

July 26, 2006

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: REFUELING
OPERATIONS WITH EQUIPMENT HATCH OPEN (TAC NO. MC8910)

Dear Mrs. Korsnick:

The Commission has issued the enclosed Amendment No. 98 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 November 7, 2005, as supplemented on May 5, 2006.

The amendment revises Technical Specification 3.9.3, "Containment Penetrations," to allow an emergency egress door, access door, or roll up door, as associated with the equipment hatch penetration, to be open, but capable of being closed, during core alterations or movement of irradiated fuel within containment.

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/

Patrick D. Milano, Sr. Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosures:

1. Amendment No. 98 to Renewed License No. DPR-18
2. Safety Evaluation

cc w/encls: See next page

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Accession Number: ML061600223

OFFICE	LPLI-1\PM	LPLI-1\LA	AADB\BC	ITSB\BC	OGC	LPLI-1\BC
NAME	PMilano	SLittle	MKotzalas	TKobetz	SUttal	RLaufer
DATE	06/15/06	06/14/06	05/31/06	06/21/06	07/02/06	07/26/06

Official Record Copy

DATED: July 26, 2006

AMENDMENT NO. 98 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-18
R.E. GINNA NUCLEAR POWER PLANT

PUBLIC

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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. 98
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 R.E. Ginna Nuclear Power Plant, LLC (the licensee) dated November 7, 2005, as supplemented on May 5, 2006, 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 License and 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. 98, 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 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications and License

Date of Issuance: July 26, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 98

RENEWED FACILITY OPERATING LICENSE NO. DPR-18

DOCKET NO. 50-244

Replace the following page of the Renewed Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove

3

Insert

3

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

3.9.3-1

3.9.3-2

Insert

3.9.3-1

3.9.3-2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 98 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 letter dated November 7, 2005, as supplemented on May 5, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML053190213 and ML061320480, respectively), the R.E. Ginna Nuclear Power Plant, LLC (the licensee) submitted a request for changes to the R.E. Ginna Nuclear Power Plant Technical Specifications (TSs). The requested changes would revise the TSs to allow refueling operations to be conducted with the containment equipment hatch open, provided that the hatch is capable of being closed under administrative control. Specifically, the proposed amendment would revise TS 3.9.3, "Containment Penetrations," to permit either both equipment hatch doors, the closure plate access door, or the roll-up door associated with the enclosure building to be open during core alterations or movement of irradiated fuel inside containment with the capability of being closed under administrative control. In this regard, the amendment adopts TS Task Force (TSTF) Standard TS Change Travelers TSTF-68, "Containment Personnel Airlock Doors Open During Fuel Movement," and TSTF-312, "Administratively Control Containment Penetrations."

The May 5, 2006, letter 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 January 3, 2006 (71 FR 154).

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) staff finds that the licensee in its November 7, 2005, application, identified the applicable regulatory requirements. The regulatory requirements and guidance which the NRC staff considered in its review of the requested action are as follows:

1. Section 50.67, "Accident source term," of Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR) provides the requirements to any licensee seeking to revise its current accident source term in design basis radiological consequence analyses.

2. General Design Criterion (GDC) 19, "Control room," of Appendix A to 10 CFR Part 50 requires, in part, that a control room be provided with adequate radiation protection to permit access and occupancy under accident conditions.
3. GDC 56, "Primary containment isolation," requires that each line that connects directly to the containment atmosphere and penetrates primary containment shall be provided with containment isolation valves.
4. NRC-approved Generic Changes to the Standard TS:
 - a. TSTF-68, Revision 2, "Containment Personnel Airlock Doors Open During Fuel Movement," August 16, 1999; and
 - b. TSTF-312, Revision 1, "Administratively Control Containment Penetrations," August 16, 1999.

As stated in Section 1.3 of the Ginna Updated Final Safety Analysis Report (UFSAR), the discussion of general design criteria is divided into two parts. UFSAR Section 3.1.1 discusses the GDC used during the original licensing of Ginna. The criteria used at that time comprised the proposed Atomic Industrial Forum (AIF) versions of the criteria issued for comment by the Atomic Energy Commission on July 10, 1967, and defined or described the safety objectives and approaches incorporated in the design of this plant. UFSAR Section 3.1.2 discusses the adequacy of the Ginna design relative to the 1972 version of the GDC in Appendix A to 10 CFR Part 50 and describes the conformance at Ginna to the 1972 version of the GDC. In this regard, conformance with GDC 19 and 52 is described in UFSAR Sections 3.1.2.2.10 and 3.1.2.5.7.

3.0 TECHNICAL EVALUATION

3.1 Background

On February 25, 2005, the NRC issued Amendment No. 87 (ADAMS No. ML050320491), which authorized the full implementation of an alternate source term (AST) in accordance with 10 CFR 50.67. The radiological consequences analyses used the analytical methods and assumptions outlined in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors." As part of this approved amendment, the dose consequences of a fuel-handling accident (FHA) in containment and its analysis methodology were reviewed.

