

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

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

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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 revise the Allowable Value and Trip Setpoint for the high steam flow input into LCO Table 3.3.2-1, Function 4.d (main steam isolation) to address issues identified in a revised setpoint analysis study.

A description of the amendment request, necessary background information, justification of the requested changes, a 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.

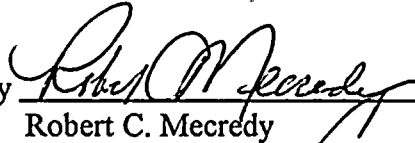
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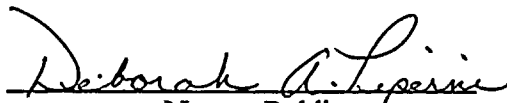
A marked up copy of the Ginna Station Technical Specifications which show the requested changes is set forth in Attachment II. The proposed revised technical specifications are provided in Attachment III.

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 III.

Rochester Gas and Electric Corporation

By   
Robert C. Mecredy  
Vice President  
Nuclear Operations

Subscribed and sworn to before me  
on this 29th day of September 1997.

  
Notary Public

DEBORAH A. PIPERNI  
Notary Public in the State of New York  
ONTARIO COUNTY  
Commission Expires Nov. 23, 1997



## Attachment I

### R.E. Ginna Nuclear Power Plant

#### License Amendment Request

#### Change to Main Steam Isolation Setpoint (LCO Table 3.3.2-1, Function 4.d)

This attachment provides a description of the license amendment request (LAR) and the necessary justifications to support a change to the Allowable Value and Trip Setpoint for the high steam flow input into LCO Table 3.3.4-1, Function 4.d (main steam isolation). This attachment is divided into six sections as follows. Section A summarizes all changes to the Ginna Station Technical Specifications while Section B provides the background and history associated with the changes being requested. Section C 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 D and E, respectively. Section F lists all references used in this attachment.

#### A. DESCRIPTION OF TECHNICAL SPECIFICATION CHANGES

This LAR proposes to revise the Ginna Station Technical Specifications as summarized below and shown in Attachment II.

##### 1. LCO 3.3.2-1, Function 4.d

The Allowable Value for the high steam flow input into this Steam Line Isolation function is changed from " $\leq 0.55E6$  lbm/hr @ 755 psi" to " $\leq 0.66E6$  lbm/hr @ 1005 psi". The Trip Setpoint is changed from " $\leq 0.4E6$  lbm/hr @ 755 psi" to " $\leq 0.4E6$  lbm/hr @ 1005 psi".

#### B. BACKGROUND

On July 30, 1997, Ginna Station Action Report (AR) 97-1174 was issued identifying a potential concern related to the Trip Setpoint for the high steam flow input into LCO Table 3.3.2-1, Function 4.d (Reference 1). Specifically, a revised setpoint analysis indicated that with the existing Trip Setpoint specified within the technical specifications, the corresponding Allowable Value requirement would not be met assuming worst case instrument uncertainty and drift. In fact, to meet the specified Allowable Value, the Trip Setpoint would have to be significantly reduced such that it was expected to be below the bistable re-set point (i.e., the bistable would not clear or re-set once the high steam flow parameter was no longer met). Since the existing field setpoint was relatively close to the Trip Setpoint specified within technical specifications (i.e., above the newly required Trip Setpoint), Ginna Station operations declared all four channels of this function inoperable and entered LCO 3.0.3 since no Condition existed within LCO 3.3.2 for this plant configuration (Reference 2).



This main steam isolation function is comprised of three separate coincident inputs: (1) high steam flow, (2) safety injection, and (3) low  $T_{avg}$ . The high steam flow input of " $\leq 0.55E6$  lbm/hr @ 755 psi" is normally met at approximately 10% RTP since steam flow per steam generator at full power is approximately  $3.3E6$  lbm/hr (i.e., bistables are normally tripped when above 10% RTP). Consequently, the Plant Operations Review Committee (PORC) determined that it was acceptable to place the bistable proving switches in the tripped condition and declare the four channels operable. This was primarily based on the following:

1. The field setpoint would continue to meet the Trip Setpoint required by technical specifications (i.e.,  $\leq 0.4E6$  lbm/hr @ 755 psi").
2. With the bistables tripped, the Allowable Value as specified within technical specifications would now be met assuming worst case instrument uncertainty and drift (i.e.,  $\leq 0.55E6$  lbm/hr @ 755 psi").
3. All technical specification surveillance requirements for this function were met and would continue to be performed as required.

Once the bistable proving switches were placed in tripped, the four channels were declared operable and LCO 3.0.3 was exited.

