

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )

Rochester Gas and Electric Corporation )  
(R.E. Ginna Nuclear Power Plant) )

Docket No. 50-244

**APPLICATION FOR AMENDMENT  
TO OPERATING LICENSE**


Pursuant to Section 50.90 of the regulations of the U.S. Nuclear Regulatory Commission (NRC), Rochester Gas and Electric Corporation (RG&E), holder of Facility Operating License No. DPR-18, hereby requests that the Technical Specifications set forth in Appendix A to that license be amended. This request for change is to implement WCAP-10271, its associated supplements, and other related changes with respect to the Reactor Trip System and Engineered Safety Features Actuation System.

A description of the amendment request, necessary background information, justification of the requested change, and no significant hazards and environmental considerations are provided in Attachment I. This evaluation demonstrates that the proposed changes do not involve a significant change in the types or a significant increase in the amounts of effluents or any change in the authorized power level of the facility. The proposed changes also do not involve a significant hazards consideration.

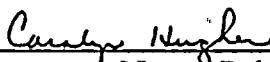
A marked up copy of the current Ginna Station Technical Specifications which show the requested changes is set forth in Attachment II. The necessary changes to the marked up Ginna Station Technical Specifications previously submitted in support of the conversion to Improved Standard Technical Specifications are provided in Attachment III. The evaluation of instrument drift required to implement WCAP-10271 is provided in Attachment IV while Attachment V lists all technical differences which would exist between the proposed technical specification changes and WCAP-10271.

WHEREFORE, Applicant respectfully requests that Facility Operating License No. DPR-18, and Attachment A to that license, be amended in the form attached hereto as Attachment II.

Rochester Gas and Electric Corporation

By   
Robert C. Mecredy  
Vice President  
Nuclear Operations

Subscribed and sworn to before me  
on this 31st day of August 1995.

  
Notary Public

CAROLYN HUGHES  
Notary Public, State of New York  
No. 01HU5044560  
Qualified in Monroe County  
Commission Expires May 30, 1998

## Attachment I

### R.E. Ginna Nuclear Power Plant

#### License Amendment Request

#### Implementation of WCAP-10271 With Respect to the Reactor Trip System (RTS) and Engineered Safety Features Actuation System (ESFAS)

This attachment provides a description of the license amendment request (LAR) and the necessary justifications to support changes in the surveillance frequencies and Required Actions for the RTS and ESFAS as documented in WCAP-10271 (References 1, 2, and 3). This attachment is divided into 5 sections as follows. Section A summarizes all changes to the current Ginna Station Technical Specifications required to implement WCAP-10271 and the two associated supplements and other related changes. Section B provides the justifications associated with these proposed changes. A no significant hazards consideration evaluation and environmental consideration of the requested changes to the Ginna Station Technical Specifications are provided in Sections C and D, respectively. Section E lists all references used this attachment.

#### A. DESCRIPTION OF TECHNICAL SPECIFICATION CHANGES

This attachment provides the documentation required to support a revision to the current Ginna Station Technical Specifications (CTS) to implement WCAP-10271 and other related changes to the ESFAS and RTS instrumentation. WCAP-10271 is actually comprised of three documents (References 1, 2, and 3). The technical specification changes supported by each of these documents are summarized below:

- a. WCAP-10271-P-A (Reference 1) - This WCAP presents the fault tree methodology for estimating trip function unavailability that was used in the Technical Specification Optimization Program (TOPS) along with example calculations for specific trip functions. Following NRC acceptance of the methodology, specific applications to generic reactor trip functions in the Westinghouse designed RTS were initiated as discussed below.

- b. WCAP-10271-P-A, Supplement 1 (Reference 2) - This WCAP applied the methodology of WCAP-10271 (Reference 1) to generic RTS functions in Westinghouse plants. It also expanded the acceptance criteria from trip system reliability as proposed in WCAP-10271, to risk as expressed by core damage frequency as suggested by the NRC during the review process. The scope of relaxations requested in Supplement 1 is with respect to the analog channel Allowed Outage Times (AOTs) and Surveillance Test Intervals (STIs). The NRC approved the proposed changes in this WCAP via Reference 4 provided that specific conditions were met by implementing licensees. Reference 5 as included within this supplement provides information related to these conditions and identifies what licensees are expected to provide to the NRC as part of their LAR. This reference forms the basis for the justification of RTS related changes discussed in Section B of this attachment.
- c. WCAP-10271-P-A, Supplement 2, Revision 1 (Reference 3) - This WCAP applied the methodology of WCAP-10271 to generic ESFAS functions in Westinghouse plants. Supplement 2 also addressed the trip logic and actuation relays. In order that the actuation logic for the RTS and ESFAS functions could have the same AOTs, Supplement 2 also addressed RTS logic AOTs. The NRC approved this document by References 6 and 7 provided that specific conditions were met by implementing licensees.

The necessary changes to the CTS to implement WCAP-10271, its supplements, and other related instrumentation changes are summarized below. Markups of the CTS are provided in Attachment II. The justification for the changes listed below and documented in Attachment II are provided in Section B of this attachment. The necessary changes to the CTS markups included in the LAR to convert to Improved Standard Technical Specifications (Reference 8) are provided in Attachment III. Any technical differences between the proposed new technical specifications and WCAP-10271 are discussed in Attachment V.

