



**BOSTON EDISON**

Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

E. Thomas Boulette, PhD  
Vice President Nuclear Operations  
and Station Director

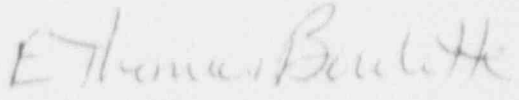
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The enclosed "Annual Dose Assessment to the General Public from Radioactive Effluents for 1991", is submitted in accordance with Pilgrim Nuclear Power Station Technical Specification 6.9.C.1.a.

Please do not hesitate to contact me if there are any questions regarding this report.

  
E. Thomas Boulette

WJM/bal

Attachment

cc: Mr. Thomas T. Martin  
Regional Administrator, Region 1  
U.S. Nuclear Regulatory Commission  
475 Allendale Rd.  
King of Prussia, PA 19406

Mr. S. B. Eaton  
Div. of Reactor Projects I/II  
Office of NRR - USNRC  
One White Flint North - Mail Stop 1401  
11555 Rockville Pike  
Rockville, MD 20852

Senior Resident Inspector - Pilgrim Nuclear Power Station

9204010187 911231  
PDR ADOCK 05000293  
R PDR

TEH 8 1/1

# PILGRIM NUCLEAR POWER STATION

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Annual Dose Assessment  
to the  
General Public  
from  
Radioactive Effluents

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January 1 through December 31, 1991



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January 1 through December 31, 1991




BOSTON EDISON COMPANY

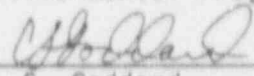
PILGRIM NUCLEAR POWER STATION  
ANNUAL DOSE ASSESSMENT TO THE GENERAL PUBLIC  
FROM RADIOACTIVE EFFLUENTS

January 1 through December 31, 1991

Prepared by:

  
K. J. Sejkora  
Environmental Program Manager

Approved by:

  
C. S. Goddard  
Chemistry and Radwaste Manager

Approved by:

  
L. E. Wetherell  
Radiological Section Manager

ID #1531



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## EXECUTIVE SUMMARY

### Pilgrim Nuclear Power Station Annual Dose Assessment To The General Public From Radioactive Effluents January 1 Through December 31, 1991

#### Introduction

This report quantifies the dose impact to the general public from the operation of Pilgrim Nuclear Power Station (PNPS) during the period of January 1 through December 31, 1991. The information presented in this report is prepared under Technical Specification 6.9.C.1.a as supplemental information to radioactive effluent release data submitted on a semiannual basis in accordance with NRC Regulatory Guide 1.21.

This report contains an assessment of radiological impact on humans resulting from releases of radioactivity in liquid and gaseous effluents and direct radiation exposure. Doses from radioactive effluents to a maximum exposed hypothetical individual were calculated for all major exposure pathways. In addition to maximum individual doses, cumulative population doses and average individual doses were calculated from the effluent release information. Direct radiation exposures as measured with environmental thermoluminescent dosimeters (TLDs) were also assessed.

The maximum individual doses calculated were used to determine the percent of Technical Specifications limit or objective which the doses represented. Liquid Effluent concentrations were also used to determine percent of Technical Specification concentration limits. These percentage values are the final supplemental data necessary to complete the two semiannual Radioactive Effluent and Waste Disposal Reports prepared during the reporting period.

#### Radiological Impact on humans

The release of radioactivity in liquid effluents from PNPS during 1991 resulted in a total body dose of about 0.002 mrem to the maximum-exposed hypothetical individual. The maximum hypothetical dose to any organ from liquid effluents was about 0.003 mrem. The total body dose from liquid effluents to the entire population within 50 miles of PNPS was about 0.02 person-rem. The average individual living within 50 miles of PNPS received a total body dose of less than 0.000004 mrem from liquid effluents released during 1991.

The release of radioactivity in gaseous effluents from PNPS during 1991 resulted in a total body dose to the maximum-exposed hypothetical individual of about 0.2 mrem from radioactive particulates, iodines and tritium. The maximum hypothetical dose to any organ from radioactive particulates, iodines and tritium was about 2.6 mrem. Noble gases released in gaseous effluents resulted in a maximum total body dose of 0.3 mrem, with a corresponding skin dose of 1.2 mrem. All of these maximum doses occurred to a hypothetical individual located on property under Boston Edison's (BECO) control. The maximum, hypothetical total body dose from the release of radioactivity in gaseous effluents was 0.5 mrem. The total body dose from gaseous effluents to the entire population within 50 miles of PNPS was about 1.6 person-rem. The average individual living within 50 miles of PNPS received a total body dose of less than 0.0004 mrem from gaseous effluents released during 1991.

Direct radiation exposure was evaluated to complete the assessment of radiological impact on humans. A small number of TLDs on BECo property in close proximity to the station indicated direct radiation exposure. However, the dose to a hypothetical member of the public accessing such areas on BECo property during 1991 was estimated as being less than 0.7 mrem. There was no measurable increase during 1991 in direct radiation measurements at the nearest resident to PNPS.

