September 22, 2004

Mrs. Mary G. Korsnick
Vice President R.E. Ginna Nuclear Power Plant
R.E. Ginna Nuclear Power Plant, LLC
1503 Lake Road
Ontario, NY 14519

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT - AMENDMENT RE: REVISION TO CORE SAFETY LIMITS AND SAFETY SYSTEM INSTRUMENTATION SETPOINTS (TAC NO. MB4789)

Dear Mrs. Korsnick:

The Commission has issued the enclosed Amendment No. 85 to Renewed Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment is in response to your application dated April 9, 2002, as supplemented on January 10, 2003, February 24, 2004, and August 27, 2004.

The amendment revises the Ginna Station Technical Specifications for the following sections: Core Safety Limits (Section 2.2), Reactor Trip System Instrumentation (Section 3.3.1), Engineered Safety Feature Actuation System Instrumentation (Section 3.3.2), Loss of Power Diesel Generator Start Instrumentation (Section 3.3.4), Containment Ventilation Isolation Instrumentation (Section 3.3.5), and the Core Operating Limits Report (Section 5.6.5). The changes were made to provide a clear and consistent identification of instrumentation setpoints and their operability basis.

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

Sincerely,

/RA/

Robert Clark, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosures: 1. Amendment No. 85 to Renewed License No. DPR-18
2. Safety Evaluation

cc w/encls: See next page

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Vice President R.E. Ginna Nuclear Power Plant
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2. Safety Evaluation

cc w/encls: See next page

TSs: ML
Package Number: ML041180309
Accession Number: ML041180293

OFFICE	PDI-1\PM	PDI-1\LA	SRXB-B\SC	EEIB-A\SC	EEIB-B\SC	IROB\SC
NAME	RClark	SLittle	JUhle	EMarinos	RJenkins	TBoyce
DATE	9/22/04	9/22/04	09/15/04	09/15/04	09/08/04	09/15/04
OFFICE	OGC	PDI-1\SC				
NAME	HMcGurren	RLaufer				
DATE	09/20/04	9/22/04				

Official Record Copy

cc:

Mr. Michael J. Wallace
President
R.E. Ginna Nuclear Power Plant, LLC
c/o Constellation Energy
750 East Pratt Street
Baltimore, MD 21202

Mr. John M. Heffley
Senior Vice President and
Chief Nuclear Officer
Constellation Generation Group
1997 Annapolis Exchange Parkway
Suite 500
Annapolis, MD 21401

Kenneth Kolaczyk, Sr. Resident Inspector
R.E. Ginna Nuclear Power Plant
U.S. Nuclear Regulatory Commission
1503 Lake Road
Ontario, NY 14519

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Peter R. Smith, President
New York State Energy, Research,
and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

James M. Petro, Jr., Esquire
Counsel
Constellation Energy
750 East Pratt Street, 5th Floor
Baltimore, MD 21202

Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Daniel F. Stenger
Ballard Spahr Andrews & Ingersoll, LLP
601 13th Street, N.W., Suite 1000 South
Washington, DC 20005

Ms. Thelma Wideman, Director
Wayne County Emergency Management
Office
Wayne County Emergency Operations
Center
7336 Route 31
Lyons, NY 14489

Ms. Mary Louise Meisenzahl
Administrator, Monroe County
Office of Emergency Preparedness
1190 Scottsville Road, Suite 200
Rochester, NY 14624

Mr. Paul Eddy
New York State Department of
Public Service
3 Empire State Plaza, 10th Floor
Albany, NY 12223

DATED: September 22, 2004

AMENDMENT NO. 85 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-18 GINNA NUCLEAR POWER PLANT

PUBLIC
PDI-1 R/F
RLaufer
OGC
GHill (2)
TBoyce
CSchulten
EMarinos
JUhle
RJenkins
PRebstock
SSaba
LLois
ACRS
GMatakas, RI
RClark
SLittle

cc: Plant Service list

R. E. GINNA NUCLEAR POWER PLANT, LLC

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 85
Renewed 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 former licensee) dated April 9, 2002, as supplemented on January 10, 2003, February 24, 2004, and August 27, 2004, 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;