3.2 Proposed TS Change

The licensee proposed to revise Limiting Condition for Operation (LCO) 3.9.3.a. regarding the status of the equipment hatch during refueling operations. Depending on the closure method being used, the proposed change would allow either both equipment hatch doors, the closure plate emergency egress door, or the roll-up door associated with the enclosure building to be open during movement of irradiated fuel assemblies and capable of being closed under administrative control in the event of an FHA.

3.3 Radiological Consequence Analysis

The current licensing basis radiological consequence analysis for the postulated design-basis FHA is based on an AST, as approved by the NRC staff in Amendment No. 87. The licensee determined the dose consequences for an FHA in containment based on assumptions in the Ginna UFSAR Section 15.7.3 and consistent with the methodology described in RG 1.183. The previously approved analysis assumed that the equipment hatch was open and the total activity release occurred over a period of 2 hours without any credit for filtration, holdup, or dilution. The licensee assumed in its analysis control room isolation with a filtered recirculation flow of 5400 cubic feet per minute (cfm). The assumed unfiltered inleakage rate of 300 cfm has been validated by a tracer gas inleakage test, performed in February 2005.

As part of the supporting analyses for its application dated July 7, 2005, to increase the steady state power level (extended power uprate (EPU)), the licensee reanalyzed all design-basis accidents (DBAs), including the FHA. With the exception of the increased power, the methodology and assumptions used in the analysis remained unchanged from those previously approved by the NRC. The increase in the FHA dose associated with the EPU remain well below the dose acceptance criteria.

The current licensing basis FHA radiological consequences analysis is bounding for the proposed TS change for the offsite doses. However, the control room dose was reanalyzed as a result of the change in atmospheric dispersion factors (χ/Q values) as discussed in Section 3.5 of this safety evaluation (SE).

3.4 Evaluation of TS Change and Administrative Controls

The licensee proposes the following controls during core alterations or movement of irradiated fuel inside containment:

- a. If the equipment hatch is bolted in place and being used for containment closure, both doors in the associated personnel air lock would be permitted to be open. The doors would be under administrative control such that one door can be closed within the required time following an FHA. Closing the doors would be done by swinging the door closed and securing it with a dogging wheel.
- b. If the equipment hatch closure plate is bolted in place and being used for containment closure, the associated emergency egress door would be permitted to be open. The emergency egress door would be under administrative control such that the door can be closed within the required time following an FHA. In this configuration, the equipment hatch enclosure is unbolted and withdrawn from the containment shell via a rail system. The temporary plate is then bolted in place to close the opening. An emergency egress door is located in the closure plate. Closing the emergency egress door is done by manually closing and latching the door.
- c. If the enclosure building and roll-up door are being used for containment closure, the roll-up door would be permitted to be open. The door would be under administrative control such that it could be closed within the required time following an FHA. In this configuration, the equipment hatch enclosure is unbolted and withdrawn from the

containment shell via a rail system. The overhead door is a steel roll-up type unit that is composed of hinged panels and is capable of motorized or manual operation. It is attached to a non-pressure rated reinforced concrete enclosure that is built around the equipment hatch opening outside of containment. The door moves on a track attached to the enclosure and when opened, retracts into the enclosure. Closing the roll-up door is an evolution comprised of electrically or manually operating the roll-up door operating mechanism.

The proposed TS changes are consistent with both TSTF-68 and TSTF-312, which were approved for use by licensees on August 16, 1999. These two TSTF's were approved by the NRC staff for the use in proposing changes to plant-specific TSs based on NUREG-1431. TSTF-68 revises LCO 3.9.3 to allow the containment personnel air lock doors to remain open during core alterations or movement of irradiated fuel assemblies within containment. The licensee also complies with the 'Reviewers Note' from TSTF-68 regarding the commitment to implement administrative controls for the prompt closure to the equipment hatch closure plate emergency egress door. TSTF-312 adds a Note to LCO 3.9.3 to allow containment penetrations that have direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls during core alterations or movement of irradiated fuel assemblies within containment.

Based on the description of the administrative controls provided by the licensee for the equipment hatch doors, the closure plate emergency egress door, and the roll-up door associated with the enclosure building, the NRC staff concludes that there are sufficient administrative controls to ensure that the containment equipment hatch penetration will be closed following the FHA inside containment. Therefore, the NRC finds these changes are consistent with TSTF-68 and TSTF-312 and are, therefore, acceptable.

In its application, the licensee proposed adding this description to the TS Bases during the implementation of the amendment. Therefore, when the amendment is incorporated into the TSs, the description of the administrative controls will be in the TSs Bases. Any changes to the description of the administrative controls will then be controlled under the Bases Control Program per Ginna TS Section 5.5.13. The NRC staff finds this acceptable.