The collective total body dose to a maximum-exposed hypothetical individual from liquids, gases, and direct exposure resulting from PNPS operations during 1991 was calculated as being 1.2 mrem. This amount is about 0.4% of the typical dose of 300 to 400 mrem received each year by an average person from other sources of natural and man-made radiation.

#### Percent of Technical Specifications

The maximum individual doses from radioactive effluents were compared to the applicable Technical Specifications dose limits and objectives. All doses from liquid effluents were less than 0.2% of their corresponding limit or objective. In addition, all quarterly average concentrations of liquids released to Cape Cod Bay were also less than 0.2% of the corresponding limits. Maximum doses resulting from releases of particulates, iodines and tritium in gaseous effluents were less than 18% of corresponding 10CFR50 objectives. Noble gas doses were less than 7% of the corresponding 10CFR50 dose objectives.

#### Conclusion

None of the PNPS Technical Specifications limits and objectives associated with liquid and gaseous effluents were exceeded during 1991. Compliance with these limits and objectives ensured that the radiological impact from PNPS operations was kept as low as is reasonably achievable, in accordance with 10CFR50 Appendix I. Furthermore, conformance with PNPS Technical Specifications demonstrated compliance with the Environmental Protection Agency's regulations for environmental radiation under 40CFR190. Based on the dose assessment results for 1991, there was no significant impact on the general public from Pilgrim Station's operation.

## 1.0

### Maximum Individual Doses

Doses to the maximum exposed individual resulting from radionuclides in effluents released offsite were calculated using methods presented in the PNPS Offsite Dose Calculation Manual (Ref. 1), NRC Regulatory Guide 1.109 (Ref. 2), NRC Regulatory Guide 1.111 (Ref. 3) and the Pilgrim Station Unit I Appendix I Evaluation (Ref. 4). Maximum individual doses are calculated separately for: (1) liquid effluents; (2) particulates, iodines and tritium in gaseous effluents; and, (3) noble gases in gaseous effluents. Maximum consumption and use factors for various pathways from Table E-5 of the PNPS ODCM are used for calculating the doses to the maximum-exposed individual.

Information related to liquid and gaseous effluent releases are summarized in two semiannual Radioactive Effluent and Waste Disposal Reports (Ref. 5 and 6). Copies of this information are included in Appendix A of this report. These effluent release data were used as input to computer programs to calculate the resulting doses. The Yankee Atomic Electric Company "YODA"-series of computer programs was used to compile the dose contributions to the various organs in each age class from major exposure pathways (Ref. 7).

## 1.1

### Doses From Liquid Effluent Releases

Liquid effluent release data presented in Tables 2A and 2B from the semiannual effluent release reports were used as input to the Yankee Atomic "YODA" computer programs to calculate radiation doses. The maximum individual doses resulting from radionuclides released in liquid effluents are presented in Tables 1.1-1 through 1.1-5. These tables cover the individual calendar quarters and total calendar year, respectively.

Tables 1.1-1 through 1.1-5 summarize the maximum total body, skin and organ doses for the adult, teen and child age classes resulting from the major liquid exposure pathways. NRC Regulatory Guide 1.109 does not recognize the infant age class as being exposed to the liquid effluent pathways. Therefore, doses for this age class are not included in any of the tables.

Radioactivity released in liquid effluents from PNPS during 1991 resulted in a maximum total body dose (teen age class) of  $1.72\text{E-}03$  mrem. The maximum organ dose (adult age class, gastrointestinal tract/lower large intestine) was  $3.08\text{E-}03$  mrem.

