally, the capability to return feedwater flow to the steam generators is provided by operation of the turbine cycle feedwater system.

In the event of a reactor and turbine trip, together with a loss of offsite power, immediate decay heat removal is effected via the main steam safety valves. The eight main steam safety valves have a total combined rated capability of 6,580,000 lbs/hr. This capability exceeds the total full power steam flow of 6,577,279 lbs/hr.

Following reactor/turbine trip, the motor-driven auxiliary feedwater system is automatically initiated on low-low level in one steam generator, a Safety Injection signal, or a trip of both main feedwater pumps. The turbine-driven auxiliary feedwater pump is initiated on low-low steam generator level in both steam generators, or a loss of power to electrical buses 11A and 11B. The motor-driven auxiliary feedwater system has two 100% capacity pumps, each normally serving one steam generator.

Their sources of water include the normally-aligned but non-safety-related and non Seismic Category I condensate storage tanks, and the safety-related service water system. The turbine-driven auxiliary feedwater system consists of one 200% capacity pump, two steam supply flow paths (one from each steam generator), a normal source of water from the non-safety-related condensate storage tanks, and a backup source of water from the safety-related service water system.[1]

The Ginna Station accident analyses[2] assume 200 gpm is delivered to an operable steam generator, in order to remove the required decay heat. The combination of motor-driven and turbine-driven auxiliary feedwater pumps assures operability of the system to meet these requirements, even assuming a single failure.

In the event of a high energy line break outside containment,[3] the operability of the motor-driven and turbine-driven auxiliary feedwater systems cannot be ensured, since the systems are not qualified for the ensuing harsh environment. The standby auxiliary feedwater system, which consists of two redundant pumps, a discharge flow path to each steam generator and suction from both loops of the safety-related service water system, performs this function. Operator action from the control room is required to effect operation of the SAFW system. The worst-case analysis, a feedwater line break,[5] has been performed, and the consequences were found to be acceptable.

The minimum amount of water in the condensate storage tanks is the amount needed to remove decay heat for 2 hours after reactor trip from full power.[4] An unlimited source for auxiliary feedwater is available using the safety-related service water system.

References:

(1) UFSAR Section 10.5

(2) UFSAR Sections 15.2, 15.3, 15.6

(3) "Effects of High Energy Pipe Breaks Outside the Containment Building" submitted by letter dated November 1, 1973 from K.W. Amish, Rochester Gas and Electric Corporation to A. Giambusso, Deputy Director for Reactor Projects.

(4) L.D. White, Jr. letter to Mr. D.L. Ziemann, USNRC dated March 28, 1980.

(5) SEP Topic XV-6, Feedwater System Pipe Breaks, NRC SER dated 9/4/81

4.8 AUXILIARY FEEDWATER SYSTEMS

Applicability

Applies to periodic testing requirements of the turbine-driven, motor-driven auxiliary feedwater pumps, and of the standby auxiliary feedwater pumps.

Objective

To verify the operability of the auxiliary feedwater system and the standby auxiliary feedwater system and their ability to respond properly when required.

Specification

4.8.1 Except when below 350°F each motor-driven auxiliary feedwater pump, unless it is declared inoperable without testing, will be started at intervals not to exceed one month and a flowrate of 200 gpm established.

4.8.2 Except when below 350°F the steam turbine-driven auxiliary feedwater pump, unless it is declared inoperable without testing, will be started at intervals not to exceed one month and a flowrate of 400 gpm established. If one discharge flow path is inoperable in accordance with Specification 3.4.2.2, a flow of 200 gpm must be established. Once the inoperable discharge flow path is returned to operable status, a flow of 400 gpm must be established within 72 hours thereafter.

4.8.3 Except when below 350°F the auxiliary feedwater pumps suction, discharge, and crossover motor operated valves shall be exercised at intervals not to exceed one month.

4.8.4 Except when below 350°F each standby auxiliary feedwater pump, unless it is declared inoperable without testing, will be started at intervals not to exceed one month and a flowrate of 200 gpm established.