1. Revise the Completion Time to place an inoperable channel in the tripped condition from 1 hour to 6 hours for the following RTS functions:

- a. Neutron Flux Power Range - Low Setting
- b. Neutron Flux Power Range - High Setting
- c. Overtemperature  $\Delta T$
- d. Overpower  $\Delta T$
- e. Low Pressurizer Pressure
- f. High Pressurizer Pressure
- g. Pressurizer High Water Level
- h. Low Flow - Single Loop
- i. Low Flow - Two Loops
- j. Low Low Steam Generator Water Level
- k. Undervoltage - 4 KV Bus
- l. Underfrequency - 4 KV Bus
- m. Turbine Trip

This change affects CTS Table 3.5-1, Action Statement 2 which will now apply to all of the above RTS functions. CTS Table 3.5-1, Action Statements 5 and 6 can now be removed since they are no longer used.

2. Increase the allowed time an inoperable channel may be bypassed to perform surveillances of the remaining operable channels from 2 hours to 4 hours for the following RTS functions:

- a. Neutron Flux Power Range - Low Setting
- b. Neutron Flux Power Range - High Setting
- c. Overtemperature  $\Delta T$
- d. Overpower  $\Delta T$
- e. Low Pressurizer Pressure

This change affects CTS Table 3.5-1, Action Statement 2 which currently applies to all of the above RTS functions.

3. Allow an inoperable channel to be bypassed for up to 4 hours to perform surveillances of the remaining operable channels when no bypass is currently allowed for the following RTS functions:

- a. High Pressurizer Pressure
- b. Pressurizer High Water Level
- c. Low Flow - Single Loop
- d. Low Flow - Two Loops
- e. Low Low Steam Generator Water Level
- f. Undervoltage - 4 KV Bus
- g. Underfrequency - 4 KV Bus
- h. Turbine Trip

This affects CTS Table 3.5-1, Action Statements 5 and 6 which will be removed and replaced with Action Statement 2 as revised per Change #2 above.

4. Add requirements and associated Action Statements for inoperable channels for the following RTS functions contained in WCAP-10271 which are not in the CTS:

- a. Safety Injection Input from ESFAS
- b. Reactor Coolant Pump (RCP) Breaker Position
- c. Turbine Trip - Stop Valve Closure

5. Separate the CTS Table 3.5-1 Functional Unit #20 (Automatic Trip Logic Including Reactor Trip Breakers) into two separate functions (i.e., Automatic Trip Logic and Reactor Trip Breakers). In addition, revise Action Statement #14 for these functions as follows:

- a. Allow 1 hour to restore an inoperable RTB before initiating a plant shutdown in MODES 1 and 2.
- b. Allow 6 hours to restore one inoperable trip logic train before initiating a plant shutdown in MODES 1 and 2.
- c. Allow 48 hours to restore an inoperable RTB prior to initiating action to open the RTBs in MODES 3, 4, and 5.
- d. Allow 48 hours to restore one inoperable trip logic train prior to initiating action to open the RTBs in MODES 3, 4, and 5.

6. Revise the testing of the following RTS functions from monthly (or biweekly for the Neutron Power Range - High trip function) to quarterly:

- a. Neutron Flux Power Range - High Setting
- b. Overtemperature  $\Delta T$
- c. Overpower  $\Delta T$
- d. Low Pressurizer Pressure
- e. High Pressurizer Pressure
- f. Pressurizer High Water Level
- g. Low Flow - Single Loop
- h. Low Flow - Two Loops
- i. Low Low Steam Generator Water Level
- j. Undervoltage - 4 KV Bus
- k. Underfrequency - 4 KV Bus

This affects CTS Table 4.1-1, Functional Units #1, 4, 5, 6, 7, 8, and 11.

7. Change the Turbine Trip function surveillance (CTS Table 4.1-1, Functional Unit #23) from a monthly test to once prior to startup if it has not been performed within the last 31 days. In addition, the test requirement was revised to clarify that setpoint verification is not required.

8. The following RTS functions which are tested prior to reactor startup were revised to clarify that this test is only required if it has not been performed within the last 31 days:

- a. Nuclear Flux Power Range - Low Setting
- b. Nuclear Flux Intermediate Range
- c. Nuclear Flux Source Range

This affects CTS Table 4.1-1, Functional Units #1, 2, and 3.

9. Surveillances were added for the following RTS functions where surveillances previously did not exist in the CTS consistent with WCAP-10271:

- a. SI Input from ESFAS
- b. RCP Breaker Position Trip
- c. Turbine Trip - Stop Valve Closure
- d. Overtemperature  $\Delta T$  (Note - the CTS do have references to this function in Table 4.1-1 but no specific testing requirements)
- e. Overpower  $\Delta T$  (Note - the CTS do have references to this function in Table 4.1-1 but no specific testing requirements)

10. Change Turbine First Stage Pressure surveillances (CTS 4.1-1, Functional Unit #27) to eliminate the shift channel check and increase the channel testing frequency from monthly to a refueling basis.
11. Add the following ESFAS Functions to CTS Table 3.5-2 with the associated Required Actions and Completion Times as documented in Reference 3.
  - a. Safety Injection - Automatic Actuation Logic and Actuation Relays
  - b. Containment Spray - Automatic Actuation Logic and Actuation Relays
  - c. Auxiliary Feedwater - Automatic Actuation Logic and Actuation Relays
  - d. Containment Isolation - Automatic Actuation Logic and Actuation Relays
  - e. Containment Ventilation Isolation - Automatic Actuation Logic and Actuation Relays
  - f. Steam Line Isolation - Automatic Actuation Logic and Actuation Relays
  - g. Feedwater Line Isolation - Automatic Actuation Logic and Actuation Relays

This affects CTS Table 3.5-2, Functional Units #1, 2, 3, 4, 5, and 6.

