2005

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

TABLE OF CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

This Annual Radioactive Effluent Release Report is for the R.E. Ginna Nuclear Power Plant and is submitted in accordance with the requirements of Technical Specification Section 5.6.3. The report covers the period from January 1, 2005 through December 31, 2005.

This report includes a summary of the quantities of radioactive gaseous and liquid effluents and solid waste released from the plant presented in the format outlined in Appendix B of Regulatory Guide 1.21, Revision 1, June 1974.

All gaseous and liquid effluents discharged during this reporting period were in compliance with the limits of the R.E. Ginna Technical Specifications as defined in the Offsite Dose Calculation Manual (ODCM).

2.0 SUPPLEMENTAL INFORMATION

2.1 Regulatory Limits

The ODCM limits applicable to the release of radioactive material in liquid and gaseous effluents are:

2.1.1 Fission and Activation Gases

The instantaneous dose rate, as calculated in the ODCM, due to noble gases released in gaseous effluents from the site shall be limited to a release rate which would yield $\leq$ 500 mrem/yr to the total body and $\leq$ 3000 mrem/yr to the skin if allowed to continue for a full year.

The air dose, as calculated in the ODCM, due to noble gases released in gaseous effluents from the site shall be limited to the following:

(I) During any calendar quarter to $\leq$ 5 mrad for gamma radiation and to $\leq$ 10 mrad for beta radiation.

(ii) During any calendar year to $\leq$ 10 mrad for gamma radiation and to $\leq$ 20 mrad for beta radiation.

2.1.2 Radioiodine, Tritium and Particulates

The instantaneous dose rate, as calculated in the ODCM, due to radioactive materials released in gaseous effluents from the site as radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half-lives greater than 8 days shall be limited to a release rate which would yield ≤ 1500 mrem/yr to any organ if allowed to continue for a full year.

The dose to an individual, as calculated in the ODCM, from radioiodine, radioactive materials in particulate form and radionuclides other than noble gases with half-lives greater than eight days released with gaseous effluents from the site shall be limited to the following:

(i) During any calendar quarter to ≤ 7.5 mrem to any organ.

(ii) During any calendar year to ≤ 15 mrem to any organ.

2.1.3 Liquid Effluents

The release of radioactive liquid effluents shall be such that the concentration in the circulating water discharge does not exceed the limits specified in accordance with Appendix B, Table II, Column 2 and notes thereto of 10CFR20, as explained in Section 1 of the ODCM. For dissolved or entrained noble gases the total activity due to dissolved or entrained noble gases shall not exceed 2E-04 uCi/ml.

The dose or dose commitment to an individual as calculated in the ODCM from radioactive materials in liquid effluents released to unrestricted areas shall be limited:

(i) During any calendar quarter to < 1.5 mrem to the total body and to < 5 mrem to any organ, and

(ii) During any calendar year to < 3 mrem to the total body and to < 10 mrem to any organ.

2.2 Effluent Concentration Limit (ECL)

2.2.1 For gaseous effluents, effluent concentration limits are not directly used in release rate calculations since the applicable limits are stated in terms of dose rate at the unrestricted area boundary, in accordance with Technical Specification 5.5.4.g.

2.2.2 For liquid effluents, ten times the effluent concentration values specified in 10CFR20, Appendix B, Table II, column 2, are used to calculate release rates and permissible concentrations at the unrestricted area boundary as permitted by Technical Specification 5.5.4.b. A value of 2E-04 uCi/ml is used as the ECL for dissolved and entrained noble gases in liquid effluents.

2.3 Release Rate Limits Based on Average Nuclide Energy

The release rate limits for fission and activation gases from the R.E. Ginna Nuclear Power Plant are not based on the average energy of the radionuclide mixture in gaseous effluents; therefore, this value is not applicable. However the 2005 average beta/gamma energy of the radionuclide mixture in fission and activation gases released from Ginna is available for review upon request.