4.8.5 Except when below 350°F the suction, discharge, and cross-over motor operated valves for the standby auxiliary feedwater pumps shall be exercised at intervals not to exceed one month.

4.8.6 These tests shall be considered satisfactory if control board indication and subsequent visual observation of the equipment demonstrate that all components have operated properly. These tests shall be performed prior to exceeding 5% power during startup if the time since the last test exceeds one month.

4.8.7 At least once per 18 months, control of the standby auxiliary feed system pumps and valves from the control room will be demonstrated.

Amendment No.40

4.8.8 At least once per 18 months during shutdown:

a. Verify that each automatic valve in the flow path for each auxiliary feedwater pump actuates to its correct position upon receipt of each auxiliary feedwater actuation test signal.

b. Verify that each auxiliary feedwater pump starts as designed automatically upon receipt of each auxiliary feedwater actuation test signal.

4.8.9 Each instrumentation channel shall be demonstrated operable by the performance of the Channel Check, Channel Calibration, and Channel Functional Test operations for the modes and at the frequencies shown in Table 4.1-1.

4.8.10 The response time of each pump and valve required for the operation of each "train" of auxiliary feedwater shall be demonstrated to be within the limit of 10 minutes at least once per 18 months.

Basis

The monthly testing of the auxiliary feedwater pumps by supplying feedwater to the steam generators will verify their ability to meet minimum required flowrates. The capacity of any one of the three auxiliary feedwater pumps is sufficient to meet decay heat removal requirements.[1] Proper functioning of the steam turbine admission valve and the feedwater pumps start will demonstrate the integrity of the steam driven pump.[2]

Monthly testing of the standby auxiliary feedwater pumps by supplying water from a condensate supply tank to the steam generators will verify their ability to meet minimum required flowrates.

The standby auxiliary feedwater pumps would be used only if all three auxiliary feedwater pumps were unavailable.[3] One of the two standby pumps would be sufficient to meet decay heat removal requirements. Proper functioning of the suction valves from the service water system, the discharge valves, and the crossover valves will demonstrate their operability. The operability of the standby auxiliary feedwater pump flow paths between the pumps and the steam generators is demonstrated using water from the test tank. Testing of the auxiliary feedwater pumps using their primary source of water supply will verify the operability of the auxiliary feedwater flow path.

Verification of correct operation will be made both from instrumentation within the main control room and by direct visual observation of the pumps.

References:

(1) FSAR - Section 10.5

(2) FSAR - Sections 15.2, 15.3, 15.6

(3) "Effects of High Energy Pipe Breaks Outside the Containment Building" submitted by letter dated November 1, 1973 from K.W. Amish, Rochester Gas and Electric Corporation to A. Giambusso, Deputy Director for Reactor Projects, U.S. Atomic Energy Commission.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 40 TO FACILITY OPERATING LICENSE NO. DPR-18

ROCHESTER GAS AND ELECTRIC CORPORATION

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

1.0 INTRODUCTION

1.1 Purpose

The licensee for the R.E. Ginna Nuclear Power Plant, the Rochester Gas and Electric Corporation (RG&E), in submittals dated May 9, 1989, as supplemented on February 20, 1990, proposed to change the Turbine Cycle Technical Specifications. The licensee's intention was to "reformat ... for clarity, and to incorporate changes to the Specifications and Action Statements for the auxiliary feedwater (AFW) pumps as well as changes to the testing requirements for the auxiliary feedwater pumps."

The licensee, by letter dated February 20, 1990, provided supplemental information. This supplemental submittal was not outside the scope of the proposed TS change noticed in the Federal Register (54 FR 37052) on September 6, 1989, and did not affect the staff's proposed determination that no significant hazards would result from these changes.

This proposed change addressed the concern expressed by the NRC Staff regarding the Technical Specifications for a main AFW system motor driven or turbine driven AFW pump which now permit outages in excess of 37 days for an inoperative pump. The proposed Technical Specifications have eliminated this concern, as well as improving the AFW Technical Specifications.

The Staff reviewed these proposed Technical Specifications; details of this review are provided in Section 2, below.