12. Revise the Completion Time from 1 hour (2 hours for the Containment Spray - High High Containment Pressure function) to 6 hours for placing an inoperable channel in trip for the following ESFAS functions:
  - a. Safety Injection - High Containment Pressure
  - b. Safety Injection - Steam Line Pressure Low
  - c. Safety Injection - Pressurizer Pressure Low
  - d. Containment Spray - High High Containment Pressure
  - e. Auxiliary Feedwater - Steam Generator Level - Low Low
  - f. Auxiliary Feedwater - Loss of 4kV Voltage
  - g. Steam Line Isolation - High High Steam Flow with Safety Injection (SI)
  - h. Steam Line Isolation - High Steam Flow with Low  $T_{avg}$  and SI
  - i. Steam Line Isolation - Containment Pressure
  - j. Feedwater Line Isolation - Steam Generator Level - High

This change affects CTS Table 3.5-2, Action Statement 9 which will now apply to all of the above ESFAS functions with the exception of Safety Injection - High Containment Pressure and Containment Spray - High High Containment Pressure which use Action Statement 11. CTS Table 3.5-2, Action Statement 12 will be removed since it is no longer used.



13. Allow an inoperable ESFAS channel to be bypassed for up to 4 hours to perform surveillance testing of the remaining channels when no bypass capability was previously allowed:

- a. Safety Injection - High Containment Pressure
- b. Safety Injection - Steam Line Pressure Low
- c. Safety Injection - Pressurizer Pressure Low
- d. Containment Spray - High High Containment Pressure
- e. Auxiliary Feedwater - Steam Generator Level - Low Low
- f. Auxiliary Feedwater - Loss of 4kV Voltage
- g. Auxiliary Feedwater - Trip of Both MFW Pumps
- h. Steam Line Isolation - High High Steam Flow with Safety Injection (SI)
- i. Steam Line Isolation - High Steam Flow with Low  $T_{avg}$  and SI
- j. Steam Line Isolation - Containment Pressure
- k. Feedwater Line Isolation - Steam Generator Level - High

This change affects CTS Table 3.5-2, Action Statement 9 which will now apply to all of the above ESFAS functions with the exception of Safety Injection - High Containment Pressure and Containment Spray - High High Containment Pressure which use Action Statement 11.

14. Revise the Applicability for the Safety Injection - High Containment Pressure function from "above 350°F" to "above Cold Shutdown." As such, Action Statement 11 now applies to this function with an inoperable channel.
15. Revise the Completion Time from 1 hour to 6 hours for placing an inoperable channel in trip for the Loss of Voltage - 480 V Safeguards Bus and Degraded Voltage - 480 V Safeguards Bus functions listed in CTS Table 3.5-1. Also, allow the inoperable channel to be bypassed for surveillance testing of the remaining channels for up to 2 hours. The allowance to energize the affected bus with a diesel generator if the existing Completion Times are not met was also deleted.
16. Revise the testing of the following ESFAS functions from monthly to quarterly:
- a. Safety Injection - High Containment Pressure
  - b. Safety Injection - Steam Line Pressure Low
  - c. Safety Injection - Pressurizer Pressure Low
  - d. Containment Spray - High High Containment Pressure
  - e. Auxiliary Feedwater - Steam Generator Level - Low Low
  - f. Steam Line Isolation - High High Steam Flow with Safety Injection (SI)
  - g. Steam Line Isolation - High Steam Flow with Low  $T_{avg}$  and SI
  - h. Steam Line Isolation - High Containment Pressure
  - i. Feedwater Line Isolation - High Steam Generator Level



This affects CTS Table 4.1-1, Functional Units #7, 11, 17, 25, 26, 32, and 33.

17. Surveillances were added for the following ESFAS functions where surveillances previously did not exist in the CTS consistent with WCAP-10271:
- a. Safety Injection - Manual Initiation
  - b. Containment Spray - Manual Initiation
  - c. Auxiliary Feedwater - Manual Initiation
  - d. Containment Isolation - Manual Initiation
  - e. Containment Ventilation Isolation - Manual Initiation
  - f. Steam Line Isolation - Manual Initiation
  - g. Feedwater Line Isolation - Manual Initiation
  - h. Auxiliary Feedwater - Loss of 4 kV Voltage

This affects CTS Table 4.1-2, Functional Unit #9.

18. Revise the Completion Time for restoring an inoperable Auxiliary Feedwater - Trip of Both MFW Pumps channel from 1 hour to 48 hours.

## B. JUSTIFICATION OF CHANGES

This section provides the justification for all changes described in Section A above. These justifications are mainly based on the conditions which the NRC required licensees to address in order to implement WCAP-10271. These conditions are documented in the NRC Safety Evaluation Reports and summarized in the NRC approved versions of WCAP-10271 including its supplements.

1. Changes #1 through #10 as discussed in Section A are consistent with the technical specifications provided in WCAP-10271, Supplement 1. These ten changes include both those changes which are justified within the WCAP (and therefore approved by the NRC) and those changes to the CTS which provide consistency with the standard technical specifications provided in the WCAP. To implement the changes specifically justified by the WCAP (Changes #1, 2, 3, and 6), the NRC requires licensees to address five issues as documented within the letter from the Westinghouse Owner's Group to the NRC dated September 3, 1985 (Reference 5). These conditions, and their resolution, are provided below. The remaining changes which provide consistency with standard technical specifications (i.e., Changes #4, 5, 7, 8, 9, and 10) are discussed separately.