2.4 Measurements and Approximations of Total Radioactivity

Gamma spectroscopy was the primary analysis method used to determine the radionuclide composition and concentration of gaseous and liquid effluents. Composite samples were analyzed for Sr-89, Sr-90 and Fe-55 by a contract laboratory. Tritium and alpha analysis were performed using liquid scintillation and gas flow proportional counting respectively.

The total radioactivity in effluent releases was determined from the measured concentration of each radionuclide present and the total volume of effluents released.

2.5 Batch Releases

2.5.1 Liquid

1. Number of batch releases:	9.9 E+01
2. Total time period for batch releases:	1.71 E+05 min
3. Maximum time period for a batch release:	4.83 E+04 min
4. Average time period for batch releases:	1.72 E+03 min
5. Minimum time period for a batch release:	4.0 E+01 min
6. Average blowdown (LPM) during periods of effluent release into the discharge canal.	4.87 E+02 LPM

2.5.2 Gaseous

1. Number of batch releases:	3.3 E+01
2. Total time period for batch releases:	5.11 E+05 min
3. Maximum time period for a batch release:	4.46 E+04 min
4. Average time period for batch releases:	1.55 E+04 min
5. Minimum time period for a batch release:	1.08 E+02 min

2.6 Abnormal Releases

There were no abnormal or unplanned releases in 2005. Examples of ventilation system deficiencies that could result in small quantities of air exiting controlled areas by pathways other than monitored vent exhaust have been documented by the corrective action process. Sampling did not result in any measured radioactivity. Gaseous release permit methodology is conservative against small deviations in flow direction, if activity were present.

3.0 SUMMARY OF GASEOUS RADIOACTIVE EFFLUENTS

The quantities of radioactive material released in gaseous effluents are summarized in tables 1A and 1B. Plant Vent and Containment Vent releases are modeled as mixed mode and Air Ejector is modeled as ground level release. In 2005, Ginna revised gaseous release procedures to remove the unrealistically conservative step of including sample activity that was less than the Minimum Detectable Activity, MDA, (which is the calculated *a posteriori* LLD for each sample counted), as if it were actually a measured value. This conservatism had been included in procedures years ago to account for sample purges and valve leaks which have since been demonstrated to be dramatically lower than the conservative estimate. Any leaks or purges with measurable activity are now included in release permits by integration of RMS data. This change has resulted in lower total reported activity in gaseous effluents for 2005 as compared to previous years.

4.0 SUMMARY OF LIQUID RADIOACTIVE EFFLUENTS

The quantities of radioactive material released in liquid effluents are summarized in tables 2A and 2B.

5.0 SOLID WASTE

The quantities of radioactive material released in shipments of solid waste transported from the site during the reporting period are summarized in Table 3. Principal nuclides were determined by gamma spectroscopy and non-gamma emitters were calculated from scaling factors determined by an independent laboratory from representative samples of that waste type. The majority of Dry Active Waste is processed utilizing an off-site processor who reduces the volume and then sends the waste for burial.

6.0 LOWER LIMIT OF DETECTION

The required Lower Limit of Detection, (LLD), as defined in the ODCM, was met for all samples used in reporting effluent releases for 2005.

The following samples failed to meet the *a posteriori* MDA for high background activity in the samples.

"A" Monitor Tank release #2005014, 2/9/05:
Cs-137 5.57E-7 uCi/mL

"A" Monitor Tank release #2005017, 2/12/05:
Cs-137 7.87E-7 uCi/mL, Fe-59 6.17E-7 uCi/mL, Zn-65 6.13E-7 uCi/mL

"A" Monitor Tank rlease #2005018, 2/14/05:
Cs-137 1.12E-6 uCi/mL, Cs-134 5.42E-7 uCi/mL, Fe-59 9.65E-7 uCi/mL, Zn-65 9.09E-7 uCi/mL

"A" Monitor Tank release #2005027, 2/23/05:
Cs-137 7.12E-7 uCi/mL, Fe-59 5.17E-7 uCi/mL, Zn-65 5.39E-7 uCi/mL