   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 Renewed 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. 85, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 1 year.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 22, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 85

RENEWED FACILITY OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
2.0-1	2.0-1
3.3.1-1 to 3.3.1-16	3.3.1-1 to 3.3.1-16
3.3.2-1 to 3.3.2-10	3.3.2-1 to 3.3.2-10
3.3.4-1 to 3.3.4-2	3.3.4-1 to 3.3.4-2
3.3.5-1 to 3.3.5-3	3.3.5-1 to 3.3.5-5
5.6-1 to 5.6-5	5.6-1 to 5.6-5

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 85 TO RENEWED FACILITY OPERATING

LICENSE NO. DPR-18

R. E. GINNA NUCLEAR POWER PLANT, LLC

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

1.0 INTRODUCTION

By application dated April 9, 2002 (ADAMS ML021020362), as supplemented January 10, 2003 (ADAMS ML030230274), February 24, 2004 (ADAMS ML040620459), and August 27, 2004 (ADAMS ML042470114), Rochester Gas and Electric Corporation (RG&E, the former licensee) requested changes to the Technical Specifications (TSs) for the R. E. Ginna Nuclear Power Plant (Ginna). On June 10, 2004, the license for Ginna was transferred from RG&E to R.E. Ginna Nuclear Power Plant, LLC.

The supplements dated January 10, 2003, February 24, 2004, and August 27, 2004, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on May 28, 2002 (67 FR 36933).

The proposed changes would revise TS Section 3.3 to provide a clear and consistent identification of instrumentation setpoints and their operability basis. This amendment is based on Nuclear Regulatory Commission (NRC) approved travelers, Technical Specification Task Force (TSTF)-355 and TSTF-365. Specifically, setpoints for the following Limiting Conditions for Operation (LCOs) are being revised:

- 3.3.1 Reactor Trip System Instrumentation
- 3.3.2 Engineered Safety Feature Actuation System Instrumentation
- 3.3.4 Loss of Power Diesel Generator Start Instrumentation
- 3.3.5 Containment Ventilation Isolation Instrumentation

In addition to the setpoint changes, the following changes are being requested since they are related to TS Section 3.3:

> The Reactor Safety Limits Figure 2.1.1-1 is being relocated to the Core Operating Limits Reports (COLR) consistent with NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," and NRC-approved traveler, TSTF-339, Revision 2.

An additional surveillance is added to TS Table 3.3.1-1, Function 6, Overpower ΔT, to provide consistency with Ginna testing practices.

Constants associated with TS Table 3.3.1-1, Functions 5 and 6, Overtemperature ΔT (OT ΔT) and Overpower ΔT (OP ΔT), are being relocated to the COLR consistent with NURG-1431 and NRC-approved traveler TSTF-339, Revision 2, which also resulted in changes to TS Section 5.6.5.

Additional requirements are added to TS Table 3.3.2-1 and TS Table 3.3.5-1 to specify all related Containment Isolation and Containment Ventilation Isolation input signals.

2.0 REGULATORY EVALUATION

The licensee indicates that the proposed changes are in conformance with NUREG-1431, Rev. 2 and associated travelers TSTF-355, -365, and -339. However, these documents do not convey regulatory requirements and the licensee does not explicitly cite any specific regulatory requirements as applicable to the proposed changes. Staff evaluation of the proposed changes is based upon the following:

10 CFR Part 50.36 “Technical specifications”
10 CFR Part 50, Appendix A, General Design Criterion 10 “Reactor design”
10 CFR Part 50, Appendix A, General Design Criterion 17 “Electric power systems”
10 CFR Part 50, Appendix A, General Design Criterion 18 “Inspection and testing of electric power systems”
10 CFR Part 50, Appendix A, General Design Criterion 20 “Protection system functions”
Regulatory Guide 1.105, “Setpoints for Safety-Related Instrumentation,” Revision 3

10 CFR 50.36: Section (c)(1)(ii)(A) specifies that: “... Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded. ...” As such, 10 CFR 50.36 requires that limits for instrument channels that initiate protective functions must be included in the TSs.

