

October 10, 2000

Dr. Robert C. Mecredy  
Vice President, Nuclear Operations  
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Rochester, NY 14649

SUBJECT: R. E. GINNA NUCLEAR POWER PLANT - AMENDMENT PROVIDING  
TECHNICAL SPECIFICATION CHANGES FOR CONTROL ROOM EMERGENCY  
AIR TREATMENT SYSTEM (CREATS) (TAC NO. MA9529)

Dear Dr. Mecredy:

The Commission has issued the enclosed Amendment No. 78 to Facility Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant. This amendment is in response to your application dated July 21, 2000.

The amendment revises the Technical Specifications to remove the CREATS Actuation Instrumentation operability during Modes 5 and 6 except during core alterations and fuel movement based on the control room dose calculations.

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/*

Guy S. Vissing, Sr. 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. 78 to License No. DPR-18  
2. Safety Evaluation

cc w/encls: See next page

R.E. Ginna Nuclear Power Plant

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\*\*SE provided - no major changes

Accession No.: ML003751611

OFFICE	PM:PDI-1	LA:PDI-1	OGC	SC:PDI-1	BC:SPLB	BC:EEIB	BC:SPSB
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DATE	9/26/00	9/26/00	10/4/00	10/6/00	9/9/00	9/14/00	9/14/00

Official Record Copy

DATED: October 10, 2000

AMENDMENT NO. 78 TO FACILITY OPERATING LICENSE NO. DPR-18-GINNA NUCLEAR  
POWER PLANT

PUBLIC

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ROCHESTER GAS AND ELECTRIC CORPORATION

DOCKET NO. 50-244

R. E. GINNA NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 78  
License No. DPR-18

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The application for amendment filed by the Rochester Gas and Electric Corporation (the licensee) dated July 21, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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 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. 78, 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 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Marsha Gamberoni, 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: October 10, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 78

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

3.3-41  
3.3-42  
3.7-20  
3.7-21  
3.7-22

Insert

3.3-41  
3.3-42  
3.7-20  
3.7-21  
3.7-22

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 78 TO FACILITY OPERATING LICENSE NO. DPR-18  
ROCHESTER GAS AND ELECTRIC CORPORATION  
R. E. GINNA NUCLEAR POWER PLANT  
DOCKET NO. 50-244

## 1.0 INTRODUCTION

By letter dated July 21, 2000, the Rochester Gas and Electric Corporation (the licensee) submitted a request for changes to the R. E. Ginna Nuclear Power Plant (Ginna) Technical Specifications (TSs). The requested changes would revise the Technical Specifications to remove the Control Room Emergency Air Treatment System (CREATS) Actuation Instrumentation operability during Modes 5 and 6 except during core alterations and fuel movement. The proposed change would revise TS surveillance requirements (SRs) Limiting Conditions for Operation (LCO) 3.7.9 during plant operational Modes 5 and 6 except during core alteration and movement of irradiated fuel assemblies. CREATS would no longer be required during reactor operational Modes 5 and 6, but operability would be required when moving irradiated fuel and during core alternations. The licensee has requested this change because according to current TS requirements, no preventive or corrective maintenance on the control room barriers could be performed until the reactor is offloaded.

## 2.0 BACKGROUND

The CREATS is designed to protect control room (CR) operators from an uncontrolled release of highly radioactive fission products and to maintain doses within General Design Criterion (GDC) 19 limits. The CREATS is designed to filter the CR atmosphere during periods when the CR is isolated and to maintain radiation level in the CR at acceptable levels following a design-basis accident (DBA). The location of components and CREATS related ducting within the control room envelope (CRE) ensure an adequate supply of filtered air to all areas requiring access.

The CREATS filtration train consists of manual actuation pushbutton and automatic actuation logic relay for actuating the CREATS. The air entering the CR is continuously monitored by radiation and toxic gas detectors. One detector output above the setpoint will cause actuation of the emergency radiation state or toxic gas isolation state, as required. CR radiation and toxic gas detectors initiate the CREATS upon sensing of high radiation and toxicity levels in the CR. The CR is continuously occupied by the operating personnel under all operating and accident conditions. Sufficient shielding, ventilation, and habitability provisions exist to ensure that the CR personnel can perform all required safety functions from the CR under all credible postulated accident conditions.