Subsequent to these activities, RG&E proceeded to review the history associated with the high steam flow input to this function. This review identified that the current Trip Setpoint and Allowable Value parameters have not changed since the Provisional Operating License was issued in September 1969. However, in the early 1970s, the power rating for Ginna Station was uprated from 1300 MWt to the current 1520 MWt. There was no change to the high steam flow setpoints even though the high-high steam flow Allowable Value for Table 3.3.2-1, Function 4.e was changed from  $3.3E6$  lbm/hr to  $3.7E6$  lbm/hr.

It is RG&E's belief that the high steam flow setpoints should have been changed (i.e., increased) at that time. In order to determine what the appropriate setpoints should be, a review was made of improved standard technical specifications (Ref. 3), the accident analyses, and other Westinghouse documentation. Based on this review, RG&E identified a new higher Allowable Value for this function and proposes that the associated technical specification bases be revised to provide additional clarification.

Therefore, the purpose of this LAR is to provide a new Allowable Value for the high steam flow input into LCO Table 3.3.2-1, Function 4.d. The existing Trip Setpoint value will also be slightly modified as described below in Section C and the bases clarified. Upon NRC approval of this LAR, the subject four bistable proving switches will be placed in their normal configuration with no further modifications required.





## C. JUSTIFICATION OF CHANGES

This section provides the justification for all changes described in Section A above and shown in Attachment II. The justifications are organized based on whether the change is: more restrictive (M), less restrictive (L), administrative (A), or the requirement is relocated (R). The justifications listed below are also referenced in the technical specification(s) which are affected (see Attachment II). It is noted that there are only less restrictive changes associated with this LAR.

### C.1 Less Restrictive

- i. The Allowable Value for LCO Table 3.3.2-1 Function 4.d will be changed from " $\leq 0.55E6$  lbm/hr @ 755 psi" to " $\leq 0.66E6$  lbm/hr @ 1005 psi". The basis for the change in the flowrate setpoint and pressure setpoint are described below:

- a. *Flowrate setpoint of 0.66E6 lbm/hr* - There are three installed automatic steam line isolation functions at Ginna Station. The first function (LCO Table 3.3.2-1, Function 4.c) isolates the main steam lines on a high-high containment pressure signal. The technical specification bases state that this function closes "both MSIVs in the event of a LOCA or a SLB inside containment to maintain at least one unfaulted SG as a heat sink for the reactor, and to limit the mass and energy release to containment" (page B 3.3-81). The second function isolates the MSIVs on a coincident high steam flow, safety injection, and low  $T_{avg}$  signal (i.e., the function addressed by this LAR), while the third function isolates the MSIVs on a coincident high-high steam flow and safety injection signal (LCO Table 3.3.2-1, Function 4.e). The bases for these last two functions state that they have the same basic requirement; that is, to "provide closure of the MSIVs during a steam line break or inadvertent opening of an atmospheric relief or safety valve." However, there are discrepancies with this statement being used for both functions as described below.

The only difference between LCO Table 3.3.2-1 Functions 4.d and 4.e is the steam flow setpoint and the use of low  $T_{avg}$  for Function 4.d. The steam flow Trip Setpoint for Function 4.e is  $3.6E6$  lbm/hr which is 109% of the rated capacity of each steam generator (UFSAR Section 10.3.2.2). However, each atmospheric relief valve (ARV) provides a relief capacity of only  $0.329E6$  lbm/hr at 1005 psig while the main steam safety valves average only  $0.82E6$  lbm/hr (UFSAR Table 10.1-1). With this significant difference in Trip Setpoint and relief valve capacities, Function 4.e will not provide closure of the MSIVs due to an "inadvertent opening of an atmospheric relief or safety valve." Consequently, only Function 4.d performs this function.



UFSAR Section 15.1.3.1 states that the "reactor control system is designed to accommodate a 10% step load increase ... without a reactor trip in the range of 15% to 100% power." Below 15% RTP, a reactor trip would occur with smaller load changes due to the design of the Nuclear Instrumentation System (NIS) which is intended to prevent a rapid uncontrolled power excursion from occurring that could exceed 100% RTP before trip instrumentation could terminate the event (i.e., super criticality). However, steam isolation is not credited for terminating uncontrolled power excursions for small steam breaks. Also, the fact that a 10% load increase could be accommodated implies that steam line isolation would not occur or be required between 15% and 100% RTP. Since steam demand determines power, any steam break which causes > 10% step load increase can be assumed to require isolation.

Full steam flow at 100% RTP is 6.58E6 lbm/hr (UFSAR Section 10.3.2.1) or 6.6E6 lbm/hr. Choosing 10% RTP equates to 0.66E6 lbm/hr and is also equal to two ARVs opening at 1005 psig (UFSAR Table 10.1-1). The use of 0.66E6 lbm/hr at 1520 MWt is also roughly approximate to that of 0.55 lbm/hr at 1300 MWt (original power rating).