GDC 10 requires, in part, that the reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

GDC 20 requires, in part, that protection systems be automatically initiated so as to ensure that fuel design limits are not exceeded. It also requires that protection systems sense accident conditions and initiate the operation of systems and components important to safety.

Regulatory Guide 1.105: Section C3 interprets 10 CFR 50.36 as requiring that the limiting safety system setting (LSSS) must be specified as a TS limit.

3.0 TECHNICAL EVALUATION

3.1 Background

The August 27, 2004, supplemental letter revised the original proposed TS changes in recognition of staff concerns over the use of the Allowable Value as defined by Method 3 of the Instrument Society of America (ISA) Standard 67.04, Part 2, issued in 1994. The staff concerns regarding this methodology were discussed in a meeting with the Nuclear Energy Institute (NEI) on October 8, 2003, as described in the NRC's meeting summary dated October 28, 2003 (ADAMS No. ML033030193). NEI provided its position on this issue in a letter dated December 5, 2003 (ADAMS No. ML033450410). The staff's response to NEI letter dated December 5, 2003 was issued June 17, 2004 (ADAMS No. ML040500688). The staff provided additional information concerning the generic concerns in public meetings on June 23, and July 26, 2004 (see ADAMS Nos. ML042030355 and ML042370830).

The TS changes proposed in the August 27, 2004, supplemental letter are based upon a performance-based methodology not affected by the generic concerns associated with ISA Method 3.

3.1.1 Description of Proposed Change

In the August 27, 2004, supplemental letter, the licensee proposed to modify TS function tables (3.3.1-1, 3.3.2-1, and 3.3.5-1) and Surveillance Requirements (SR) 3.3.4.2 to eliminate the current trip setpoints for each safety channel and replace them with Limiting Safety System Setting (LSSS). The licensee also proposed that the TS incorporate operability requirements for the Channel Operational Test (COT). The proposed operability requirements are:

> A channel is OPERABLE when both of the following conditions are met:
>
> 1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the COT Acceptance Criteria. The COT Acceptance Criteria is defined as:
>
> |as-found TSP - previous as-left TSP| ≤ COT uncertainty
>
>   The COT uncertainty shall not include calibration tolerance.
>
> 2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the Limiting Safety System Setting (LSSS). The LSSS and the established calibration tolerance band are defined in accordance with the Ginna Instrument Setpoint Methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

3.1.2 Definitions

To provide consistency and avoid misunderstanding, the technical terms used to evaluate the licensee's proposed changes to the TS are given below:

Glossary:

LSSS – Limiting Safety System Setting: The LSSS is the limiting value for the Nominal TSP and is equal to the Calculated TSP. The Nominal TSP and Calculated TSP are defined below.

SL – Safety Limit: A limit on an important process variable that is necessary to reasonably protect the integrity of physical barriers that guard against the uncontrolled release of radioactivity. SLs are typically associated with fuel temperature, reactor coolant system pressure, and containment pressure.

AL – Analytical Limit: A limit of a measured or calculated variable established by the safety or transient analysis for which the analysis assumes that some protective action is initiated to ensure that a safety limit is not exceeded.

TLU – Total Loop Uncertainty: The amount by which the measured (indicated) setpoint might deviate from the desired (ideal) value. The TLU accounts for all known instrument errors, including the effects of normal and accident conditions. The TLU is calculated to ensure that the 95/95 confidence level for the Calculated TSP is met.

Calculated TSP: A setpoint value that is more conservative than the AL by the amount equal to the TLU. This is the limiting value of the Nominal TSP and is calculated such that there is a 95% probability with a 95% confidence level that the instrument channel will trip prior to the process variable exceeding the AL. The Calculated TSP is determined in accordance with the Ginna setpoint methodology.