### 3.0 EVALUATION

#### 3.1 Evaluation of the Operation and Accident Considerations

The current Ginna TS 3.7.9 "CREATS" requires that the CREATS must be operable in reactor operational Modes 1, 2, 3, and 4, to provide airborne radiological protection for the CR operators during and following a DBA. Also CREATS is currently required to be operable in Modes 5 and 6 due to the potential for a rupture of a waste gas decay tank. Additionally, CREATS is required to remain in service during fuel movement in the event of a fuel handling accident (FHA) to ensure GDC 19 limits are met. The applicability for TS 3.7.9 will be revised to assure CREATS operability during the movement of irradiated fuel assemblies and core alterations to reduce the potential risk of CR operators dose from a radiological accident. The applicability of TS 3.7.9 will be revised to delete the requirement for operability in Modes 5 and 6, because it has been determined that in these Modes the system is not required to mitigate the consequences of a waste gas decay tank failure. The results of the licensee's analysis show that if no credit is taken for the CREATS, the CR doses remain within the limits of GDC 19 for rupture of a waste gas design tank.

In the licensee's submittal dated July 21, 2000, it is stated that the proposed change for applicability of CREATS does not itself involve physical alteration of the plant nor changes in the methods governing normal plant operation.

The requested changes will affect SR LCO 3.7.9 as follows:

#### 3.7 PLANT SYSTEMS

##### 3.7.9 Control Room Emergency Air Treatment System (CREATS)

LCO 3.7.9 The CREATS shall be OPERABLE.

CURRENT APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,  
During movement of irradiated fuel assemblies.

#### CURRENT ACTIONS

Note: Actions A, B, C, and E will not change.

- D. Required action and associated Completion Time of Condition A or B not met in MODE 5 or 6 or during movement of irradiated fuel. Immediately place OPERABLE isolation damper(s) in CREATS MODE F. Immediately suspend CORE ALTERATIONS, AND, Immediately suspend movement of irradiated fuel assemblies.
- F. Two CREATS isolation dampers for one or more outside air flow paths inoperable in MODE 5 or 6 or during movement of irradiated fuel assemblies. Immediately initiate actions to restore one isolation damper to OPERABLE status. Immediately suspend CORE ALTERNATIONS. Immediately suspend movement of irradiated fuel assemblies.

PROPOSED APPLICABILITY: MODES 1, 2, 3, and 4,  
During movement of irradiated fuel assemblies,  
During CORE ALTERATIONS.

PROPOSED ACTIONS

- D. Required action and associated Completion Time of Condition A or B not met during movement of irradiated fuel or during CORE ALTERATIONS. Immediately place OPERABLE isolation damper(s) in CREATS MODE F. Immediately suspend CORE ALTERATIONS, AND, Immediately suspend movement of irradiated fuel assemblies.
- F. Two CREATS isolation dampers for one or more outside air flow paths inoperable during movement of irradiated fuel assemblies or during CORE ALTERATIONS. Immediately restore one isolation damper to OPERABLE status. Immediately suspend CORE ALTERATIONS AND Immediately suspend movement of irradiated fuel assemblies.

In addition to the above proposed TS changes, the associated Bases of TS 3.7.9 will be changed as follows:

BASES B 3.7.9

APPLICABLE SAFETY ANALYSES, B 3.7-67

CURRENT

Second Paragraph

In MODES 5 and 6, and during movement of irradiated fuel assemblies, the CREATS ensures control room habitability in the event of a fuel handling accident, or waste gas decay tank rupture accident.

PROPOSED

During movement of irradiated fuel assemblies, or during CORE ALTERATIONS, the CREATS ensures control room habitability in the event of a fuel handling accident. It has been demonstrated that the CREATS is not required in the event of a waste gas decay tank rupture.

APPLICABILITY, B 3.7-69

CURRENT

In MODES 1, 2, 3, and 4, the CREATS must be OPERABLE to control operator exposure during and following a DBA.

In MODES 5 and 6, the CREATS is required to cope with the release from the rupture of a waste gas decay tank.

During movement of irradiated fuel assemblies, the CREATS must be OPERABLE to cope with the release from a fuel handling accident.

#### PROPOSED

In MODES 1, 2, 3, and 4, the CREATS must be OPERABLE to control operator exposure during and following a DBA.