7.0 RADIOLOGICAL IMPACT

An assessment of doses to the maximally exposed individual from gaseous and liquid effluents was performed for locations representing the maximum calculated dose in occupied sectors. Meteorological sectors from WNW through ENE are entirely over Lake Ontario. In all cases, doses were well below Technical Specification limits as defined in the ODCM. Doses were assessed based upon historical meteorological conditions considering the noble gas exposure, inhalation, ground plane exposure, and ingestion pathways. The ingestion pathways considered were the fruit, vegetable, fish, drinking water, goat's milk, cow's milk and cow meat pathways. Results of this assessment are presented in Tables 4A and 4B. Since the events of September 11, 2001, Ginna Security has been augmented by full-time presence of the New York State Police and the New York National Guard. These personnel have posts within the site boundary. For this reason, the exposure and uptake pathways for 2005 are calculated using maximum meteorological dispersion and deposition parameters at on-site posts, as well as at the site boundary.

7.1 Total Dose

40CFR190 limits the total dose to members of the public due to radiation and radioactivity from uranium fuel cycle sources to:

<25 mrem total body or any organ and;
<75 mrem thyroid for a calendar year.

Using the maximum exposure and uptake pathways, the maximum liquid pathways, and the direct radiation measurements onsite in the vicinity of the National Guard outpost, yield the following dose summaries to the hypothetical maximally exposed individual member of the public on-site.

7.6 mrem total body (7.6 mrem direct radiation plus 6.32E-3 mrem all other pathways).
6.14E-3 mrem thyroid (maximum organ dose).

Using the maximum exposure and uptake pathways, the maximum liquid pathways, and the maximum direct radiation measurements at the site boundary, yields the following dose summaries to the hypothetical maximally exposed individual member of the public off-site. This dose conservatively bounds any real member of the public.

5.2 mrem total body (5.2 mrem direct radiation plus 6.32E-3 mrem all other pathways).
6.14E-3 mrem thyroid, maximum organ dose.

8.0 METEOROLOGICAL DATA

The annual summary of hourly meteorological data collected during 2005 is not included with this report, but can be made available at the R. E. Ginna Nuclear Power Plant.

9.0 LAND USE CENSUS CHANGES

There were no changes in critical receptor location for dose calculations during the reporting period. There were no large changes in land use within 5 miles of the plant. Additional new homes are being built at an increasing rate compared to past years.

10.0 CHANGES TO THE OFFSITE DOSE CALCULATION MANUAL

The ODCM was revised March 29, 2005, to allow selected liquid and gaseous effluent monitors to be removed from service for short periods of time for monthly/quarterly testing without being declared inoperable, and to provide a replacement control sample point on Lake Ontario. No major changes were made to requirements or to methodology used in calculation of offsite dose. See attached ODCM, Revision 20.

11.0 CHANGES TO THE PROCESS CONTROL PROGRAM

There were no changes to the Process Control Program during the reporting period.

12.0 MAJOR CHANGES TO RADWASTE TREATMENT SYSTEMS

There were no major changes to the Radwaste Treatment Systems during the reporting period. However, a major effort to reconfigure and optimize the Liquid Radwaste Treatment System was undertaken by Engineering in 2005. Improvements in procedures for processing water are in place and reductions in effluent activity have been achieved.

13.0 INOPERABLE MONITORS

- RM-15A, Out of service for water trap repair, 10/4/05 – 10/11/05.
- R-10B, Out of service for failed source check, 2/11/05 – 2/24/05
- R-10B skid out of service for high sample flow, 8/5/05 – 9/3/05.
- R-13 out of service for high sample flow, 8/13/05 – 8/25/05.