1.2 Description of the Ginna AFW System

The Ginna Nuclear Plant has an AFW system with two subsystems, the main auxiliary feedwater (MAFW) system and the standby AFW (SAFW) system. The MAFW system contains three pumps, two of which are motor driven while the third is driven by a steam turbine.

The primary water supply for the three MAFW pumps comes from the condensate storage tanks (CSTs) by gravity feed. The Technical Specifications require that the licensee maintain a minimum water supply of 22,500 gallons in these tanks for the MAFW pumps. A backup supply of water is provided by the service water system which takes water from Lake Ontario in the event that the CST supply is not available.

The MAFW system is normally separated into three trains, one for each motor driven pump, and one for the turbine driven pump. The motor driven pumps normally feed separate steam generators (A or B), but can be aligned to permit feeding either steam generator. The turbine-driven pump train normally feeds both steam generators. The motor driven pumps in the MAFW system start automatically if the level in one SG decreases to a low-low level of 17%. The turbine driven pump starts if the level in both SGs decreases to that level.

The SAFW system is intended for use in the event a main steamline break outside containment causes the MAFW system to fail because the MAFW system is not qualified to operate in the potentially harsh steam environment which can result from the steamline break. The SAFW system is a two-pump, two-train system which is separated from the MAFW system, and is started manually. Both SAFW pumps are motor driven. The water supply for the SAFW system is provided by the service water system. The SAFW system also contains a condensate supply tank with a capacity of 10,000 gallons which is normally used for testing the SAFW systems pumps.

The licensee uses the appellation AFW for both (1) the overall auxiliary feedwater system, containing both the main AFW system and the SAFW system; and (2) for the system containing three pumps (main AFW system). In order to avoid any potential confusion arising from such use, the NRC staff has included the appellation "main AFW" or "MAFW" when referring to the three-pump AFW system and "AFW system" when discussing the overall system in this Safety Evaluation. The word main or MAFW will not be inserted in the Technical Specifications, which may be contrary to RG&E standard nomenclature approved by the RG&E Plant Operating Review Committee (PORC), in which human factor considerations have been weighed.

2.0 EVALUATION OF PROPOSED TECHNICAL SPECIFICATIONS (TS)

The Licensee's Technical Specifications include four sections. The overall, inclusive Specification includes an "Applicability" section and a section entitled "Objective". Each specific Technical Specification contains a "Specification" and an "Action" statement. The Specification selection outlines the system or components covered by the specific Specification, together with the operational modes or conditions under which the system/component must be operable. The Action statement defines the actions to be taken in the event the system/component is inoperable or of limited operability. In the sections below, a detailed discussion is provided for each section of the Technical Specifications which the licensee proposes to change.

2.1 Technical Specification 3.4 - Turbine Cycle

Objective

The licensee reworded this portion of the proposed Technical Specifications in order to clarify the roles of the main steam safety valves, main AFW system, service water system, and SAFW system in removing core decay heat. The Staff finds this portion of the proposed Technical Specifications to be acceptable.

2.2 Technical Specification 3.4.1 - Main Steam Safety Valves

The substance of this specification has not been changed from what is the present Technical Specifications. The format, however, has been changed in that both the Specification section and the Action section, previously separated, have now been combined under Technical Specification 3.4.1.

The Staff finds proposed Technical Specification 3.4.1 to be acceptable.

2.3 Technical Specification 3.4.2 - Auxiliary Feedwater

2.3.1 Technical Specification 3.4.2.1 - Motor Driven Main Auxiliary Feedwater System

Proposed Technical Specification 3.4.2.1 is shown below:

3.4.2.1 MOTOR-DRIVEN MAIN AUXILIARY FEEDWATER SYSTEM

Specification

With the RCS temperature at or above 350°F, both motor-driven main auxiliary feedwater pumps must be operable, each with an operable flow path from the condensate storage tanks to its respective steam generator.