During movement of irradiated fuel assemblies, or during CORE ALTERATIONS, the CREATS must be OPERABLE to cope with the release from a fuel handling accident.

#### ACTIONS, B 3.7-69

Actions A.1 and A.2, B.1, C.1 and C.2, and E.1 will not change

#### D.1, D.2.1, and D.2.2, B 3.7-70

#### CURRENT

In MODES 5, or 6 or during movement of irradiated fuel assemblies, If the Required Actions of Conditions A or B cannot be completed within the required Completion Time, action must be taken to immediately place the OPERABLE isolation damper(s) in CREATS Mode F...

#### PROPOSED

During movement of irradiated fuel assemblies or CORE ALTERATIONS, If the Required Actions of Conditions A or B cannot be completed within the required Completion Time, action must be taken to immediately place the OPERABLE isolation damper(s) in CREATS Mode F...

#### CURRENT

#### F.1, and F.2, and F.3, B 3.7-71

In MODE 5 and 6 or during movement of irradiated fuel assemblies, with two CREATS isolation dampers for one or more outside air flow path inoperable, the action must be taken immediately to restore one isolation damper in each affected air supply paths to OPERABLE status. In addition, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room...

#### PROPOSED

#### F.1 and F.2

During movement of irradiated fuel assemblies or CORE ALTERATIONS, with two CREATS isolation dampers for one or more outside air flow paths inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room...

In the licensee's submittal dated July 21, 2000, the licensee stated that CREATS operation is not required to meet GDC 19 limits in reactor operational Modes 5 and 6 or defueled, except during core ALTERATIONS and fuel movement. The applicability of CREATS is not required in Modes 5 and 6 (cold shutdown and refueling) because the licensee has performed an evaluation for a waste gas decay tank or a fuel handling accident by performing analyses which show that not taking credit for the CREATS results in control room doses well within the limits specified in 10 CFR Part 50, Appendix A, GDC 19, and the guidance provided by the NRC in NUREG-0737, Section 11.B.2, Dose Rate Criteria and NUREG-0800, Section 6.4, Control Room Habitability Program. As stated under Section 3.3 of this report, the staff agrees with the licensee's assertion that the application of these changes will not affect the integrity of CRE and the Control Room Habitability (CRH) following a DBA. The staff finds that the proposed changes do not have a negative impact on this design, and as a result of its review and assessment, the staff also finds that the proposed changes are within regulatory guidelines and are acceptable.

The NRC staff concludes that the proposed changes to the CREATS TS and associated Bases will not adversely affect plant operation in Modes 5 and 6. The licensee has evaluated the unavailability of CREATS during reactor operational Modes 5 and 6 following a DBA and determined that the CR doses remain within the limits specified in GDC 19. However, CREATS must remain in service during movement of irradiated fuel assemblies and core ALTERATIONS to ensure GDC 19 limits are met in the event of FHA. Therefore the proposed changes to TS 3.7.9 outlined above are acceptable.

### 3.2 Evaluation for the Instrumentation and Control Considerations

The proposed changes to TS 3.3.6 and the staff's evaluation of the changes are discussed below:

#### PROPOSED

The applicability of LCO 3.3.6 and Condition C of LCO 3.3.6 will be revised to include the phrase "during CORE ALTERATIONS."

This requirement is currently implied in the TS because the suspension of core alteration is a required action of the referenced Condition C of LCO 3.3.6. According to the analysis performed by the licensee, CREATS must remain in service during core alteration and fuel movement in the event of a fuel-handling accident to ensure that the dose limits required for the control room are met. This change clarifies the existing requirement of the TS. Based on this we find the proposed change acceptable.

#### PROPOSED

The applicability of LCO 3.3.6 and Condition C of LCO 3.3.6 will be revised to delete Modes 5 and 6 from this section.

In accordance with the bases for this LCO, CREATS must be operable in Modes 5 and 6 because of the potential for a rupture of a waste gas decay tank or a fuel-handling accident. The licensee has performed an analysis to show that CREATS is not required to be operable to maintain control room doses well within the limits specified in 10 CFR Part 50, Appendix A, GDC 19 and the guidance provided by the NRC in NUREG-0737, "Clarification of TMI Action Plan Requirements," Section 11.B.2, Dose Rate Criteria, and NUREG-0800, "Standard Review Plan," Section 6.4, Control Room Habitability Program. Also, this change is

consistent with NUREG-1431, "Improved Standard TS," which allows for applicability requirements to be site-specific.