14.0 CHANGES TO PREVIOUS ANNUAL EFFLUENT OPERATING REPORTS

None

Table 1A

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES
January - June 2005

	Unit	Quarter 1st	Quarter 2nd	Est. Total Error, %
A. Fission & activation gases				
1. Total release	Ci	4.40E+00	2.30E-01	1.50E+01
2. Average release rate for period	uCi/sec	5.85E-01	3.05E-02	
3. Percent of technical specification limit	%	9.29E-05	4.84E-06	
B. Iodines				
1. Total iodine-131	Ci	6.69E-06		1.50E+01
2. Average release rate for period	uCi/sec	8.90E-07		
3. Percent of technical specification limit	%	1.93E-03		
C. Particulates				
1. Particulates with half-lives > 8days	Ci			
2. Average release rate for period	uCi/sec			
3. Percent of technical specification limit	%			
4. Gross alpha radioactivity	Ci			
D. Tritium				
1. Total release	Ci	1.32E+01	1.01E+01	9.20E+00
2. Average release rate for period	uCi/sec	1.76E+00	4.36E-01	
3. Percent of technical specification limit	%	2.07E-02	1.71E-02	

Note: Isotope for which no value is given were not identified in applicable releases.

R. E. Ginna Nuclear Power Plant

Table 1A

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES
July - December 2005

A. Fission & activation gases	Unit	Quarter 3rd	Quarter 4th	Est. Total Error, %
1. Total release	Ci	9.38E-02	1.03E-01	1.50E+01
2. Average release rate for period	uCi/sec	1.24E-02	1.36E-02	
3. Percent of technical specification limit	%	1.97E-06	2.16E-06	
B. Iodines				
1. Total iodine-131	Ci			
2. Average release rate for period	uCi/sec			
3. Percent of technical specification limit	%			
C. Particulates				
1. Particulates with half-lives > 8days	Ci		9.37E-10	2.00E+01
2. Average release rate for period	uCi/sec		1.26E-10	
3. Percent of technical specification limit	%		1.19E-08	
4. Gross alpha radioactivity	Ci			
D. Tritium				
1. Total release	Ci	1.68E+01	1.67E+01	9.20E+00
2. Average release rate for period	uCi/sec	2.22E+00	2.21E+00	
3. Percent of technical specification limit	%	2.67E-02	2.66E-02	

Note: Isotope for which no value is given were not identified in applicable releases.

Table 2A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES
January - June 2005

A. Fission and activation products	Unit	Quarter 1st	Quarter 2nd	Est.Total Error, %
1. Total release (not including tritium, gases, alpha)	Ci	3.43E-03	5.83E-04	9.90E+00
2. Average diluted concentration during period	uCi/ml	9.20E-12	1.02E-12	
3. Percent of applicable limit	%	7.67E-05	8.50E-06	
B. Tritium				
1. Total release	Ci	1.36E+02	2.97E+01	9.20E+00
2. Average diluted concentration during period	uCi/ml	3.65E-07	5.22E-08	
3. Percent of applicable limit	%	3.65E-03	5.22E-04	
C. Dissolved and entrained gases				
1. Total release	Ci	2.53E-04	2.88E-05	9.90E+00
2. Average diluted concentration during period	uCi/ml	6.78E-13	5.05E-14	
3. Percent of applicable limit	%	3.39E-07	2.53E-08	
D. Gross alpha radioactivity				
1. Total release	Ci			
E. Vol. of waste released (prior to dilution)	Liters	8.06E+07	8.25E+07	
F. Vol. of dilution water used during period	Liters	3.74E+11	5.68E+11	

Note: Isotope for which no value is given were not identified in applicable releases.

Table 2A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES
July - December 2005

A. Fission and activation products	Unit	Quarter 3rd	Quarter 4th	Est.Total Error, %
1. Total release (not including tritium, gases, alpha)	Ci	2.36E-04	2.83E-04	9.90E+00
2. Average diluted concentration during period	uCi/ml	5.02E-13	5.82E-13	
3. Percent of applicable limit	%	4.18E-06	4.85E-06	
B. Tritium				
1. Total release	Ci	6.11E+01	3.32E+01	9.20E+00
2. Average diluted concentration during period	uCi/ml	1.30E-07	6.28E-08	
3. Percent of applicable limit	%	1.39E-03	6.28E-04	
C. Dissolved and entrained gases				
1. Total release	Ci	2.97E-04		9.90E+00
2. Average diluted concentration during period	uCi/ml	6.32E-13		
3. Percent of applicable limit	%	3.16E-07		
D. Gross alpha radioactivity				
1. Total release	Ci			
E. Vol. of waste released (prior ro dilution)	Liters	9.80E+07	1.06E+08	
F. Vol. of dilution water used during period	Liters	4.69E+11	4.84E+11	

Note: Isotope for which no value is given were not identified in applicable releases.