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- a. Condition 1 - The RTS functions which are being changed from monthly to quarterly test frequencies must be tested on a STAGGERED TEST basis. For example, with a four channel RTS function, one channel must be tested every three weeks such that all channels are tested each quarter. One channel of a three channel RTS function must be tested every month while one channel of a two channel RTS function must be tested every 6 weeks.

Response - This condition was withdrawn by the NRC by Reference 6 and is no longer applicable.

- b. Condition 2 - The licensee must have procedures in place to require a common mode evaluation of failures in the RTS channels which are to be tested on a quarterly basis. That is, since channels may be tested on a staggered basis, if the channel being tested fails due to a potential common mode failure, the remaining channels should be tested or otherwise confirmed with respect to their continued operability.

Response - These procedures will be developed prior to the implementation of the improved technical specifications for Ginna Station currently scheduled for February 1996. These procedures will follow the general guidance provided in Reference 5 as to when this common cause failure evaluation is required (e.g., instrument drift issues do not require this assessment).

- c. Condition 3 - Routine testing of the RTS analog channels in the bypass condition by use of temporary jumpers or by lifting leads is unacceptable due to the potential for human errors. Therefore, plants without installed bypass capability cannot use this option

Response - Ginna Station currently does not have installed bypass capability such that routinely bypassing channels in order to perform surveillance testing of the remaining channels is not allowed. As such, RG&E has selected the Required Actions which only allow the inoperable channel to be bypassed for testing of the remaining channels. The Required Actions which allow bypassing a channel provided that the inoperable channel was placed in the tripped condition was not selected. Therefore, routine use of bypass for testing purposes is not allowed in the proposed technical specifications.

- d. Condition 4 - For channels which provide input to both RTS and ESFAS functions, the licensee should either refrain from revising the Action Statements for the affected RTS functions until the review of the ESFAS functions is completed by the NRC or place cautionary notes in the RTS tables which state that the more restrictive ESFAS Action Statements are also entered for this condition.

Response - The NRC review of the associated ESFAS functions has been completed (Reference 6). Consequently, this condition no longer applies.

- e. Condition 5 - The licensee must confirm that the instrument setpoint methodology includes sufficient adjustments to account for the increased interval between tests.

Response - The "as found" and "as left" data for the affected RTS instrumentation has been reviewed for a 12 month interval as suggested in Reference 5. This information is contained in Attachment III which concludes that an increase in surveillance interval from monthly (or biweekly) to quarterly is acceptable.

2. Changes #4 and #9 of Section A add new requirements and surveillances for RTS functions which are not specified in the CTS. The SI Input from ESFAS and RCP Breaker Position trip functions were not specifically modeled in WCAP-10271, Supplement 1 since no changes were proposed for these functions. However, the proposed Mode of Applicability, Required Actions for inoperable channels, and Surveillance Requirements are all consistent with standard technical specifications. The new requirements for Turbine Trip - Stop Valve Closure, Overtemperature  $\Delta T$ , and Overpower  $\Delta T$  were evaluated in WCAP-10271 to support revised Required Actions and STIs. Since the Ginna Station RTS instrumentation design is consistent with the assumptions of WCAP-10271, the revised frequencies are also applicable to Ginna Station. Therefore, these are more restrictive changes with respect to the CTS requirements.

3. Change #5 of Section A separates the CTS Table 3.5-1 function of Automatic Trip Logic Including Reactor Trip Breakers into two separate functions. This change provides clarification that the RTBs can be treated separately from the trip logic when performing surveillance testing and OPERABILITY determinations consistent with References 7 and 9. In addition, Change #5 revises CTS Table 3.5-1 Action Statement #14 to allow additional time to restore inoperable RTBs and automatic trip logic trains before requiring shutdown actions. The 1 hour allowance to restore an inoperable RTB before requiring a plant shutdown is based on the fact that this time period is the same as allowed in CTS 3.0.1. Allowing 48 hours to restore an inoperable RTB or logic train in MODES 3, 4, and 5 and 6 hours to restore an inoperable logic train in MODES 1 and 2 is based on standard technical specifications. These Completion Times are allowed since the redundant RTB and logic train is OPERABLE and there is only a low probability of an event requiring the RTS during this time period. Since the Ginna Station RTS instrumentation design is consistent with that considered in standard technical specifications, which form the basis for the RTB and logic train assumptions of WCAP-10271, these less restrictive changes are considered acceptable.
4. Change #7 of Section A revises the testing frequency of the Turbine Trip function from monthly to once prior to startup if it has not been preformed within the last 31 days (CTS Table 4.1-1, Functional Unit 23). The "Block Trip" note contained in the CTS table refers to performing a logic combination test. This logic combination test cannot be performed at power since it would cause a reactor trip; hence, the trip is blocked by not performing the logic combination test. Instead, this logic test is performed as part of the refueling outage basis calibration. Therefore, the only change being proposed is to replace the channel verification during the monthly tests to verification during startup. Performing this test during startup if it has not been performed within the last 31 days is consistent with the assumptions of WCAP-10271, Supplement 1. In addition, elimination of this test reduces the potential for a reactor trip due to the required plant configuration. Consequently, these less restrictive changes are considered acceptable.
5. Change #8 of Section A provides notes to the surveillances of three RTS functions which are only performed during startup that these surveillances are not required if they were performed within the last 31 days. CTS 1.12 defines prior to startup as "within the previous week." The 31 day limit was approved by the NRC during their review of WCAP-10271, Supplement 2 (Ref. 10) and prevents the unnecessary testing of trip functions which have recently been tested. Allowing 31 days to perform the test versus only 7 days provides station personnel with greater flexibility in scheduling startup tests such that attention can be focused on other activities with no reduction in safety. Therefore, these more restrictive changes are acceptable.