### CURRENT

The Required Action and Completion Time of Condition C of LCO 3.3.6 will be revised to delete Required Action C.1.

### PROPOSED

Required Action C.1 of LCO 3.3.6 requires immediately initiating action to restore a channel of CREATS instrumentation to operable status. However, since removing Modes 5 and 6 from the Applicability section, the remaining required actions place the plant outside of the LCO mode of applicability, and Required Action C.1 is no longer required. This change is also consistent with the objective of NUREG-1431, which requires that required actions must either limit the time in the specified condition or require an exit from the mode of applicability. Based on this, we find the proposed change acceptable.

On the basis of this evaluation, the staff finds that the proposed changes are consistent with NUREG-1431, and are justified by the analysis. The staff, therefore, concludes that the proposed TS changes are acceptable.

### 3.3 Evaluation for the Radiological Considerations

A gas decay tank (GDT) rupture is the only DBA at Ginna that is postulated to occur during plant MODES 5 and 6 except those considered during core alterations and fuel movement such as a fuel handling accident. The GDTs contain the radioactive gases vented from various plant systems during normal plant operation. A total of four GDTs with 470 ft<sup>3</sup> storage capacity each is provided to store the contents for 45 days prior to the release to the environment. The GDT rupture accident is defined as an uncontrolled instantaneous release of stored radioactive gases to the environment resulting from failure of a gas tank or its associated piping.

NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants," recommends that the quantity of radioactive gas in each GDT be limited to a predetermined curie content that ensures, in the event of an uncontrolled release of the tank contents, the resulting total body exposure to an individual at the nearest exclusion area boundary (EAB) will not exceed 0.5 rem. The Ginna design basis limits the quantity of radioactivity contained in each GDT to 1E+5 curies of equivalent Xe-133 to meet this recommendation. The licensee submitted the results of its offsite and control room radiological consequence of a GDT rupture with 1E+5 curies of equivalent Xe-133. In its submittal, the licensee concluded that the radiological consequences at the EAB will still be within the dose recommended in NUREG-0133 and that the radiological consequence to the control room operator will still be within the dose criteria specified in GDC 19 of 10 CFR Part 50. To review the licensee's radiological consequence analyses, the staff performed confirmatory dose calculations. The staff assumed that the fission product release resulting from the GDT rupture would be an instantaneous puff release and the control room ventilation system would be in normal operation with 2000 cfm outside air intake. Therefore, the unfiltered air inleakage rate into the control room is irrelevant. The staff's dose calculations confirmed the licensee's conclusion. The resulting radiological doses at the EAB and to the control room operators calculated by the staff are given in Table 1. The major parameters used by the staff in its dose calculations are given in Table 2.

On the basis of this evaluation, the staff concludes that the TS changes requested by the licensee are acceptable.

TABLE 1  
Radiological Consequences of Gas Decay Tank Rupture  
(rem)

Exclusion Area Boundary	
... Whole-Body	0.24
... Dose Acceptance Criterion	0.5 <sup>(1)</sup>
Control Room	
Whole-Body	<0.1
Skin	0.66
Dose Acceptance Criteria <sup>(2)</sup>	5 (Whole-Body) 30 (Skin)

<sup>1</sup> NUREG-0133

<sup>2</sup> Standard Review Plan

TABLE 2  
Major Parameters Used  
Gas Decay Tank Rupture  
Offsite and Control Room Dose Calculations

<u>Parameters</u>	<u>Values</u>
Source Term	1E+5 curies equivalent Xe-133
Gas Decay Tank Volume	470 ft <sup>3</sup>
Release Mode	Instantaneous
Control Room Volume	32,590 ft <sup>3</sup>
Control Room air Intake	2000 cfm
Control Room Occupancy Factor	1.0
Atmospheric Dispersion Factors	
Exclusion Area Boundary	4.8E-4 sec/cm <sup>3</sup>
Control Room	6.95E-4 sec/cm <sup>3</sup>

#### 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. 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 (65 FR 48757). 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.

#### 5.0 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: N. Iqbal  
H. Garg  
J. Lee

Date: October 10, 2000