Action

a. With one motor-driven main auxiliary feedwater pump inoperable and at least one turbine-driven auxiliary feedwater pump flowpath operable, restore the pump to operable status within 7 days or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

b. With both motor-driven main auxiliary feedwater pumps inoperable, and at least one turbine-driven auxiliary feedwater pump flowpath operable (see 3.4.2.2), or with a main motor-driven and turbine-driven pump (or both flow paths) inoperable, restore a pump operable status within 24 hours or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

c. With all auxiliary feedwater pumps inoperable (motor-driven main, turbine-driven, and standby), immediately initiate corrective action to restore any of these pumps to operable status as soon as possible.

The Licensee, in the Specification section, requires the motor-driven main AFW pumps to be operable only when the RCS temperature is at or above 350°F; the present Specification requires these pumps to be operable when the RCS temperature is in excess of 200°F. This proposed change is in agreement with the conditions specified for operability of the AFW system by the Standard Technical Specifications for Westinghouse Pressurized Reactors (STS-W), NUREG-0452, Revision 4, dated Fall 1982. Accordingly, the staff finds the

proposed Specification section to be acceptable. It should be noted that the STS-W only considers AFW systems with 3 pumps, similar to those in the Ginna MAFW subsystem.

In the event one motor-driven MAFW pump is inoperable, the licensee proposes to allow seven (7) days to repair the pump (Action statement 3.4.2.1a). With both motor-driven MAFW pumps inoperable, the licensee will be required to return at least one pump to operable status within 24 hours (Action statement 3.4.2.1.b). The STS-W specifies that, with one AFW pump inoperable, it be repaired within 72 hours (3 days) in lieu of the proposed 7 days and the initiation of shutdown to be immediate for two inoperable AFW pumps in lieu of a 24 hour delay before initiation of the shutdown process as proposed by the licensee. However, the staff finds both these proposed Technical Specifications, Action Statements 3.4.2.1.a and 3.4.2.1.b to be acceptable because the Ginna plant has an additional two pumps, the SAFW pumps, available for providing feedwater in the event of failure of the entire MAFW system.

Action Statement 3.4.2.2.c is found to be acceptable because it is safer to maintain an operational mode while repairing at least one AFW pump before initiating shutdown rather than initiating shutdown with no operable AFW pump. This is in accordance with the dictates of the STS-W for plants with 3 AFW pumps and with those 3 inoperable.

Nothing in this specification deals directly with inoperability of all three MAFW pumps. In such case, i.e., inoperability of all three MAFW pumps, it would be necessary to invoke Technical Specification 3.0.1 which requires initiation of cold shutdown within 1 hour of a condition resulting in inoperability of all the MAFW pumps. The staff finds this to be acceptable.

2.3.2 Technical Specification 3.4.2.2 - Turbine-Driven Main Auxiliary Feedwater System

Proposed Technical Specification 3.4.2.2 is shown immediately below:

3.4.2.2 TURBINE-DRIVEN MAIN AUXILIARY FEEDWATER SYSTEM

Specification

With the RCS temperature at or above 350°F, the turbine-driven main auxiliary feedwater pump associated flow paths from the condensate storage tanks to the steam generators, and flow paths of steam from each steam generator to the pump turbine, must be operable. The turbine-driven auxiliary feedwater pump must be shown to be operable prior to exceeding 5% power.

Action

a. With the turbine-driven auxiliary feedwater pump and/or both associated flow paths inoperable, restore the pump (and at least one flow path) to operable status within 72 hours or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the next 6 hours.

b. With one associated flow path of the turbine-driven main auxiliary feedwater pump inoperable, restore to operable status within 7 days or be in at least hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the next 6 hours.

The Specification section has been changed to require operability of the turbine-driven main AFW pump when the RCS temperature reaches or exceeds 350°F in lieu of 200°F. However, the portion of the Specification requiring that the turbine-driven pump be shown to be operable before exceeding 5% power level is unchanged from the present specification. The staff finds the change to 350°F acceptable as discussed above, in section 2.3.1.

Action Statement 3.4.2.2.a requires that the plant proceed to hot shutdown within 72 hours in the event the turbine-driven main AFW pump becomes inoperable because of either pump or path failure. The staff finds this in accordance with applicable guidelines and, therefore, acceptable.