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6. Change #10 of Section A deletes the shift channel check of the Turbine First Stage Pressure function and increases the channel test surveillance interval from monthly to refueling. This function is only related to P-7 which is used to block certain reactor trips during startup and low power operations. The standard technical specifications included in WCAP-10271, Supplement 1 do not have a shift channel check requirement for any permissives since these are not directly related to the protecting the reactor core. In addition, the time frame in which P-7 is actually used to block certain reactor trips is expected to be very small such that the channel check is not required for safety reasons. The WCAP proposed to delete P-7 since it is derived from P-13 and P-10 interlocks and has no analog channels at a standard Westinghouse plant. Ginna Station does not have a P-13 such that this justification is not applicable. However, the WCAP specifically evaluated the increased STI for all permissives (including P-13 which the Turbine First Stage Pressure function acts as) and found the change in STI from monthly to quarterly to be acceptable. Since RG&E provided justification to meet the conditions for implementing WCAP-10271, Supplement 1 in item #1 above, this less restrictive change is considered acceptable.
7. Changes #11 through #18 as discussed in Section A are consistent with the technical specifications provided in WCAP-10271, Supplement 2, Revision 1. These eight changes include both those changes which are justified within this WCAP (and therefore approved by the NRC) and those changes to the CTS which provide consistency with the standard technical specifications provided in the WCAP. To implement the changes justified by the WCAP (Changes #12, 13, 15, and 16), the NRC Safety Evaluation Report (References 6 and 7) requires licensees to address two issues. These conditions, and their resolution, are provided below. The remaining changes which provide consistency with the standard technical specifications (Changes #11, 14, 17, and 18) are discussed separately.
- a. Condition 1 - The licensee must confirm the applicability of the generic analysis to the implementing plant.

Response - The design assumptions and modeling assumptions presented in Sections 2 and 3 of WCAP-10271, Supplement 2, Revision 1 were reviewed with respect to the Ginna Station ESFAS design and operational practices. The WCAP information is equivalent or more bounding with respect to Ginna Station except as follows:



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- i. The WCAP assumes that master and slave relays for actuation logic are tested monthly. The Ginna Station ESFAS design does not allow for this type of testing at power. Instead, each ESFAS function is tested (actuated) on a refueling basis. The WCAP acknowledges this testing limitation in Sections 2.2.4 and 3.1 with the study concluding that this type of testing is not required for plants without this capability (Section 4.1). Therefore, this is not considered a limiting issue for implementation of this WCAP.
- ii. The WCAP assumes that Containment Spray (CS) actuation is 2/4 logic. The CS actuation at Ginna Station is actually comprised of six channels which are organized into two sets of three channels each. Two of three channels in both sets must actuate in order to generate a CS signal (i.e., essentially a 4/6 logic). The multiple sets of 2/3 logic is similar to that modeled and evaluated in WCAP-10271, Supplement 1 for the Low Flow - Two Loops RTS function. The WCAP justified changes in the AOTS and STIs for this similar designed function. Also, any increase in CS unavailability due to the increased number of channel tests to be performed is expected to be minimal. Therefore, RG&E considers the WCAP assumed configuration of CS actuation to be acceptable with respect to the Ginna Station design.

iii. The WCAP does not specifically evaluate the Loss of Voltage - 480V Safeguards Bus and Degraded Voltage - 480V Safeguards Bus functions but proposes changes to be consistent with other ESFAS functions. The technical specifications which are changed in WCAP-10271, Supplement 2 have a 2/4 logic. The 480V loss of voltage and degraded voltage design at Ginna Station is similar to the CS actuation logic in that there are two sets of logic, both of which must actuate to generate an undervoltage signal. Each logic set is comprised of one channel of loss of voltage and one channel of degraded voltage function. At least one of these channels must trip in each logic set to generate the signal such that the undervoltage signal would actuate on either 2 loss of voltage channels, 2 degraded voltage channels, or 1 loss of voltage and 1 degraded voltage channel. A simple model of the Ginna Station undervoltage design versus the WCAP assumed configuration confirms that if the power source and actuating device failure rates were the same in both cases, then the reliability of the two designs is essentially equivalent with respect to undervoltage considerations since there is a common power source for all channels. In addition, this design is used for the RCP Undervoltage and Underfrequency RTS functions as modeled and evaluated in WCAP-10271, Supplement 1. The WCAP justified changes in AOTs and STIs for this similar designed functions. The WCAP justified changes in AOTs and STIs for this similar designed function. Also, since the number of channels required to be tested is less than that assumed in the WCAP, the system unavailability due to testing is conservative. Therefore, RG&E considers the WCAP assumed configuration of the loss of voltage and degraded voltage functions to be acceptable.

- b. Condition 2 - The licensee must confirm that any increase in instrument drift due to extended surveillance test intervals is properly accounted for in the setpoint calculation methodology.

Response - The "as found" and "as left" data for the affected ESFAS instrumentation has been reviewed for a 12 month interval as suggested in Reference 5. This information is contained in Attachment III which concludes that an increase in surveillance interval from monthly to quarterly is acceptable.



