September 14, 2000

MEMORANDUM TO: Guy S. Vissing, Senior Project Manager
Project Directorate l
Division of Licensing and Project Management
Office of Nuclear Reactor Regulation

FROM: Mark Reinhart, Chief ***/RA by Mark Caruso Acting For/***
Licensing Section
Probabilistic Safety Assessment Branch
Division of Systems Safety and Analysis
Office of Nuclear Reactor Regulation

SUBJECT: SAFETY EVALUATION FOR PROPOSED TECHNICAL SPECIFICATION CHANGES FOR CONTROL ROOM EMERGENCY AIR TREATMENT SYSTEM ACTUATION INSTRUMENTATION AND CONTROL ROOM EMERGENCY AIR TREATMENT SYSTEM FOR GINNA NUCLEAR POWER PLANT (TAC N0. MA9529)

By letter dated July 21, 2000, the Rochester Gas and Electric Corporation requested an amendment to the Ginna Station Improved Technical Specifications (ITS). These requests are associated with the control room emergency air treatment system and its actuation instrumentation while in reactor operational MODES 5 and 6 except during core alterations and fuel movement. The Probabilistic Safety Assessment Branch (SPSB) has completed its review of the proposed TS changes for the radiological aspect and is forwarding the attached safety evaluation concerning potential radiological consequences.

The licensee addressed the offsite and control room radiological consequences of a gas decay tank (GDT) rupture while in MODES 5 and 6 except during core alterations and fuel movement. The licensee assumed, and we agree 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 lnleakage rate into the control room is irrelevant. On the basis of our review, we find that the dose at exclusion area boundary resulting from a GDT rupture is less than 0.5 rem whole body and control room operator dose is within GDC 19 dose criterion. Therefore, we find the ITS change requests are acceptable.

The attached safety evaluation completes our effort on TAC No. MA9529, and this review was performed by Jay Lee (415-1080) of SPSB.

Attachment: As stated

CONTACT: Jay Lee, SPSB/DSSA/NRR
415-1080

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
ROCHESTER GAS AND ELECTRIC CORPORATION
R.E. GINNA NUCLEAR POWER PLANT
DOCKET NO. 50-244

1 INTRODUCTION

By letter dated July 21, 2000, Rochester Gas and Electric corporation, the licensee for Ginna Nuclear Power Plant, requested an amendment to the Ginna Improved Technical Specifications (ITSs). This request for change in the ITS would remove the requirements for control room emergency air treatment system (CREATR) actuation instrumentation and the CREATS from applicability during plant MODES 5 and 6 except during core alterations and fuel movement.

Specifically, the licensee requested that:

- Section 3.3.6, "Control Room Emergency Air Treatment System Actuation Instrumentation," and its corresponding BASES 3.3.6 be amended to remove the reference to MODES 5 and 6, and to add a reference to CORE ALTERATIONS.

- Section 3.7.9, "Control Room Emergency Air Treatment System," and its corresponding BASES 3.7.9 be amended to remove the reference to MODES 5 and 6, and to add a reference to CORE ALTERATIONS.

2 EVALUATION

A gas decay tank (GDT) rupture is only design-basis accident at Ginna that postulated to occur during plant MODES 5 and 6 except during core alterations and fuel movement. The GDTs contain the radioactive gases vented from various plant systems during normal plant operation. A total of four GDTs with 470 ft^3 storage capacity each is provided to store for 45 days prior to 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.

Attachment

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 be still within the dose recommended in NUREG-01333 and that the radiological consequence to the control room operator will be still within the dose criteria specified in General Design Criterion (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 lnleakage 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.

3 CONCLUSION

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 [(1)]
Control Room	
Whole-Body	<0.1
Skin	0.66
Dose Acceptance Criteria [(2)]	5 (Whole-Body) 30 (Skin)

[1] NUREG-01333
[2] Standard Review Plan

Table 2

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

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