Table 1B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS - CONTINUOUS AND BATCH RELEASES
January - June 2005

		Continuous Mode		Batch Mode	
Nuclides released	Unit	Quarter	Quarter	Quarter	Quarter
		1st	2nd	1st	2nd
1. Fission gases					
argon-41	Ci	3.73E-02		2.88E-01	5.40E-02
krypton-85	Ci				
krypton-85m	Ci	1.29E-03		1.65E-04	
krypton-87	Ci				
krypton-88	Ci	2.20E-03			
xenon-131m	Ci			5.73E-03	
xenon-133	Ci	2.76E+00		1.03E+00	1.68E-01
xenon-133m	Ci			1.26E-02	7.12E-04
xenon-135	Ci	2.04E-01		2.19E-02	6.62E-03
xenon-135m	Ci	3.01E-02			
xenon-138	Ci				
others (specify)	Ci				
	Ci				
	Ci				
	Ci				
Total for period	Ci				
2. Iodines					
iodine-131	Ci	5.09E-06		2.34E-07	
iodine-132	Ci			9.78E-07	
iodine-133	Ci			2.50E-07	
Total for period	Ci			1.60E-06	
iodine-135	Ci			1.40E-07	
3. Particulates					
strontium-89	Ci				
strontium-90	Ci				
cesium-134	Ci				
cesium-137	Ci				
niobium-95	Ci				
cobalt-58	Ci				
cobalt-60	Ci				
Total for period	Ci				
unidentified	Ci				

Note: Isotope for which no value is given were not identified in applicable releases.

Table 1B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS - CONTINUOUS AND BATCH RELEASES
July - December 2005

		Continuous Mode		Batch Mode	
Nuclides released	Unit	Quarter	Quarter	Quarter	Quarter
		3rd	4th	3rd	4th
1. Fission gases					
argon-41	Ci			5.14E-02	4.85E-02
krypton-85	Ci				
krypton-85m	Ci				
krypton-87	Ci				
krypton-88	Ci				
xenon-131m	Ci				
xenon-133	Ci			4.18E-02	5.98E-02
xenon-133m	Ci				
xenon-135	Ci			4.07E-03	5.42E-02
xenon-135m	Ci				
xenon-138	Ci				
others (specify)	Ci				
	Ci				
	Ci				
	Ci				
Total for period	Ci				
2. Iodines					
iodine-131	Ci				
iodine-133	Ci				
iodine-135	Ci				
Total for period	Ci				
3. Particulates					
strontium-89	Ci		9.37E-10		
strontium-90	Ci				
zirconium-95	Ci				
silver-110m	Ci				
niobium-95	Ci				
cobalt-58	Ci				
cobalt-60	Ci				
Total for period	Ci				
unidentified	Ci				

Note: Isotope for which no value is given were not identified in applicable releases.

Table 2B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS
January - June 2005

		Continuous Mode		Batch Mode	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
		1st	2nd	1st	2nd
chromium-51	Ci				
manganese-54	Ci			5.66E-06	
iron-55	Ci				
iron-59	Ci				
cobalt-58	Ci			2.27E-03	2.22E-04
cobalt-60	Ci			7.32E-04	1.21E-05
zinc-65	Ci				
strontium-89	Ci				
strontium-90	Ci				
zirconium/niobium-95	Ci			1.03E-05	
molybdenum-99	Ci				
silver-110m	Ci			6.74E-05	
antimony-122	Ci				
antimony-124	Ci				
antimony-125	Ci			3.28E-05	8.51E-06
iodine-131	Ci				
iodine-132	Ci			1.50E-04	2.44E-04
iodine-135	Ci				
cesium-134	Ci				
cesium-136	Ci				
cesium-137	Ci				
barium/lanthanum-140	Ci				
cerium-141	Ci				
Te-132	Ci			1.40E-04	1.04E-04
Sn-113	Ci				
Co-57	Ci			3.03E-05	
Total for period (above)	Ci				
unidentified	Ci				