8. Changes #11 and #17 of Section A add new requirements and surveillances for ESFAS functions which are not specified in the CTS. These functions, their Mode of Applicability, required actions for inoperable channels, and surveillance requirements are all consistent with the technical specifications provided in WCAP-10271, Supplement 1 with the exception of Safety Injection Manual Initiation. The WCAP technical specifications require this function above 200°F while the CTS only require this function above 350°F. The Safety Injection actuation function is not used at Ginna Station below 350°F for any accident analysis except for Containment Isolation (note that the Safety Injection System is only required above 350°F in the CTS). However, a manual SI signal will not generate a Containment Isolation signal such that this manual function should only apply above 350°F. Therefore, these changes overall are considered a more restrictive change with respect to the CTS requirements.
9. Change #14 of Section A revises the Applicability for Safety Injection - Containment Pressure High function to apply above Cold Shutdown (i.e., 200°F). As discussed above in item #8, the Safety Injection function is not used below 350°F except with respect to Containment Isolation. Below 350°F, the only Safety Injection signal which is not blocked is the Containment Pressure High function since this is also used to generate a Containment Isolation Signal. Since CTS 3.6.1 requires containment integrity above Cold Shutdown, and CTS Table 3.5-2, Functional Unit #4.1 requires manual containment isolation actuation above Cold Shutdown, CTS Table 3.5-2, Functional Unit #1.b was revised. This is a more restrictive change since it increases the required Applicability for this function.
10. Change #12 of Section A revises the Required Actions for several ESFAS Functions. The Required Actions for inoperable Containment Spray - High High Containment Pressure as proposed in the new Ginna Station technical specifications are different from those contained in WCAP-10271, Supplement 2. This is due to design differences in the ESFAS logic as discussed in item #7 above. As a result of these design differences, the WCAP Required Action of placing the inoperable channel in bypass, and allowing this channel to be bypassed, was not added. The WCAP justified this action since the plant would be in a 2/3 logic; however, this would essentially place Ginna Station in 4/4 logic (i.e., if one channel in each logic set were inoperable, the WCAP would allow both channels to be placed in bypass such that the remaining four channels must all trip to generate a signal). As such, RG&E proposes that the inoperable channel in each set be restored within 6 hours with bypass capability allowed for up to 4 hours similar to other ESFAS functions. This is also consistent with new Required Actions for the Low Flow - Two Loops RTS function which is of similar design. As such, this less restrictive change is considered acceptable.

11. Change #12 of Section A revises the Completion Time for placing an inoperable Steam Line Isolation - High Containment Pressure channel in trip from 1 hour to 6 hours. However, the standard technical specifications included in WCAP-10271, Supplement 2, do not require placing the channel in trip. Instead, the inoperable channel may be placed in bypass provided that the minimum number of required channels is OPERABLE. The standard technical specifications identify a 2/4 logic for this function while Ginna Station utilizes 2/3 logic. The WCAP did consider both 2/4 and 2/3 logic such that the WCAP is considered bounding with respect to the Ginna Station design. However, RG&E considers it prudent to place the inoperable channel in trip and rely on 1/2 logic versus bypassing the affected channel and relying on 2/2 logic. The Completion Time of 6 hours to place the channel in trip is consistent with other ESFAS functions. Therefore, RG&E considers this less restrictive change acceptable.
12. Change #18 of Section A revises the Completion Time for placing an inoperable channel of the Auxiliary Feedwater - Loss of 4kV Voltage function in trip from 1 hour to 48 hours. This Auxiliary Feedwater actuation function is secondary to the Steam Generator Low Low and Safety Injection actuation signals and is not specifically credited in the accident analyses. As such, if this function were to fail, the Steam Generator Low Low actuation function would eventually start the turbine driven pump within the time limits assumed in the accident analysis. Also, this Completion Time is consistent with the initial technical specification assumptions used in WCAP-10271. Therefore, this less restrictive change is considered acceptable.

In addition to the justifications provided above, RG&E has evaluated the differences between the proposed technical specifications contained in Attachment II and the standard technical specifications included in WCAP-10271. This evaluation is presented in Attachment V. As shown in this attachment, the proposed technical specifications are equivalent to the standard technical specifications except as follows:

- a. In those cases where technical differences exist, the reason for the differences is due to less restrictive CTS requirements and not due to other changes being proposed. The only exception to this is with respect to the Containment Spray - High High Containment Pressure and Steam Line Isolation - High Containment Pressure functions which are discussed in items #10 and #11 above, respectively.
- b. In those cases where both the CTS and proposed new technical specifications are less restrictive, the issue is either addressed in the conversion to improved standard technical specifications (Ref. 8), discussed above, or due to inconsequential design differences (e.g., Ginna Station does not organize containment isolation into Phase A and Phase B functions).





## C. SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

The proposed changes to the Ginna Station Technical Specifications as identified in Section A and justified in Section B have been evaluated with respect to 10 CFR 50.92(c) and shown to not involve a significant hazards consideration as described below. This evaluation is organized into 3 sections related to: (1) changes specifically evaluated by WCAP-10271 and its associated supplements, (2) other less restrictive changes which are being proposed, and (3) more restrictive changes which are being proposed.