Nominal TSP: The target or desired value of the trip setpoint designated in the surveillance test procedures. The Nominal TSP is the setting about which the setting tolerance is defined.

COT – Channel Operational Test: Refers to the instrument channel TS quarterly surveillance test. This test is used to verify the operability of those components tested during the COT.

COT Uncertainty: The COT Uncertainty is the statistical combination of the reference accuracy, drift, and measurement and test equipment uncertainty. The COT Uncertainty does not include the setting tolerance.

As-Found TSP and As-Left TSP: The measured values of a TSP at the beginning and at the conclusion of the COT, respectively.

Setting Tolerance: The range of acceptable values within which the instrument technician is required to set the As-Left TSP. The application of the setting tolerance recognizes the fact that it is not reasonable to expect the technician to establish a setting exactly equal to a specified value. It is assumed that the measured value of the As-Left TSP will be normally distributed about the Nominal TSP and will be within the setting tolerance band with 95/95 confidence level.

3.1.3 Acceptability of Proposed Changes

The licensee proposed to implement the following technical requirements for each setpoint function identified in TS Table 3.3.1-1, 3.3.2-1, 3.3.5-1, and SR 3.3.4.2.

3.1.3.1 Establish an LSSS

The licensee proposed to establish an LSSS for each safety function. The proposed LSSS in each case is equal to the Calculated TSP and is calculated in accordance with RG&E Engineering Procedure EP-3-S-0505, Revision 1. The staff reviewed the above procedure to verify the methodology used to calculate the LSSS. For process variables increasing towards a SL, the licensee defined the LSSS as the AL minus the TLU. For process variables decreasing towards a SL, the licensee defined the LSSS as the AL plus the TLU. The TLU accounts for all know instrument error such as; process measurement effects, reference accuracies, drift, setting tolerance, and environmental effects. The random and independent variables were combined using the square root sum of squares (SRSS) methodology, and the bias terms were combined algebraically with the results. The SRSS methodology for combining uncertainty terms that are random and independent is an established and accepted analytical technique.

The licensee’s methodology for calculating instrument uncertainties includes a provision that permits the reference accuracy (repeatability, linearity, and hysteresis) of an instrument to be excluded from the TLU calculation if the setting tolerance exceeds the reference accuracy. This provision is acceptable to the staff because the reference accuracy is tacitly included in the as-found/as-left calibration data utilized in the licensee’s drift monitoring program and, therefore, is included in the instrument drift allowance.

The staff also noted that the LSSS calculations are supported by the licensee’s drift monitoring program. This program evaluates the trend in the drift data to ensure that no adverse trending is occurring and that the drift values used in the uncertainty calculations are valid. If an adverse trend is detected for a given safety channel, that channel is evaluated under the corrective action program to determine the root cause.

The staff, therefore, concludes that the licensee’s methodology for calculating the LSSS is acceptable and is in compliance with 10 CFR 50.36. The staff also concludes that the licensee drift monitoring program will ensure that the drift data assumed in the uncertainty calculations are valid and that the LSSS is properly calculated and maintained.

3.1.3.2 Establish a COT Acceptance Criterion

The proposed criterion requires that a safety channel be declared inoperable if the absolute difference between the As-Found TSP and the previous As-Left TSP exceeds the COT Uncertainty during the COT. The COT Uncertainty is the statistical combination of the reference accuracy, drift, and measurement and test equipment uncertainty. The COT Uncertainty does not include the setting tolerance. However, the setting tolerance is to be specified in the surveillance test procedures.

The COT Acceptance Criterion verifies that the bistable is operating within its design limits in both the positive and negative directions. An instrument channel that drifts outside the normal operating band in the negative direction (away from the SL), is just as unreliable as if it had drifted outside the operating band in the positive direction (towards the SL) i.e., it is not performing as designed, and should, therefore, be declared inoperable.