Action Statement 3.4.2.2.b requires that any inoperable flow path be made operable within 7 days and that, if not repaired by then, the plant should initiate shutdown thereafter. The staff finds this to be in accordance with applicable guidelines and, therefore, to be acceptable.

2.4 Technical Specification 3.4.2.3 - Standby Auxiliary Feedwater System

Proposed Technical Specification 3.4.2.3 is shown below:

3.4.2.3 STANDBY AUXILIARY FEEDWATER SYSTEM

Specification

With the RCS temperature at or above 350°F, two standby auxiliary feedwater pumps each with an associated flow path from the service water system to its respective steam generator, shall be operable.

Action

a. With one standby auxiliary feedwater pump inoperable restore the pump to operable status within 14 days or be in hot shutdown within the next 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

b. With both standby auxiliary feedwater pumps inoperable restore at least one standby auxiliary feedwater pump to operable status within 7 days or be in at least hot shutdown within 6 hours and at an RCS temperature less than 350°F in the following 6 hours.

The Specification section has been changed to require operability of the two SAFW pumps when the RCS temperature is at or above 350°F in lieu of the present Specification section requirement for operability when the RCS temperature is in excess of 200°F. The staff finds this acceptable as discussed above in section 2.3.1.

The licensee proposed a time limit for operation of 14 days with one inoperable standby auxiliary feedwater pump and 7 days with both SAFW pumps inoperable. The staff finds these proposed time limits acceptable based on the fact that the SAFW system has been designed to cope with a highly unlikely event, a steam line break in the area of the main AFW pumps, of sufficient severity so as to render the main AFW system inoperable. The main AFW system has been designed to mitigate all other events requiring auxiliary feedwater.

2.5 Technical Specification 3.4.3 - Sources of Auxiliary Feedwater Proposed Technical Specification 3.4.3 is shown immediately below:

3.4.3 SOURCES OF AUXILIARY FEEDWATER

Specification

a. With the RCS temperature at or above 350°F, the following sources of auxiliary feedwater shall be operable:

1) One or more condensate storage tanks with a minimum of 22,500 gallons of water, and

2) Service water as the primary supply to the standby auxiliary feedwater pumps.

Action

a. With the condensate storage tanks inoperable, within 4 hours either:

1) restore the condensate storage tanks to operable status, or be in at least hot shutdown within the following 6 hours and at an RCS temperature less than 350°F within the following 6 hours, OR

2) demonstrate the operability of the service water system as a water supply to the motor-driven and turbine-driven main auxiliary feedwater pumps and restore the condensate storage tanks to operable status within 7 days, or be in at least hot shutdown within the following 6 hours and at an RCS temperature less than 350°F within the following 6 hours.

b. With the service water system to one or both standby auxiliary feedwater pump(s) inoperable, declare the standby auxiliary feedwater pump(s) inoperable and comply with specification 3.4.2.3.

The Specification section defines the role of each primary water supply, i.e., condensate storage tanks for MAFW system, service water for the SAFW system. Therefore, the staff finds this acceptable.

The staff finds proposed Action statement 3.4.3.a to be acceptable since the only change is one of format from the present specification. Proposed Action statement 3.4.3.b merely restates part of the understood operability

requirement for the SAFW pumps, i.e., inoperability of the water supply for an SAFW pump renders that SAFW pump inoperable. Thus, the staff finds Action statement 3.4.3.b to be acceptable.

2.6 Basis (for Turbine Cycle T.S. 3.4)

The basis section for T.S. 3.4 has been modified to reflect the changes discussed above. The staff finds this to be acceptable.

2.7 Technical Specification 4.8 - Auxiliary Feedwater Systems

Those Technical Specifications which the licensee proposes to change are shown immediately below with the exception of the Objective section which is not going to be changed.

4.8 AUXILIARY FEEDWATER SYSTEMS

Applicability

Applies to periodic testing requirements of the turbine-driven, motor-driven main auxiliary feedwater pumps, and of the standby auxiliary feedwater pumps.

Objective

To verify the operability of the main auxiliary feedwater system and the standby auxiliary feedwater system and their ability to respond properly when required.