- b. *Pressure of 1005 psig* - Steam line breaks are primarily analyzed at various conditions for Ginna Station (e.g., hot zero power, 30%, 70%, and 100% RTP). As described above, Function 4.e provides steam line isolation with respect to large steam line breaks while Function 4.d provides isolation for smaller breaks. However, specifying the same pressure for both setpoints does not address the different plant conditions between full and hot zero power conditions.

Functions 4.d and 4.e are similar to those provided in NUREG-1431, Table 3.3.2-1, Functions 4.g and 4.h, respectively. In NUREG-1431, these two functions have setpoints based on "no load steam pressure" and "full steam pressure." To address the issue of steam line breaks at hot zero power, and to provide consistency with NUREG-1431, the pressure value will be changed to that of hot zero power or 1005 psig. This change also provides consistency with the high steam flow setpoint of 0.66E6 lbm/hr being based on two ARVs opening at 1005 psig (UFSAR Table 10.1-1). It should be noted that the flow signal to the bistable for this function is not pressure compensated (i.e., it is a "straight" flow signal). Pressure compensation only exists for the main control board indication which is used for performing required channel checks on this function.

2. The Trip Setpoint for LCO Table 3.3.2-1 Function 4.d will be changed from " $\leq 0.4E6$  lbm/hr @ 755 psi" to " $\leq 0.4E6$  lbm/hr @ 1005 psi". That is, only the pressure parameter is being revised. The basis for this change is the same as that described in C.1.1.b above (i.e., hot zero power conditions). The actual setpoint of  $\leq 0.4E6$  lbm/hr is unchanged since RG&E setpoint analyses show that the new Allowable Value of  $0.66E6$  lbm/hr would be met under worst case instrument uncertainty and drift (Ref. 4).

The change in the Trip Setpoint and Allowable Value setpoints, and the corresponding bases clarifications, have been reviewed by Westinghouse and found to be acceptable (Ref. 5). For steam line breaks, credit is taken (where possible) for the non-return check valves which are installed in-series with the MSIVs (see LCO 3.7.2). Nonetheless, it was verified that with the higher Allowable Value for Function 4.d, the high steam flow input signal was reached prior to either the safety injection or low  $T_{avg}$  signals. That is, following this change, there is no impact with respect to the time at which Function 4.d would generate a steam line isolation signal for any accident previously analyzed for Ginna Station.

There are not any administrative (A), more restrictive (M), or relocated (R) changes associated with this LAR.

#### D. SIGNIFICANT HAZARDS CONSIDERATION EVALUATION

The proposed changes to the Ginna Station Technical Specifications as identified in Section A and justified in Section C have been evaluated with respect to 10 CFR 50.92(c) and shown to not involve a significant hazards consideration as described below. This section is organized based on Section C above.

##### D.1 Evaluation of Less Restrictive Changes

The less restrictive changes discussed in Section C.1 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. An increase in the high steam flow Allowable Value for LCO Table 3.3.2-1, Function 4.d does not increase the probability of any analyzed accident nor does it increase the likelihood of an inadvertent main steam isolation. This function is not explicitly credited in the accident analyses. Also, there are three coincident parameters which must be reached in order for this function to cause a main steam line isolation. It has been demonstrated that the change to the high steam flow parameter does not delay the time at which this isolation signal would be reached for any analyzed accident since the steam flow value is reached much earlier in the accident scenario than the other parameters. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously analyzed.



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. Thus, this change does not create the possibility of a new or different kind of accident from any accident 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 directly affect any analyzed accident analysis. The new isolation times will not be affected for analyzed accidents. As such, no question of safety is involved, and the change does not involve a significant reduction in a margin of safety.

Based upon the above information, it has been determined that the proposed 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.

#### E. 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 D 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 no specifications related to offsite releases are affected; 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.

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.

F. REFERENCES

1. Ginna Station Action Report 97-1174, *High Steam Flow Value May Not Include Instrument Uncertainty*, July 20, 1997.
2. Letter from R.C. Mecredy, RG&E, to G.S. Vissing, NRC, Subject: *LER 97-003, Bistable Instrument Setpoint (Plus Instrument Uncertainty) Could Exceed Allowable Value, Causes Condition Prohibited by Plant Technical Specifications*, dated August 28, 1997.
3. NUREG-1431, *Improved Standard Technical Specifications for Westinghouse Plants*.
4. Ginna Station Design Analysis DA EE92-089-21, EWR 5126, *Instrument Loop Performance Evaluation and Setpoint Verification, Instrument Loop Number SG F464*, Revision 1.
5. Letter from R.H. Owoc, Westinghouse, to R.W. Eliaz, RG&E, Subject: *High Steam Flow Setpoint Change*, dated September 11, 1997.