xenon-133	Ci			2.53E-04	2.00E-05
xenon-135	Ci				8.73E-06

Note: Isotope for which no value is given were not identified in applicable releases.

Table 2B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS
July - December 2005

		Continuous Mode		Batch Mode	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
		3rd	4th	3rd	4th
chromium-51	Ci				
manganese-54	Ci				
iron-55	Ci			2.45E-04	1.01E-04
iron-59	Ci				
cobalt-58	Ci			2.04E-04	1.26E-04
cobalt-60	Ci			3.19E-05	1.38E-04
zinc-65	Ci				
strontium-89	Ci				
strontium-90	Ci				
niobium-95	Ci				
molybdenum-99	Ci				
silver-110m	Ci				1.21E-05
antimony-122	Ci				
antimony-124	Ci				
antimony-125	Ci				
iodine-131	Ci				
iodine-132	Ci				
iodine-135	Ci				
cesium-134	Ci				
cesium-136	Ci				
cesium-137	Ci				
barium/lanthanum-140	Ci				
cerium-141	Ci				
Te-132	Ci				
Zr-95	Ci				
Co-57	Ci				3.36E-06
Total for period (above)	Ci				
unidentified	Ci				

xenon-133	Ci			2.79E-04	5.01E-06
xenon-135	Ci			1.86E-05	

Note: Isotope for which no value is given were not identified in applicable releases.

Table 3
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
January 1, 2005 - December 31, 2005

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL - (Not irradiated fuel)

1. Type of waste	Unit	12 month period	Est. total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3 Ci	5.88 0.607	7.0 E+00 1.4 E+01
b. Dry compressible waste, contaminated equip, etc.	m^3 Ci	33.02 0.268	7.0 E+00 1.4 E+01
c. Irradiated components, control rods, etc.	m^3 Ci	N/A N/A	N/A N/A
d. Other:	m^3 Ci	N/A N/A	N/A N/A

2.Estimate of major nuclide composition (by type of waste)

a.			b.			d. (None)		
Co-58	%	48.27	Fe-55	%	28.26		%	
Ni-63	%	12.77	Co-58	%	19.88		%	
Co-60	%	7.31	Ni-63	%	17.19		%	
Cs-137	%	3.56	Cr-51	%	9.82		%	
Fe-55	%	3.38	Co-60	%	9.34		%	
Sb-125	%	2.39	Ni-95	%	5.46		%	
Cr-51	%	1.17	Zr-95	%	4.31		%	
Ce-144	%	0.45	Ag-110m	%	2.79		%	
Mn-54	%	0.82	Cs-137	%	0.55		%	
Ag-110m	%	0.76	Sb-125	%	0.53		%	
H-3	%	16.64	H-3	%	0.12		%	
Total		96.84	Total		98.25	Total		0

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
2	Sole Use Truck	RACE, TN
1	Sole Use Truck	Duratek, TN
1	Sole Use Truck	Barnwell, SC

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None		

Table 4A

Radiation Dose to Maximum Individual Receptor

First Quarter 2005

(Units In rem)