The COT Acceptance Criterion is a conservative criterion for verifying that the devices tested during the COT are behaving in accordance with the assumptions incorporated into the channel uncertainty analysis. The variation in the setpoint due to stochastic variations in the tested devices is expected to have a normal distribution about the mean (Nominal TSP) and is accounted for in the calculation of the TLU.

In some cases the As-Found TSP maybe non-conservative with respect to the LSSS. This is acceptable provided that the absolute difference between the As-Found TSP and the previous As-Left TSP satisfies the COT Acceptance Criterion during the COT and that a Channel Calibration is performed in accordance with the required frequency.

The Channel Calibration verifies that the instrument channel is capable of performing its intended safety function by verifying that the as-found calibration for each module in the instrument channel is consistent with the module's total instrument uncertainty (TIU). Since the TLU is the statistical combination of all TIUs, the Channel Calibration verifies the validity of the assumptions upon which the TLU is based and, therefore, the LSSS.

The staff, therefore, concludes that the combination of these two tests (COT Acceptance Criterion and Channel Calibration) provides reasonable assurance that the safety channel will perform its intended function in accordance with the expectation assumed in the Safety Analysis.

3.1.3.3 Establish a Limitation on the Acceptable Value of the Nominal TSP

The proposed criterion requires that the Nominal TSP for each trip function be equal to or conservative with respect to the LSSS. The Nominal TSP must be expressed (along with the setting tolerance) in the COT surveillance procedures. The staff agrees that if the Nominal TSP is conservative or equal to the LSSS, then there will be adequate assurance that the AL is protected so that the SL is not violated.

3.1.3.4 Establish an Operability Limit for the COT As-Left TSP

The proposed criterion requires that the measured As-Left TSP deviate from the Nominal TSP by no more than the setting tolerance assumed in the uncertainty calculations. This requirement is specified in the proposed TS and will be included in the COT surveillance procedures.

The staff reviewed these requirements and determined that the proposed changes are acceptable. The setting tolerance is included in the uncertainty calculations for the TLU. Since the TLU accounts for all known instrument errors, there is reasonable assurance with a 95/95 confidence level that the AL will not be violated. Note that if the Nominal TSP is close to the LSSS, the As-Left TSP might actually exceed the LSSS. This condition is acceptable to the staff provided that the As-Left TSP is within the calibration tolerance band about the Nominal TSP for the reasons given above. It is also consistent with Figure 1 of Regulatory Guide 1.105, which shows Region "E" ("acceptable as left condition") surrounding the LSSS and extending in the non-conservative direction.

3.1.3.5 Summary

Based on the above considerations, the staff concludes that there is reasonable assurance that the proposed TS changes will ensure adequate protection of the SL. The SL is protected because the LSSS accounts for all known instrument errors and because, at the conclusion of each surveillance test, the licensee will ensure that the TSP is restored to a value that is consistent with the analysis by which the LSSS has been derived. The staff, therefore, concludes that the methods used by the licensee to determine the LSSS and the COT operability requirements meet the requirements of 10 CFR 50.36. The proposed changes are, therefore, acceptable.

3.2 Core Safety Limits

The licensee requested that Figure 2.1.1-1, Reactor Safety Limits (RSL), be relocated to the COLR and that TS Section 2.1.1 be revised to include the following safety limits:

2.1.1.1 The departure from nucleate boiling ratio (DNBR) shall be maintained $\geq$ 1.17 for the WRB-1 correlation.

2.1.1.2 The peak fuel centerline temperature shall be maintained < 5080 °F, decreasing by 58 °F per 10,000 MWD/MTU of burnup.