Table 1.1-1

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
From Liquid Release

Period January - March 1991

Pathway	Salt Water Fish	Salt Water Shell Fish	Discharge Canal Shoreline Deposits	Ocean Shoreline	Swimming	Boating	Total
Age Class: Adult							
Bone	4.58E-05	4.60E-05	7.89E-06	1.97E-06	1.38E-08	6.89E-09	1.02E-04
Liver	5.72E-05	4.09E-05	7.89E-06	1.97E-06	1.38E-08	6.89E-09	1.08E-04
Kidney	1.65E-05	4.56E-06	7.89E-06	1.97E-06	1.38E-08	6.89E-09	3.09E-05
Lung	1.02E-05	1.46E-05	7.89E-06	1.97E-06	1.38E-08	6.89E-09	3.47E-05
GI-LLI	3.12E-05	9.91E-05	7.89E-06	1.97E-06	1.38E-08	6.89E-09	1.40E-04
Whole Body	3.53E-05	2.44E-05	7.89E-06	1.97E-06	1.38E-08	6.89E-09	6.96E-05
Thyroid	2.37E-06	4.24E-06	7.89E-06	1.97E-06	1.38E-08	6.89E-09	1.65E-05
Skin	0.00E+00	0.00E+00	9.24E-06	2.31E-06	1.71E-08	8.56E-09	1.16E-05
Age Class: Teen							
Bone	4.85E-05	4.18E-05	4.41E-05	1.10E-05	1.38E-08	6.89E-09	1.45E-04
Liver	5.96E-05	3.77E-05	4.41E-05	1.10E-05	1.38E-08	6.89E-09	1.52E-04
Kidney	1.71E-05	4.10E-06	4.41E-05	1.10E-05	1.38E-08	6.89E-09	7.63E-05
Lung	1.22E-05	1.56E-05	4.41E-05	1.10E-05	1.38E-08	6.89E-09	8.29E-05
GI-LLI	2.21E-05	6.15E-05	4.41E-05	1.10E-05	1.38E-08	6.89E-09	1.39E-04
Whole Body	2.19E-05	1.86E-05	4.41E-05	1.10E-05	1.38E-08	6.89E-09	9.56E-05
Thyroid	2.13E-06	3.44E-06	4.41E-05	1.10E-05	1.38E-08	6.89E-09	6.07E-05
Skin	0.00E+00	0.00E+00	3.16E-05	1.29E-05	1.71E-08	8.56E-09	6.45E-05
Age Class: Child							
Bone	6.15E-05	6.19E-05	9.21E-06	2.30E-06	7.68E-09	3.84E-09	1.35E-04
Liver	5.42E-05	4.10E-05	9.21E-06	2.30E-06	7.68E-09	3.84E-09	1.07E-04
Kidney	1.47E-05	4.09E-06	9.21E-06	2.30E-06	7.68E-09	3.84E-09	3.03E-05
Lung	1.02E-05	1.57E-05	9.21E-06	2.30E-06	7.68E-09	3.84E-09	3.74E-05
GI-LLI	8.04E-06	2.55E-05	9.21E-06	2.30E-06	7.68E-09	3.84E-09	4.51E-05
Whole Body	1.24E-05	2.11E-05	9.21E-06	2.30E-06	7.68E-09	3.84E-09	4.50E-05
Thyroid	2.12E-06	4.08E-06	9.21E-06	2.30E-06	7.68E-09	3.84E-09	1.77E-05
Skin	0.00E+00	0.00E+00	1.08E-05	2.70E-06	9.54E-09	4.77E-09	1.35E-05



Table 1.1-2

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
From Liquid Release

Period April - June 1991

Pathway	Salt Water Fish	Salt Water Shell Fish	Discharge Canal Shoreline Deposits	Ocean Shoreline Deposits	Swimming	Boating	Total
Age Class: Adult							
Bone	9.01E-05	2.39E-04	1.57E-05	3.92E-06	3.47E-08	1.74E-08	3.49E-04
Liver	8.91E-05	2.48E-04	1.57E-05	3.92E-06	3.47E-08	1.74E-08	3.57E-04
Kidney	1.30E-05	5.10E-05	1.57E-05	3.92E-06	3.47E-08	1.74E-08	8.37E-05
Lung	3.03E-05	8.07E-05	1.57E-05	3.92E-06	3.47E-08	1.74E-08	1.31E-04
GI-LLI	1.84E-04	5.27E-04	1.57E-05	3.92E-06	3.47E-08	1.74E-08	7.31E-04
Whole Body	3.94E-05	1.12E-04	1.57E-05	3.92E-06	3.47E-08	1.74E-08	1.71E-04
Thyroid	6.46E-07	1.35E-06	1.57E-05	3.92E-06	3.47E-08	1.74E-08	2.17E-05
Skin	0.00E+00	0.00E+00	1.84E-05	4.61E-06	3.98E-08	1.99E-08	2.31E-05
Age Class: Teen							
Bone	9.39E-05	2.15E-04	8.76E-05	2.19E-05	3.47E-08	1.74E-08	4.18E-04
Liver	9.34E-05	2.26E-04	8.76E-05	2.19E-05	3.47E-08	1.74E-08	4.29E-04
Kidney	1.31E-05	4.24E-05	8.76E-05	2.19E-05	3.47E-08	1.74E-08	1.65E-04
Lung	3.69E-05	8.60E-05	8.76E-05	2.19E-05	3.47E-08	1.74E-08	2.32E-04
GI-LLI	1.31E-04	3.30E-04	8.76E-05	2.19E-05	3.47E-08	1.74E-08	5.71E-04
Whole Body	3.45E-05	1.00E-04	8.76E-05	2.19E-05	3.47E-08	1.74E-08	2.44E-04
Thyroid	6.00E-07	1.10E-06	8.76E-05	2.19E-05	3.47E-08	1.74E-08	1.11E-04
Skin	0.00E+00	0.00E+00	1.03E-04	2.57E-05	3.98E-08	1.99E-08	1.29E-04
Age Class: Child							
Bone	1.21E-04	3.16E-04	1.83E-05	4.58E-06	1.94E-08	9.68E-09	4.60E-04
Liver	8.63E-05	2.37E-04	1.83E-05	4.58E-06	1.94E-08	9.68E-09	3.46E-04
Kidney	1.07E-05	3.83E-05	1.83E-05	4.58E-06	1.94E-08	9.68E-09	7.19E-05
Lung	3.19E-05	8.66E-05	1.83E-05	4.58E-06	1.94E-08	9.68E-09	1.41E-04
GI-LLI	4.71E-05	1.39E-04	1.83E-05	4.58E-06	1.94E-08	9.68E-09	2.09E-04
Whole Body	3.45E-05	1.30E-04	1.83E-05	4.58E-06	1.94E-08	9.68E-09	1.87E-04
Thyroid	6.16E-07	1.32E-06	1.83E-05	4.58E-06	1.94E-08	9.68E-09	2.48E-05
Skin	0.00E+00	0.00E+00	2.15E-05	5.38E-06	2.22E-08	1.11E-08	2.69E-05