	All	All	Adult	Teen	Child	Infant
	Noble Gas	Noble Gas	Thyroid	Thyroid	Thyroid	Thyroid
	Air Gamma	Air Beta				
N	1.89E-08	3.58E-08				
NNE	1.60E-08	3.04E-08				
NE	1.84E-08	3.50E-08				
ENE	2.39E-08	4.53E-08				
E	4.27E-08	8.11E-08	6.01E-07	7.11E-07	1.08E-06	1.19E-06
ESE	5.43E-08	1.03E-07	8.70E-07	1.03E-06	1.57E-06	1.73E-06
SE	3.28E-08	6.23E-08	4.86E-07	5.76E-07	8.78E-07	9.76E-07
SSE	1.35E-08	2.56E-08	1.64E-07	1.94E-07	2.97E-07	3.27E-07
S	2.36E-08	4.49E-08	2.61E-07	2.99E-07	4.55E-07	5.02E-07
SSW	2.26E-08	4.39E-08	3.02E-07	3.57E-07	5.45E-07	6.01E-07
SW	2.33E-08	4.44E-08	3.38E-07	4.01E-07	6.11E-07	6.73E-07
WSW	2.52E-08	4.79E-08	2.59E-07	3.07E-07	4.68E-07	5.16E-07
W	1.59E-08	3.04E-08	1.21E-07	1.43E-07	2.18E-07	2.40E-07
WNW	1.35E-09	2.57E-09				
NW	4.45E-09	8.44E-09				
NNW	1.39E-08	2.63E-08				
MAX.	5.43E-08	1.03E-07	8.70E-07	1.03E-06	1.57E-06	1.73E-06

R. E. Ginna Nuclear Power Plant

Table 4A

Radiation Dose to Maximum Individual Receptor

Second Quarter 2005

(Units In rem)

	All	All	Adult	Teen	Child	Infant
	Noble Gas	Noble Gas	Thyroid	Thyroid	Thyroid	Thyroid
	Air Gamma	Air Beta				
N	1.54E-09	9.95E-10				
NNE	1.31E-09	8.44E-10				
NE	1.51E-09	9.72E-10				
ENE	1.95E-09	1.25E-09				
E	3.48E-09	2.25E-09	2.59E-07	2.84E-07	3.90E-07	1.70E-07
ESE	4.43E-09	2.86E-09	3.76E-07	4.11E-07	5.65E-07	2.47E-07
SE	2.66E-09	1.73E-09	2.10E-07	2.30E-07	3.16E-07	1.38E-07
SSE	1.10E-09	7.12E-10	7.07E-08	7.73E-08	1.06E-07	4.64E-08
S	1.93E-09	1.25E-09	1.09E-07	1.19E-07	1.64E-07	7.16E-08
SSW	1.86E-09	1.20E-09	1.30E-07	1.43E-07	1.96E-07	8.57E-08
SW	1.90E-09	1.23E-09	1.46E-07	1.60E-07	2.20E-07	9.61E-08
WSW	2.06E-09	1.33E-09	1.12E-07	1.22E-07	1.68E-07	7.36E-08
W	1.31E-09	8.47E-10	4.58E-08	5.30E-08	7.29E-08	3.19E-08
WNW	1.11E-10	7.15E-10				
NW	3.63E-10	2.35E-10				
NNW	1.13E-09	7.32E-10				
MAX.	4.43E-09	2.86E-09	3.76E-07	4.11E-07	5.65E-07	2.47E-07

R. E. Ginna Nuclear Power Plant

Table 4A						
Radiation Dose to Maximum Individual Receptor						
Third Quarter 2005						
(Units In rem)						
	All	All	Adult	Teen	Child	Infant
	Noble Gas	Noble Gas	Thyroid	Thyroid	Thyroid	Thyroid
	Air Gamma	Air Beta				
N	1.33E-09	5.74E-10				
NNE	1.12E-09	4.87E-10				
NE	1.30E-09	5.61E-10				
ENE	1.68E-09	7.26E-10				
E	2.99E-09	1.30E-09	4.13E-07	4.52E-07	6.20E-07	2.71E-07
ESE	3.81E-09	1.65E-09	5.98E-07	6.55E-07	8.99E-07	3.93E-07
SE	2.31E-09	9.98E-10	3.34E-07	3.66E-07	5.03E-07	2.20E-07
SSE	9.49E-10	4.19E-10	1.06E-07	1.17E-07	1.60E-07	7.20E-08
S	1.66E-09	7.29E-10	1.73E-07	1.90E-07	2.61E-07	1.14E-07
SSW	1.60E-09	6.93E-10	2.08E-07	2.27E-07	3.12E-07	1.36E-07
SW	1.64E-09	7.10E-10	2.33E-07	2.55E-07	3.50E-07	1.53E-07
WSW	1.77E-09	7.67E-10	1.78E-07	1.95E-07	2.68E-07	1.17E-07
W	1.13E-09	4.91E-10	7.71E-08	8.45E-08	1.16E-07	5.07E-08
WNW	9.53E-11	4.13E-11				
NW	3.12E-10	1.35E-10				
NNW	9.73E-10	4.22E-10				
MAX.	3.81E-09	1.65E-09	5.98E-07	6.55E-07	8.99E-07	3.93E-07
Page			20			