### C.1 Evaluation of WCAP-10271 Justified Changes

The following less restrictive changes specifically evaluated by WCAP-10271 and its associated supplements are being proposed:

- a. Increase the surveillance interval for RTS analog channel operational tests from monthly to quarterly.
- b. Increase the Completion Time to place an inoperable RTS analog channel in trip from 1 hour to 6 hours.
- c. Allow an inoperable RTS analog channel to be bypassed for up to 4 hours to perform surveillance testing of the remaining channels.
- d. Increase the surveillance interval for ESFAS analog channel operational tests from monthly to quarterly.
- e. Increase the Completion Time to place an inoperable ESFAS analog channel in trip from 1 hour to 6 hours.
- f. Allow an inoperable ESFAS analog channel to be bypassed for up to 4 hours to perform surveillance testing of the remaining channels (note - the 480V Bus Loss of Voltage and Degraded Voltage functions are only allowed to be bypassed for 2 hours).

These proposed changes do not involve a significant hazards consideration as discussed below:



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1. Operation of Ginna Station in accordance with the proposed changes does not involve a significant increase in the probability or consequences of an accident previously evaluated. Implementation of the proposed changes is expected to result in an acceptable increase in total RTS and ESFAS yearly unavailability. This increase, which is primarily due to less frequent surveillance, results in an increase of similar magnitude in the probability of an Anticipated Transient Without Scram (ATWS) and in the probability of core damage resulting from an ATWS. However, implementation of the proposed changes is expected to result in a significant reduction in the probability of core damage from inadvertent reactor trips. This is a result of a reduction in the number of inadvertent reactor trips occurring during the required testing of RTS and ESFAS instrumentation. The reduction in inadvertent core damage probability is almost equivalent to the increase in ATWS core damage probability such that only a minor, but acceptable, increase in total core damage probability results from the proposed changes. The proposed changes do not result in an increase in the severity or consequences of an accident previously evaluated. Implementation of the proposed changes affects the probability of failure of the RTS and ESFAS but does not alter the manner in which protection is afforded nor the manner in which limiting criteria are established.
2. Operation of Ginna Station in accordance with the proposed changes does not create the possibility of a new or different kind of accident from any previously evaluated. The proposed changes do not result in a change in the manner in which the RTS and ESFAS provide plant protection. No change is being made which alters the functioning of the RTS and ESFAS. Instead, the likelihood or probability of the RTS and ESFAS functioning properly is affected as described above. In addition, the proposed changes do not involve hardware changes. Since the proposed changes do not alter the functioning of the RTS or ESFAS, the possibility of a new or different kind of accident from any previously evaluated has not been created.
3. Operation of Ginna Station in accordance with the proposed change does not involve a significant reduction in a margin of safety. The proposed changes do not alter the manner in which limiting safety system setpoints or limiting conditions for operation are determined. The impact of reduced testing other than as discussed above is to allow a longer time interval over which instrument uncertainties (e.g., drift) may act. Experience at other Westinghouse plants with extended surveillance intervals has shown the initial uncertainty assumptions to be valid for reduced testing. Implementation of the proposed changes is expected to result in an overall improvement in safety by:
  - a. reducing inadvertent reactor trips due to less frequent testing;
  - b. creating the potential for improved equipment reliability due to longer repair times and consequential more effective repairs; and



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- c. creating the potential for more effective monitoring and control of plant operations by operating crews due to less frequent instrumentation testing distractions.

Based upon the above, it has been determined that the proposed less restrictive changes to the Ginna Station Technical Specifications do not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of a new or different kind of accident previously evaluated, and does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed changes meet the requirements of 10 CFR 50.92(c) and do not involve a significant hazards consideration.

## C.2 Evaluation of Other Less Restrictive Changes

The following less restrictive changes, which are consistent with WCAP-10271 and its associated supplements but not specifically part of the original instrumentation program, are being proposed:

- a. Separate the CTS requirement of "Automatic Trip Logic Including Reactor Trip Breakers" into two separate requirements with additional time allowed to restore inoperable trains before requiring a plant shutdown.
- b. Revise the testing frequency of the RTS Turbine Trip function from monthly to once prior to startup if it has not been performed within the last 31 days.
- c. Define "prior to startup" to be "within 31 days prior to startup" versus "within the previous week" for testing of the following RTS functions: Nuclear Flux Power Range - Low Setting, Nuclear Flux Intermediate Range, and Nuclear Flux Source Range.
- d. Revise the testing requirements of the Turbine First Stage Pressure to remove the shift channel check and increase the testing interval from monthly to refueling.
- e. Increase the Completion Time to place an inoperable Containment Spray - Containment Pressure High High and Steam Line Isolation - High Containment Pressure channel in trip from 1 hour to 6 hours and allow the inoperable channel to be bypassed for up to 4 hours for surveillance testing of the remaining channels.
- f. Increase the Completion Time to place an inoperable Auxiliary Feedwater - Trip of Both MFW Pumps channel in trip from 1 hour to 48 hours.