Table 1.1-3

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
From Liquid Release

Period July - September 1991

Pathway	Salt Water Fish	Salt Water Shell Fish	Discharge Canal Shoreline Deposits	Ocean Shoreline	Swimming	Boating	Total
Age Class: Adult							
Bone	6.41E-04	3.69E-04	1.39E-04	3.47E-05	2.44E-07	1.22E-07	1.18E-03
Liver	9.17E-04	4.65E-04	1.39E-04	3.47E-05	2.44E-07	1.22E-07	1.56E-03
Kidney	2.91E-04	8.02E-05	1.39E-04	3.47E-05	2.44E-07	1.22E-07	5.45E-04
Lung	1.25E-04	1.01E-04	1.39E-04	3.47E-05	2.44E-07	1.22E-07	4.00E-04
GI-LLI	5.74E-04	1.90E-03	1.39E-04	3.47E-05	2.44E-07	1.22E-07	2.05E-03
Whole Body	6.08E-04	3.80E-04	1.39E-04	3.47E-05	2.44E-07	1.22E-07	1.16E-03
Thyroid	9.53E-06	4.37E-06	1.39E-04	3.47E-05	2.44E-07	1.22E-07	1.88E-04
Skin	0.00E+00	0.00E+00	1.62E-04	4.06E-05	2.95E-07	1.47E-07	2.03E-04
Age Class: Teen							
Bone	6.81E-04	3.33E-04	7.74E-04	1.94E-04	2.44E-07	1.22E-07	1.98E-03
Liver	9.50E-04	4.21E-04	7.74E-04	1.94E-04	2.44E-07	1.22E-07	2.34E-03
Kidney	3.00E-04	7.19E-05	7.74E-04	1.94E-04	2.44E-07	1.22E-07	1.34E-03
Lung	1.48E-04	1.06E-04	7.74E-04	1.94E-04	2.44E-07	1.22E-07	1.22E-03
GI-LLI	4.02E-04	1.18E-03	7.74E-04	1.94E-04	2.44E-07	1.22E-07	2.55E-03
Whole Body	3.70E-04	2.80E-04	7.74E-04	1.94E-04	2.44E-07	1.22E-07	1.62E-03
Thyroid	7.34E-06	2.97E-06	7.74E-04	1.94E-04	2.44E-07	1.22E-07	9.79E-04
Skin	0.00E+00	0.00E+00	9.07E-04	2.27E-04	2.95E-07	1.47E-07	1.13E-03
Age Class: Child							
Bone	8.56E-04	4.81E-04	1.62E-04	4.04E-05	1.36E-07	6.81E-08	1.54E-03
Liver	8.52E-04	4.38E-04	1.62E-04	4.04E-05	1.36E-07	6.81E-08	1.49E-03
Kidney	2.58E-04	7.16E-05	1.62E-04	4.04E-05	1.36E-07	6.81E-08	5.32E-04
Lung	1.20E-04	1.03E-04	1.62E-04	4.04E-05	1.36E-07	6.81E-08	4.26E-04
GI-LLI	1.44E-04	4.85E-04	1.62E-04	4.04E-05	1.36E-07	6.81E-08	8.32E-04
Whole Body	1.93E-04	2.96E-04	1.62E-04	4.04E-05	1.36E-07	6.81E-08	6.92E-04
Thyroid	6.08E-06	2.88E-06	1.62E-04	4.04E-05	1.36E-07	6.81E-08	2.12E-04
Skin	0.00E+00	0.00E+00	1.90E-04	4.74E-05	1.64E-07	8.22E-08	2.38E-04