3.5 Atmospheric Dispersion Estimates

In Enclosure 1 to its November 7, 2005, application, the licensee proposed the use of existing atmospheric dispersion factors (χ/Q values) to perform the Ginna control room, exclusion area boundary (EAB), and low population zone (LPZ) dose assessments. These χ/Q values were previously generated by the licensee in support of Amendment No. 87. As discussed in the associated SE, the licensee calculated the control room air intake χ/Q value using the ARCON96 computer code (NUREG/CR-6331, Revision 1, "Atmospheric Relative Concentrations in Building Wakes") and EAB and LPZ χ/Q values using the PAVAN computer code (NUREG/CR-2858, "PAVAN: An Atmospheric Dispersion Program for Evaluating Design Basis Accidental Releases of Radioactive Materials from Nuclear Power Stations"). All postulated releases were considered ground level releases. Hourly data from the 33-foot (10-meter) and 150-foot (45.7-meter) levels on the onsite meteorological tower were provided as input to ARCON96. The joint frequency distribution used as input to PAVAN was compiled using wind data from the 10-meter level. Stability class was based on delta-temperature

measurements made between the 45.7-meter and 10-meter levels on the onsite meteorological tower.

In Enclosure 1, the licensee further stated that the proposed amendment would permit either both equipment hatch doors, the closure plate emergency egress door, or the roll-up door associated with the enclosure building to be open during refueling. With regard to the control room FHA χ/Q value, the SE for Amendment No. 87 only considered potential effluent release via the roll-up door. Thus, by letter dated March 23, 2006, NRC staff requested that the licensee confirm that their assessment performed in support of Amendment No. 87 represented the limiting case. In its May 5, 2006 response, the licensee provided a summary considering three scenarios.

1. The first scenario, representing typical operation, assumed a release via the roll-up door as previously analyzed in the submittal supporting the request for Amendment No. 87. This postulated release was assumed to be an area source, based upon the dimensions of the roll-up door.
2. If the roll-up door became inoperable, the hatch barrel/airlock assembly would be reinstalled to achieve closure. The end of the assembly is inside the enclosure building, approximately four feet from the roll-up door. The licensee also modeled this as an area source release, based upon the dimensions of the hatch barrel/airlock assembly door, which is smaller than the roll-up door. The licensee conservatively assumed no dispersion within the enclosure building prior to release of the effluent to the environment.
3. Should it not be possible to achieve closure via either the roll-up door or the hatch barrel/airlock assembly, a closure plate would be installed. This closure plate has an emergency egress door with dimensions slightly larger than the dimensions of the hatch/airlock assembly assessed in the second scenario. A release through the open emergency egress door in the closure plate would travel into the enclosure building and out a roll-up door on the opposite side of the enclosure building.

The licensee determined that the second scenario is the limiting case. The resultant 0-2 hour control room χ/Q value generated by the licensee, assuming a release from the hatch barrel/airlock assembly, is approximately 3 percent higher than the χ/Q value generated for a release from the roll-up door as assumed in the assessment performed to support Amendment No. 87.

Based upon review of the licensee's supplemental control room χ/Q calculation and the review of the EAB and LPZ χ/Q values described in the SE associated with Ginna Amendment No. 87, the NRC staff concludes that the Ginna control room, EAB and LPZ χ/Q values generated by the licensee for use in support of this license amendment request are acceptable. These values are presented in Table 1.

Table 1

Ginna χ/Q Values (sec/m³) - Fuel Handling Accident with Open Hatch

Time Interval	Receptor	χ/Q Value (s/m³)
0 - 2 hr	Control room	5.76×10^{-3}
0 - 2 hr	EAB	2.17×10^{-4}
0 - 8 hr	LPZ	2.51×10^{-5}

3.6 Summary

The NRC staff reviewed the DBA radiological consequence analysis of an FHA and the capability of administrative controls to close the referenced containment penetrations. The licensee's assessment of the radiological consequence resulting from the postulated FHA was previously reviewed and approved by the staff in Amendment No. 87. The staff determined that the FHA analysis remains bounding for the proposed TS change with respect to the offsite doses and has reasonable assurance that 10 CFR 50.67, GDC-19, and the regulatory dose acceptance criteria in RG 1.183 will continue to be met. The staff has also determined that with the new dimensions and distances calculated as a diffuse area source, the application of the new control room χ/Q value is acceptable from a dose perspective. The NRC staff further concludes that there are sufficient administrative controls to ensure that the containment equipment hatch penetration will be closed as required following the postulated FHA. Therefore, the staff finds that the proposed TS change is acceptable with respect to the radiological consequence of an FHA.

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 (71 FR 154). 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: L. Brown
B. Lee

Date: July 26, 2006