Relocating Figure 2.1.1-1 to the COLR and replacing it with more specific requirements regarding core safety limits will not reduce TS requirements. The specific requirements identified in TS Section 2.1.1 clarify the value of the minimum DNBR and includes a direct reference to the fuel centerline temperature. The core safety limit curves shown in Figure 2.1.1-1 have been calculated to ensure that the specified acceptable fuel design limit as required by GDC 10 are met. That is, DNBR remains above the minimum value of 1.17, the fuel centerline temperature remains below the melting point and the maximum vessel pressure remains below 2735 psig. Per WCAP-14483A, “Generic Methodology for Expanded Core Operating Limits Report,” Westinghouse proposed that the DNBR and the fuel centerline temperature limits be retained in the TSs but that Figure 2.1.1-1 be moved to the COLR. The NRC staff in its review and approval of WCAP-14483A accepted this arrangement. These limits must be satisfied to prevent overheating of the fuel cladding and possible cladding perforation. The licensee stated that Figure 2.1.1-1 has been constructed so that the minimum DNBR remains at or above 1.4. This conservatism retains a large thermal margin in the operation of the fuel.

In addition, since the core safety limits shown in Figure 2.1.1-1 are based on the nuclear enthalpy rise hot channel factor limit, and the reactor coolant system total flow rate, both of which may be in the COLR, relocation of the figure to the COLR would eliminate the need for a license amendment if cycle-dependent changes to these parameters were needed.

The NRC-approved methodology used to derive these parameters is contained in WCAP-9272-P-A, “Westinghouse Reload Safety Evaluation Methodology.”

The licensee proposed to relocate Figure 2.1.1-1 to the COLR in accordance with the format specified in TSTF-339, Revision 2. The staff concludes that relocating Figure 2.1.1-1 to the

COLR and replacing it with more specific requirements regarding limitations on both DNBR and fuel centerline temperature will continue to satisfy the requirements of GDC 10 and 10 CFR 50.36 and is, therefore, acceptable.

3.3 OTΔT and OPΔT Trip Setpoint Parameters

The equations for the OTΔT and OPΔT trip setpoints are calculated in accordance with Notes 1 and 2 of TS Table 3.3.1-1. The licensee requested that the values for the parameters used in these equations be relocated to the COLR. The NRC staff in its review and approval of WCAP-14483A approved relocating the numerical value of the parameters used in the setpoint calculation to the COLR. Accordingly, the K constants, the dynamic compensation constants τ, the break points and the slope values for the f(ΔI) penalty functions are marked with an [*] indicating that the numerical value is relocated to the COLR, as described in WCAP-14483A . In this manner, the core safety limits can be recalculated on a cycle specific basis without requiring TS changes for every cycle.

WCAP-8745, "Design Bases for the Thermal Overpower Delta T and Thermal Overtemperature Delta T Trip Functions," will be added to the COLR administrative requirements specified in TS Section 5.6.5. TS Section 5.6.5 requires that the core safety limits be established prior to each reload cycle, or prior to any remaining portion of a reactor cycle, and documented in the COLR. The TS administrative requirements also specify that the analytical methods used to determine core safety limits be approved by the NRC and referenced in TS Section 5.6.5.

The staff concludes that relocation of the OTΔT and OPΔT parameters to the COLR does not change the TS requirements. The OTΔT and OPΔT trip setpoint calculation methodology has been approved by the staff in License Amendment No. 61 dated February 13, 1996, and the values are conservative. The staff, therefore, concludes that the proposed changes are acceptable.

3.4 OPΔT Trip Setpoint Surveillance

Function 6, OPΔT, in Table 3.3.1-1 has been revised to add two new surveillance requirements (SRs) 3.3.1.3 and SR 3.3.1.6 for the OPΔT instrument channels. These SRs are based on NUREG-1431, "Standard Technical Specifications for Westinghouse Plants."

SR 3.3.1.3

This SR requires that the excore Nuclear Instrumentation System (NIS) channel shall be adjusted if the absolute difference between the incore and excore Axial Flux Difference is $\geq$3%. The licensee proposed that SR 3.3.1.3 be modified by adding two notes. The first note clarifies that the SR is required to be performed within 7 days after THERMAL POWER $\geq$ 50% Rated Thermal Power (RTP) but prior to exceeding 90% RTP following each refueling and if the SR has not been performed within the last 31 effective full power days (EFPD). The second note states that performance of SR 3.3.1.6 satisfies this SR since it is a more comprehensive test. The staff concludes that the frequency of every 31 EFPD is adequate based on plant operating experience, considering instrument reliability and plant-specific calibration history for instrument drift. Also, the slow changes in neutron flux during the fuel cycle can be detected during this interval.