Table 1.1-4

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
From Liquid Release

Period October - December 1991

Pathway	Salt Water Fish	Salt Water Shell Fish	Discharge Canal Shoreline Deposits	Ocean Shoreline	Swimming	Boating	Total
Age Class: Adult							
Bone	6.19E-06	1.25E-05	1.41E-06	3.53E-07	4.78E-09	2.39E-09	2.05E-05
Liver	6.63E-06	8.86E-06	1.41E-06	3.53E-07	4.78E-09	2.39E-09	1.73E-05
Kidney	1.73E-06	5.60E-07	1.41E-06	3.53E-07	4.78E-09	2.39E-09	4.06E-06
Lung	1.09E-06	3.87E-06	1.41E-06	3.53E-07	4.78E-09	2.39E-09	7.73E-06
GI-LLI	9.59E-06	3.09E-05	1.41E-06	3.53E-07	4.78E-09	2.39E-09	4.23E-05
Whole Body	3.96E-06	5.64E-06	1.41E-06	3.53E-07	4.78E-09	2.39E-09	1.14E-05
Thyroid	4.79E-07	2.14E-07	1.41E-06	3.53E-07	4.78E-09	2.39E-09	2.46E-06
Skin	0.00E+00	0.00E+00	1.66E-06	4.15E-07	5.91E-09	2.96E-09	2.08E-06
Age Class: Teen							
Bone	6.45E-06	1.11E-05	7.88E-06	1.97E-06	4.78E-09	2.39E-09	2.74E-05
Liver	6.82E-06	8.16E-06	7.88E-06	1.97E-06	4.78E-09	2.39E-09	2.48E-05
Kidney	1.67E-06	4.59E-07	7.88E-06	1.97E-06	4.78E-09	2.39E-09	1.20E-05
Lung	2.33E-06	4.06E-06	7.88E-06	1.97E-06	4.78E-09	2.39E-09	1.62E-05
GI-LLI	6.85E-06	1.94E-05	7.88E-06	1.97E-06	4.78E-09	2.39E-09	3.61E-05
Whole Body	2.95E-06	4.76E-06	7.88E-06	1.97E-06	4.78E-09	2.39E-09	1.76E-05
Thyroid	3.69E-07	1.44E-07	7.88E-06	1.97E-06	4.78E-09	2.39E-09	1.04E-05
Skin	0.00E+00	0.00E+00	9.26E-06	2.31E-06	5.91E-09	2.96E-09	1.16E-05
Age Class: Child							
Bone	8.15E-06	1.62E-05	1.65E-06	4.12E-07	2.67E-09	1.33E-09	2.64E-05
Liver	6.25E-06	8.95E-06	1.65E-06	4.12E-07	2.67E-09	1.33E-09	1.73E-05
Kidney	1.42E-06	4.50E-07	1.65E-06	4.12E-07	2.67E-09	1.33E-09	3.94E-06
Lung	1.99E-06	4.10E-06	1.65E-06	4.12E-07	2.67E-09	1.33E-09	8.16E-06
GI-LLI	2.64E-06	8.31E-06	1.65E-06	4.12E-07	2.67E-09	1.33E-09	1.30E-05
Whole Body	2.38E-06	5.94E-06	1.65E-06	4.12E-07	2.67E-09	1.33E-09	1.04E-05
Thyroid	3.05E-07	1.39E-07	1.65E-06	4.12E-07	2.67E-09	1.33E-09	2.51E-06
Skin	0.00E+00	0.00E+00	1.93E-06	4.84E-07	3.30E-09	1.65E-09	2.42E-06