These proposed changes do not involve a significant hazards consideration as discussed below:



1. Operation of Ginna Station in accordance with the proposed changes does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed changes are all consistent with the plant design and operating practices assumed in the evaluations provided in WCAP-10271 and standard technical specifications. These changes, in combination with the changes discussed in Section C.1 above, result in only a minor increase in core damage probability due to the reduced testing requirements. The proposed changes also do not increase the severity or consequences of an accident previously evaluated. While implementation of the proposed changes affects the probability of failure of the RTS and ESFAS, it does not alter the manner in which protection is provided nor the manner in which limiting criteria are established. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.
2. Operation of Ginna Station in accordance with the proposed changes does not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) nor alter the function of the RTS and ESFAS. The changes only provide for additional time to restore inoperable equipment and increase the surveillance testing interval for certain instrumentation. Thus, these changes do not create the possibility of a new or different kind of accident from any previously evaluated.
3. Operation of Ginna Station in accordance with the proposed changes does not involve a significant reduction in a margin of safety. The proposed changes do not alter the manner in which safety limits, limiting safety system setpoints, or limiting conditions for operation are determined. Instead, the changes are expected to result in an overall improvement to safety by reducing inadvertent reactor trips and allow time to perform appropriate repairs to inoperable equipment. Therefore, these changes do not involve a significant reduction in a margin of safety.

Based upon the above, it has been determined that the proposed less restrictive changes to the Ginna Station Technical Specifications do not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of a new or different kind of accident previously evaluated, and does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed changes meet the requirements of 10 CFR 50.92(c) and do not involve a significant hazards consideration.

### C.3 Evaluation of More Restrictive Changes

The following more restrictive changes are being proposed:

- a. Add requirements and associated Action Statements with respect to the RTS functions of SI Input from ESFAS, RCP Breaker Position, and Turbine Trip - Stop Valve Closure.
- b. Add Surveillance Requirements with respect to the RTS functions of SI Input from ESFAS, RCP Breaker Position Trip, Turbine Trip - Stop Valve Closure, Overtemperature  $\Delta T$ , and Overpower  $\Delta T$ .
- c. Add requirements and associated Action Statements with respect to all ESFAS automatic actuation logic and actuation relays.
- d. Add Surveillance Requirements with respect to all ESFAS manual initiation functions and Auxiliary Feedwater - Loss of 4kV function.

These proposed changes do not involve a significant hazards consideration as discussed below:

1. Operation of Ginna Station in accordance with the proposed changes does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed changes provide more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed accident and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems and components are maintained consistent with the licensing basis. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.
2. Operation of Ginna Station in accordance with the proposed changes does not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or changes in the methods governing normal plant operation. The proposed changes do impose different requirements. However, these changes are consistent with assumptions made in the safety analysis and licensing basis. Thus, these changes do not create the possibility of a new or different kind of accident from any previously evaluated.



3. Operation of Ginna Station in accordance with the proposed changes does not involve a significant reduction in a margin of safety. The imposition of more restrictive requirements either has no impact or increases the margin of plant safety. As provided in the discussion of changes, each of these changes is by definition providing additional restrictions to enhance plant safety. The changes maintains requirements within safety analyses and licensing bases. Therefore, these changes do not involve a significant reduction in a margin of safety.

Based upon the above, it has been determined that the proposed more restrictive changes to the Ginna Station Technical Specifications do not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of a new or different kind of accident previously evaluated, and does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed changes meet the requirements of 10 CFR 50.92(c) and do not involve a significant hazards consideration.

#### D. ENVIRONMENTAL CONSIDERATION

RG&E has evaluated the proposed changes and determined that:

1. The changes do not involve a significant hazards consideration as documented in Section C above;
2. The changes do not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite since all specifications related to offsite releases are retained and not affected by the proposed changes; and
3. The changes do not involve a significant increase in individual or cumulative occupational radiation exposure since no new or different type of equipment are required to be installed as a result of this LAR, and the frequency of required testing which may result in radiation exposure is to be optimized consistent with NRC approved generic analyses.

Accordingly, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed changes is not required.

#### E. REFERENCES

1. WCAP-10271-P-A, *Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System*, May 1986.

2. WCAP-10271-P-A, Supplement 1, *Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System*, May 1986.
3. WCAP-10271-P-A, Supplement 2, Revision 1, *Evaluation of Surveillance Frequencies and Out of Service Times for the Engineered Safety Features Actuation System*, June 1990.
4. Letter from C.O. Thomas, NRC, to J.J. Sheppard, WOG, Subject: *Acceptance for Referencing of Licensing Topical Report WCAP-10271, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System,"* dated February 21, 1985.
5. Letter from L.D. Butterfield, WOG, to H.R. Denton, NRC, Subject: *Revision 1 to WOG Guidelines for Preparation of Submittals Requesting Revisions to RPS Technical Specifications*, dated September 3, 1985.
6. Letter from C.E. Rossi, NRC, to R.A. Newton, WOG, Subject: *Westinghouse Topical Reports WCAP-10271, Supplement 2 and WCAP-10271, Supplement 2, Revision 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Engineered Safety Features Actuation System,"* dated February 22, 1989.
7. Letter from C.E. Rossi, NRC, to G.T. Goering, WOG, Subject: *Westinghouse Topical Report WCAP-10271, Supplement 2, Revision 1 "Evaluation of Surveillance Frequencies and Out of Service Times for the Engineered Safety Features Actuation System,"* dated April 30, 1990.
8. Letter from R.C. Mecredy, RG&E, to A.R. Johnson, NRC, Subject: *Application for Amendment to Facility Operating License, Conversion to Improved Technical Specifications*, dated May 26, 1995.
9. NUREG-1431, *Improved Standard Technical Specifications for Westinghouse Reactors*.
10. Letter from H.R. Denton, NRC, to L.D. Butterfield, WOG, *WOG Guidelines for Preparation of Submittals Requesting Revisions to RPS Technical Specifications*, dated July 24, 1985.

## Attachment II

### Marked Up Copy of R.E. Ginna Nuclear Power Plant Technical Specifications

#### Included Pages:

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