SR 3.3.1.6

This SR is a calibration of the excore channels to the incore channels every 92 EFPD. If the measurements do not agree, the excore channels are still OPERABLE but must be calibrated to agree with the incore detector measurements. If the excore channels cannot be adjusted, the NIS channels are then declared inoperable. This surveillance is performed to verify the f(ΔI) input to the OPΔT function. The f(ΔI) penalty function is designed to ensure that the core DNBR design basis will be met for highly skewed axial power shapes.

The licensee proposed that SR 3.3.1.6 be modified by adding a note stating that this SR is required to be performed within 7 days after THERMAL POWER is ≥50% RTP but prior to exceeding 90% RTP following each refueling and if it has not been performed within the last 92 EFPD.

The staff concludes that the frequency of 92 EFPD is adequate based on industry operating experience, considering instrument reliability and plant-specific calibration history for instrument drift.

Based on the above considerations, the staff concludes that the proposed changes to Function 6, OPΔT, in Table 3.3.1-1 are consistent with 10 CFR 50.36 requirements for verifying channel operability and are, therefore, acceptable.

3.5 Loss of Power Diesel Generator Start Instrumentation

At Ginna, the diesel generators provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe plant operation. The loss of power (LOP) diesel generator (DG) start instrumentation consists of two instrument channels on each safeguards bus. Each channel contains one loss of voltage relay input and one degraded voltage relay input which are combined in a one-out-of-two logic. The output from each of these channel is then combined in a two-out-of-two logic to cause the following actions on the associated safeguards bus:

a. trip normal feed breaker from offsite power;
b. trip bus-tie breaker to the opposite electrical train (if closed);
c. trip all bus loads except the containment spray pump, component cooling water pump (if no safety injection signal is present), and safety-related motor control centers; and
d. start associated DG.

The degraded voltage logic is provided on each 480 V safeguards bus to protect Engineered Safety Features (ESF) components from exposure to long periods of reduced voltage conditions which can result in degraded performance and to ensure that required motors can start. The loss of voltage logic is provided on each 480 V safeguards bus to ensure the DG is started within the time limits assumed in the accident analysis to provide the required electrical power if offsite power is lost.

The degraded voltage relays have time delays which have inverse operating characteristics such that the lower the bus voltage, the faster the operating time. The loss of voltage relays have definite time delays which are not related to the rate of the loss of bus voltage. These time delays are set to allow voltage transients to die out during worst-case motor starting conditions.

3.5.1 Technical Evaluation

The NRC staff reviewed and evaluated the proposed license amendment request which revised LCO 3.3.4, "Loss of Power Diesel Generator Start Instrumentation," by removing all references to trip setpoint from SR 3.3.4.2 and adding LSSS voltage limits for degraded voltage and loss of voltage to read as follows:

SR 3.3.4.2 Perform CHANNEL CALIBRATION with a LSSS for each 480 V bus as follows:

a. Loss of voltage LSSS ≥ 371.6 V and ≤ 378.0 V with a time delay of ≥1.64 seconds and ≤ 2.61 seconds.

b. Degraded voltage LSSS ≥ 419.6 V and ≤ 424.4 V with a time delay of ≥ 30.7 seconds and ≤ 1589 seconds (@ 416.8 V) and ≥ 25.1 seconds and ≤ 494.9 seconds (@ 368 V).

This change is consistent with NUREG-1431. The 480 V undervoltage setpoints were originally specified as a curve, but converted to actual numbers during the conversion to Improved Standard Technical Specifications. The trip setpoints are the Nominal TSPs for which a given instrument channel is expected to trip or actuate while the LSSS is the value used in the TS as the operability limit for the Nominal TSP. The LSSS in conjunction with the LCO establishes the threshold for Engineered Safety Features Actuation System action to prevent exceeding acceptable limits such that the consequences of design-basis accidents will be acceptable.