Table 1.1-5

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
From Liquid Release

Period January - December 1991

Pathway	Salt Water Fish	Salt Water Shell Fish	Discharge Canal Shoreline	Ocean Shoreline Deposits	Swimming	Boating	Total
Age Class: Adult							
Bone	6.86E-04	5.84E-04	1.43E-04	3.57E-05	2.59E-07	1.30E-07	1.45E-03
Liver	9.35E-04	6.60E-04	1.43E-04	3.57E-05	2.59E-07	1.30E-07	1.77E-03
Kidney	2.82E-04	1.16E-04	1.43E-04	3.57E-05	2.59E-07	1.30E-07	5.77E-04
Lung	1.47E-04	1.76E-04	1.43E-04	3.57E-05	2.59E-07	1.30E-07	5.02E-04
GI-LLI	6.89E-04	2.21E-03	1.43E-04	3.57E-05	2.59E-07	1.30E-07	3.08E-03
Whole Body	6.00E-04	4.53E-04	1.43E-04	3.57E-05	2.59E-07	1.30E-07	1.23E-03
Thyroid	1.26E-05	1.11E-05	1.43E-04	3.57E-05	2.59E-07	1.30E-07	2.03E-04
Skin	0.00E+00	0.00E+00	1.67E-04	4.18E-05	3.12E-07	1.56E-07	2.09E-04
Age Class: Teen							
Bone	7.27E-04	5.27E-04	7.97E-04	1.99E-04	2.59E-07	1.30E-07	2.25E-03
Liver	9.70E-04	6.00E-04	7.97E-04	1.99E-04	2.59E-07	1.30E-07	2.57E-03
Kidney	2.90E-04	1.01E-04	7.97E-04	1.99E-04	2.59E-07	1.30E-07	1.39E-03
Lung	1.75E-04	1.85E-04	7.97E-04	1.99E-04	2.59E-07	1.30E-07	1.36E-03
GI-LLI	4.84E-04	1.37E-03	7.97E-04	1.99E-04	2.59E-07	1.30E-07	2.85E-03
Whole Body	3.75E-04	3.50E-04	7.97E-04	1.99E-04	2.59E-07	1.30E-07	1.72E-03
Thyroid	1.02E-05	8.49E-06	7.97E-04	1.99E-04	2.59E-07	1.30E-07	1.02E-03
Skin	0.00E+00	0.00E+00	9.34E-04	2.33E-04	3.12E-07	1.56E-07	1.17E-03
Age Class: Child							
Bone	9.17E-04	7.68E-04	1.67E-04	4.16E-05	1.45E-07	7.23E-08	1.89E-03
Liver	8.74E-04	6.29E-04	1.67E-04	4.16E-05	1.45E-07	7.23E-08	1.71E-03
Kidney	2.49E-04	9.76E-05	1.67E-04	4.16E-05	1.45E-07	7.23E-08	5.55E-04
Lung	1.44E-04	1.84E-04	1.67E-04	4.16E-05	1.45E-07	7.23E-08	5.37E-04
GI-LLI	1.74E-04	5.68E-04	1.67E-04	4.16E-05	1.45E-07	7.23E-08	9.51E-04
Whole Body	2.11E-04	3.91E-04	1.67E-04	4.16E-05	1.45E-07	7.23E-08	8.11E-04
Thyroid	9.07E-06	9.49E-06	1.67E-04	4.16E-05	1.45E-07	7.23E-08	2.27E-04
Skin	0.00E+00	0.00E+00	1.93E-04	4.88E-05	1.74E-07	8.71E-08	2.44E-04

Doses From Gaseous Effluent Releases

Gaseous effluent release data presented in Tables 1A, 1B and 1C from the semiannual effluent release reports were used as input to the Yankee Atomic "YODA" computer programs to calculate radiation doses. These data include gaseous releases from the PNPS main stack, reactor building vent and turbine building roof exhausters. Meteorological data obtained from the PNPS 220-foot meteorological tower during 1991 were also used as input to the Yankee Atomic Electric Company's "AEOLUS" computer program (Ref. 8). This computer program calculated the atmospheric dispersion and deposition factors used in the "YODA"-series of computer programs to calculate maximum individual doses. These various dispersion (X/Q) and deposition (D/Q) factors are presented in Appendix B of this report.

The maximum individual doses resulting from radioactive particulates, iodines and tritium released in gaseous effluents are presented in Tables 1.2-1 through 1.2-5. These tables cover the individual calendar quarters and total calendar year, respectively. Doses resulting from releases of noble gases are addressed independently in the PNPS Technical Specifications. Therefore, none of these tables for maximum individual doses include any dose contributions from noble gases. The presentation and analysis of doses resulting from noble gases are addressed in Section 1.3 of this report.

Tables 1.2-1 through 1.2-5 summarize the maximum total body, skin and organ doses for the adult, teen, child and infant age classes resulting from the major gaseous exposure pathways. These tables present the dose data according to specific receptor location and the exposure pathways assumed to occur at that location. For example, the second column of the tables presents the information for the hypothetical maximum-exposed individual at the most restrictive site boundary location, where only inhalation and ground deposition exposure pathways are assumed to occur. Since this is a shoreline location effectively controlled by Boston Edison Company, the other pathways of garden vegetable production, milk production and meat production are assumed not to occur. Doses for other offsite locations not under Boston Edison control, where other exposure pathways can and do occur, are presented in subsequent columns of the tables, and represent the potential maximum doses to individuals at these locations.

Radioactivity released in gaseous effluents from PNPS during 1991 resulted in a maximum total body dose (teen age class) of  $2.39\text{E}-01$  mrem. The maximum organ dose (child age class, thyroid) was  $2.56\text{E}+00$  mrem. Both of these doses occurred to hypothetical individuals at the shoreline 100 meters north-northeast of the PNPS Reactor Building, an area effectively under Boston Edison Control. For the more "realistic" individuals at offsite locations, the maximum total body dose was  $1.74\text{E}-02$  mrem (child age class at a location 820 meters [0.5 miles] southeast of the Reactor Building yielding garden vegetables), while the maximum organ dose was  $1.17\text{E}+00$  mrem (infant thyroid at a location 3970 meters [2.5 miles] west-southwest, yielding vegetables and cow and goat milk).