Specification

4.8.1 Except when below 350°F each motor-driven main auxiliary feedwater pump, unless it is declared inoperable without testing, will be started at intervals not to exceed one month and a flowrate of 200 gpm established.

4.8.2 Except when below 350°F the steam turbine-driven main auxiliary feedwater pump, unless it is declared inoperable without testing, will be started at intervals not to exceed one month and a flowrate of 400 gpm established. If one discharge flow path is inoperable in accordance with Specification 3.4.2.2, a flow of 200 gpm must be established. Once the inoperable discharge flow path is returned to operable status, a flow of 400 gpm must be established within 72 hours thereafter.

4.8.3 Except when below 350°F the main auxiliary feedwater pumps suction, discharge, and crossover motor operated valves shall be exercised at intervals not to exceed one month.

4.8.4 Except when below 350°F each standby auxiliary feedwater pump, unless it is declared inoperable without testing, will be started at intervals not to exceed one month and a flowrate of 200 gpm established.

4.8.5 Except when below 350°F the suction, discharge, and crossover motor operated valves for the standby auxiliary feedwater pumps shall be exercised at intervals not to exceed one month.

The change in the Applicability section of this specification is one only of punctuation and, therefore, this change is found to be acceptable.

The only change in Specifications 4.8.1, 4.8.3, 4.8.4 and 4.8.5 is to require testing of the motor-driven MAFW pumps (4.8.1), of suction discharge and crossover motor operated valves for the MAFW pumps (4.8.3), of the standby auxiliary feedwater pumps (4.8.4), and of the suction, discharge, and crossover motor operated valves for the SAFW pumps, (4.8.5) only when the plant is at a temperature of 350°F or above.

The present Technical Specifications do not require that these tests be conducted once the plant is at a temperature of less than 200°F, in a cold shutdown or refueling mode. The change, from less than 200°F to less than 350°F, is consistent with the STS-W which requires that the AFW system be operable when the average coolant temperature is 350°F or greater. Thus, the licensee, according to proposed Technical Specifications 4.8.1, 4.8.3, 4.8.4, and 4.8.5, will have to test the motor-driven pumps, and the suction, discharge and crossover valves in both the MAFW and SAFW systems on a monthly basis when the average coolant temperature is 350°F or greater. In addition, specific flow requirements (200 gpm) will be required for each pump to assure the ability of the MAFW and SAFW systems to mitigate transients and accidents. The staff finds the proposed Technical Specifications also to be in accordance with operability requirements for the systems which contain these pumps and valves, i.e., with the RCS temperature at or above 350°F. In view of the foregoing, the staff finds proposed Technical Specifications 4.8.1, 4.8.3, 4.8.4 and 4.8.5 to be acceptable.

Proposed Technical Specification 4.8.2 has also been changed to include a plant temperature of 350°F, below which no monthly surveillance testing is required for the turbine-driven MAFW pump. In addition, the licensee has added the last two sentences which require surveillance testing in the event one discharge flow path is inoperable, at a reduced rate - 200 gpm, and to establish the full flow rate, 400 gpm, within 72 hours of having the inoperable discharge path returned to operable status. As noted above, in the Specification section of 3.4.2.2, the turbine-driven MAFW pump must be shown to be operable before exceeding a 5% power level. The staff finds proposed Technical Specification 4.8.2 to be acceptable, accordingly.

The licensee proposes slight changes in the "Basis" section to account for these changes with the exception of one sentence which the licensee has deleted in the section related to testing of both MAFW and and SAFW pumps. The deleted sentence is: "The flow rates will be measured at a stimulated steam generator pressure of 1100 psia." The licensee intends to correlate pump flow test results to conditions at the steam generator at normal operating conditions so as to assure necessary AFW system flow rates to mitigate transients and accidents for which the AFW systems were designed. The staff finds the changed bases acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, and changes to the surveillance requirements. The staff has determined that the amendment involves 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 this amendment involves no significant hazards considerations and there has been no public comment on such finding. Accordingly, this amendment meets 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 this amendment.

4.0 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: August 24, 1990