The LOP DG start instrumentation is required for the ESF Systems to function in any accident with a LOP. Undervoltage conditions which occur independent of any accident conditions result in the start and bus connection of the associated DG.

The degraded voltage LSSS and undervoltage LSSS are based on the minimum voltage required for continued operation of ESF Systems assuming worst-case loading conditions (i.e., maximum loading upon DG sequencing) and were calculated in accordance with RG&E Design Analysis DA-EE-98-006-8 Revision 2.

The LSSS for the loss of voltage relays, and associated time delays, were chosen based on the following considerations:

a. Actuate the associated DG within 2.75 seconds as assumed in the accident analysis;

b. Prevent DG actuation on momentary voltage drops associated with starting of ESF components during an accident with offsite power available and during normal operation due to minor system disturbances; and

c. Prevent DG re-sequencing on momentary voltage drops associated with starting of ESF components during an accident. Therefore, the time delay setting must be greater than the time between the largest assumed voltage drop below the voltage setting and the reset value of the trip function.

The LSSS for the degraded voltage channels, and associated time delays, were chosen based on the following considerations:

a. Prevent motors supplied by the 480 V bus from operating at reduced voltage conditions for long periods of time;

b. Prevent DG actuation on momentary voltage drops associated with starting of ESF components during an accident with offsite power available, and during normal operation due to minor system disturbances; and

c. Prevent DG re-sequencing on momentary voltage drops associated with starting of ESF components during an accident. Therefore, the time delay setting must be greater than the time between the largest voltage drop below the maximum voltage setting and the reset value of the trip function.

3.5.2 Summary

Based on the review of Design Analysis DA-EE-98-006-8 Revision 2, the staff concludes that the licensee's request for amendment to the TS associated with LOP DG start instrumentation is acceptable. Also, the proposed change that adds upper voltage limits is consistent with NUREG-1431.

3.6 Containment Ventilation Inputs

TS Tables 3.3.2-1 and 3.3.5-1 are being changed to more accurately address the Ginna design for Containment Isolation (CI) and Containment Ventilation Isolation (CVI) actuation signals. The description given in the current Table 3.3.2-1 for Function 3.c, Safety Injection, would suggest that any Safety Injection (SI) signal will result in a CI actuation, when by design, only an automatic SI will result in CI. The description given in the current Table 3.3.5-1 for Function 3, Containment Isolation - Manual Initiation, would suggest that any CI signal will result in a CVI actuation, when by design, only a manual CI signal will directly result in CVI. Table 3.3.5-1 also does not currently list SI as a required Function, when by design, any SI signal will result in a CVI. These changes will result in the TS being consistent with plant design.

As a result of these changes, the modes of applicability for LCO 3.3.2 and LCO 3.3.5 have also been changed. A requirement for manual SI to be operable during Mode 4 is being added to Table 3.3.2-1 Function 1.a, Manual Initiation, since this function provides a signal for CVI. A requirement for manual CI to be operable during core alterations and movement of irradiated fuel assemblies inside containment is being added to Table 3.3.2-1 Function 3.a, Manual Initiation, since this function also provides a signal for CVI. The modes of applicability for LCO 3.3.5 are being moved to Table 3.3.5-1, such that they may be specifically associated with the required safety function.

The staff considers these changes to be administrative in nature due to the interaction between Tables LCO 3.3.2 and LCO 3.3.5 with regards to SI, CI, and CVI. The administrative changes also clarify the requirements for both manual and automatic initiation of CVI. The movement of the LCO 3.3.5 modes of applicability to Table 3.3.5-1 is consistent with NUREG-1431. The staff, therefore, concludes that the administrative changes are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 36933). Accordingly, the 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 the amendment.

6.0 CONCLUSION

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

Principal Contributors: P. Rebstock L. Lois
S. Saba R. Clark

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