Table 1.2-1

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
 From Gaseous Release  
 Period: January - March 1991

Receptor:	Bound	Garden	Resident	Cow Goat	Meat	Cow Meat
Direction:	N	SE	ESE	WSW	S	W
Distance:	80m	820m	800m	3970m	3800m	5770m
Pathway*:	DI	DIV	DI	DIVCG	DIVM	DIVCM

Age Class: Adult

Bone	1.01E-02	7.45E-03	1.69E-04	4.79E-04	2.87E-04	1.15E-04
Liver	1.01E-01	5.11E-03	1.54E-03	5.80E-04	3.53E-04	1.74E-04
Kidney	1.02E-01	5.26E-03	1.56E-03	7.10E-04	3.67E-04	1.95E-04
Lung	1.03E-01	4.95E-03	1.57E-03	4.00E-04	3.37E-04	1.47E-04
GI-LLI	1.00E-01	5.53E-03	1.53E-03	4.80E-04	3.62E-04	1.62E-04
Thyroid	6.38E-01	7.07E-02	9.16E-03	5.88E-02	6.32E-03	9.17E-03
W Body	9.98E-02	6.20E-03	1.52E-03	5.53E-04	3.88E-04	1.77E-04
Skin	7.13E-04	4.34E-05	4.44E-05	2.96E-06	3.19E-06	8.90E-07

Age Class: Teen

Bone	1.17E-02	9.91E-03	1.92E-04	7.25E-04	3.73E-04	1.61E-04
Liver	1.02E-01	5.62E-03	1.56E-03	7.84E-04	3.72E-04	2.07E-04
Kidney	1.04E-01	5.78E-03	1.59E-03	1.01E-03	3.85E-04	2.40E-04
Lung	1.07E-01	5.51E-03	1.63E-03	4.77E-04	3.59E-04	1.63E-04
GI-LLI	1.01E-01	6.11E-03	1.54E-03	5.78E-04	3.82E-04	1.80E-04
Thyroid	7.84E-01	6.31E-02	1.12E-02	8.96E-02	5.48E-03	1.32E-02
W Body	1.01E-01	7.03E-03	1.54E-03	7.07E-04	4.18E-04	2.04E-04
Skin	7.13E-04	4.34E-05	4.44E-05	2.96E-06	3.19E-06	8.90E-07

Age Class: Child

Bone	1.24E-02	1.92E-02	2.02E-04	1.54E-03	7.15E-04	3.28E-04
Liver	9.07E-02	7.72E-03	1.39E-03	1.23E-03	5.07E-04	3.05E-04
Kidney	9.27E-02	7.89E-03	1.41E-03	1.58E-03	5.22E-04	3.55E-04
Lung	9.50E-02	7.54E-03	1.45E-03	6.99E-04	4.89E-04	2.29E-04
GI-LLI	8.86E-02	7.97E-03	1.36E-03	7.78E-04	5.04E-04	2.42E-04
Thyroid	8.97E-01	9.23E-02	1.28E-02	1.75E-01	8.01E-03	2.54E-02
W Body	8.96E-02	1.02E-02	1.37E-03	1.12E-03	5.92E-04	3.04E-04
Skin	7.13E-04	4.34E-05	4.44E-05	2.96E-06	3.19E-06	8.90E-07

Age Class: Infant

Bone	6.90E-03	1.17E-04	1.24E-04	1.69E-03	7.95E-06	2.13E-04
Liver	5.35E-02	7.68E-04	8.28E-04	1.83E-03	4.86E-05	2.72E-04
Kidney	5.40E-02	7.74E-04	8.35E-04	2.04E-03	4.91E-05	3.01E-04
Lung	5.74E-02	8.17E-04	8.82E-04	5.63E-04	5.07E-05	9.99E-05
GI-LLI	5.10E-02	7.35E-04	7.93E-04	6.23E-04	4.59E-05	1.07E-04
Thyroid	7.93E-01	1.04E-02	1.13E-02	4.11E-01	8.43E-04	5.63E-02
W Body	5.19E-02	7.46E-04	8.05E-04	1.15E-03	4.68E-05	1.78E-04
Skin	7.13E-04	4.34E-05	4.44E-05	2.96E-06	3.19E-06	8.90E-07

\* Pathway designations are as follows:

D = Deposition (Ground Plane)

I = Inhalation

V = Vegetable Garden

C = Cow Milk

G = Goat Milk

M = Meat

Table 1.2-2

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
 From Gaseous Release  
 Period: April - June 1991

Receptor:	Bound	Garden	Cow Goat	Resident	Meat	Cow Meat
Direction:	NNE	SE	WSW	ESE	S	W
Distance:	100m	820m	3970m	800m	3800m	5770m
Pathway*:	DI	DIV	DIVCG	DI	DIVM	DIVCM