R. E. Ginna Nuclear Power Plant

Table 4A						
Radiation Dose to Maximum Individual Receptor						
Fourth Quarter 2005						
(Units In rem)						
	All	All	Adult	Teen	Child	Infant
	Noble Gas	Noble Gas	Thyroid	Thyroid	Thyroid	Thyroid
	Air Gamma	Air Beta				
N	1.26E-09	5.85E-10				
NNE	1.07E-09	4.96E-10				
NE	1.23E-09	5.71E-10				
ENE	1.60E-09	7.39E-10				
E	2.85E-09	1.32E-09	4.12E-07	4.52E-07	6.90E-07	2.70E-07
ESE	3.63E-09	1.68E-09	5.97E-07	6.55E-07	8.97E-07	3.92E-07
SE	2.20E-09	1.02E-09	3.34E-07	3.66E-07	5.01E-07	2.19E-07
SSE	9.04E-10	4.18E-10	1.06E-07	1.17E-07	1.60E-07	6.98E-08
S	1.58E-09	7.32E-10	1.73E-07	1.90E-07	2.60E-07	1.14E-07
SSW	1.52E-09	7.06E-10	2.07E-07	2.27E-07	3.11E-07	1.36E-07
SW	1.56E-09	7.22E-10	2.32E-07	2.55E-07	3.49E-07	1.52E-07
WSW	1.69E-09	7.81E-10	1.78E-07	1.95E-07	2.67E-07	1.17E-07
W	1.07E-09	4.97E-10	7.70E-08	8.45E-08	1.16E-07	5.06E-08
WNW	1.05E-10	4.70E-11				
NW	2.98E-10	1.38E-10				
NNW	9.29E-10	4.30E-10				
MAX.	3.63E-09	1.68E-09	5.97E-07	6.55E-07	8.97E-07	3.92E-07
Page			21			

R. E. Ginna Nuclear Power Plant

Table 4B

Radiation Dose To Maximum Individual Receptor

From Liquid Release

2005

(Units in rem)

	Adult	Teen	Child	Infant
First Quarter				
T. Body	1.13E-06	7.95E-07	1.50E-06	1.45E-06
Bone	1.16E-09	1.20E-09	1.97E-09	6.15E-10
Thyroid	1.12E-06	7.90E-07	1.49E-06	1.44E-06
Second Quarter				
T. Body	1.83E-07	1.29E-07	2.43E-07	2.36E-07
Bone	1.52E-10	1.60E-10	2.21E-10	<1.00E-10
Thyroid	1.83E-07	1.29E-07	2.43E-07	2.36E-07
Third Quarter				
T. Body	3.55E-07	2.51E-07	4.73E-07	4.59E-07
Bone	1.41E-10	1.45E-10	2.50E-10	<1.0E-10
Thyroid	3.54E-07	2.50E-07	4.71E-07	4.59E-07
Fourth Quarter				
T. Body	2.07E-07	1.46E-07	2.75E-07	2.67E-07
Bone	<1.00E-10	<1.00E-10	<1.00E-10	<1.00E-10
Thyroid	2.05E-07	1.45E-07	2.73E-07	2.67E-07