Age Class: Adult

Bone	6.34E-02	1.28E-03	4.08E-04	7.79E-04	1.14E-04	9.12E-05
Liver	1.02E-01	2.27E-03	7.37E-04	1.24E-03	2.14E-04	1.66E-04
Kidney	1.04E-01	2.32E-03	9.04E-04	1.26E-03	2.32E-04	2.05E-04
Lung	1.10E-01	2.22E-03	4.53E-04	1.32E-03	1.91E-04	1.10E-04
GI-LLI	1.02E-01	2.36E-03	5.51E-04	1.23E-03	2.12E-04	1.33E-04
Thyroid	7.34E-01	3.54E-02	8.55E-02	8.34E-03	9.15E-03	1.85E-02
W Body	1.00E-01	2.23E-03	6.13E-04	1.22E-03	2.02E-04	1.41E-04
Skin	7.18E-02	7.61E-04	9.38E-05	8.86E-04	4.91E-05	2.48E-05

Age Class: Teen

Bone	6.43E-02	1.57E-03	6.42E-04	7.90E-04	1.38E-04	1.34E-04
Liver	1.03E-01	2.46E-03	1.02E-03	1.25E-03	2.23E-04	2.13E-04
Kidney	1.06E-01	2.49E-03	1.31E-03	1.28E-03	2.40E-04	2.77E-04
Lung	1.16E-01	2.44E-03	5.32E-04	1.39E-03	2.04E-04	1.21E-04
GI-LLI	1.02E-01	2.52E-03	6.46E-04	1.24E-03	2.16E-04	1.46E-04
Thyroid	9.05E-01	3.27E-02	1.30E-01	1.03E-02	8.8E-03	2.68E-02
W Body	1.01E-01	2.39E-03	7.72E-04	1.23E-03	1.09E-04	1.67E-04
Skin	7.18E-02	7.61E-04	9.38E-05	8.86E-04	4.91E-05	2.48E-05

Age Class: Child

Bone	6.55E-02	2.77E-03	1.43E-03	8.03E-04	2.57E-04	2.87E-04
Liver	9.87E-02	3.15E-03	1.59E-03	1.20E-03	2.88E-04	3.20E-04
Kidney	1.01E-01	3.16E-03	2.02E-03	1.22E-03	3.06E-04	4.15E-04
Lung	1.09E-01	3.04E-03	7.34E-04	1.31E-03	2.57E-04	1.59E-04
GI-LLI	9.62E-02	3.05E-03	8.14E-04	1.17E-03	2.62E-04	1.76E-04
Thyroid	1.04E+00	4.65E-02	2.55E-01	1.18E-02	1.15E-02	5.14E-02
W Body	9.67E-02	3.06E-03	1.17E-03	1.18E-03	2.73E-04	2.46E-04
Skin	7.18E-02	7.61E-04	9.38E-05	8.86E-04	4.91E-05	2.48E-05

Age Class: Infant

Bone	6.44E-02	6.82E-04	2.19E-03	7.91E-04	4.61E-05	3.70E-04
Liver	8.40E-02	8.92E-04	2.60E-03	1.02E-03	6.46E-05	4.44E-04
Kidney	8.45E-02	8.97E-04	2.79E-03	1.03E-03	6.54E-05	4.95E-04
Lung	9.19E-02	9.71E-04	6.15E-04	1.11E-03	6.97E-05	8.31E-05
GI-LLI	8.10E-02	8.61E-04	6.68E-04	9.90E-04	6.03E-05	9.34E-05
Thyroid	9.51E-01	9.71E-03	5.97E-01	1.08E-02	1.31E-03	1.15E-01
W Body	8.18E-02	8.70E-04	1.41E-03	9.99E-04	6.16E-05	2.34E-04
Skin	7.18E-02	7.61E-04	9.38E-05	8.86E-04	4.91E-05	2.48E-05

\* Pathway designations are as follows:

D = Deposition (Ground Plane)  
 I = Inhalation  
 V = Vegetable Garden

C = Cow Milk  
 G = Goat Milk  
 M = Meat

Table 1.2-3

MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)  
 From Gaseous Release  
 Period: July - September 1991

Receptor:	Bound	Garden	Resident	Cow Goat	Meat	Cow Meat
Direction:	NNE	SE	CE	WSW	S	W
Distance:	100m	820m	790m	3970m	3800m	5770m
Pathway*:	DI	DIV	DI	DIVCG	DIVM	DIVCM

Age Class: Adult

Bone	2.02E-02	3.52E-03	2.06E-04	5.80E-04	5.13E-04	1.86E-04
Liver	3.64E-02	1.01E-03	4.02E-04	1.72E-04	8.20E-05	6.73E-05
Kidney	3.69E-02	1.02E-03	4.07E-04	2.10E-04	8.99E-05	7.68E-05
Lung	5.51E-02	1.20E-03	6.09E-04	1.35E-04	8.82E-05	6.28E-05
GI-LLI	4.03E-02	1.55E-03	4.45E-04	2.22E-04	1.59E-04	8.86E-05
Thyroid	1.59E-01	5.45E-03	1.82E-03	1.65E-02	3.25E-03	4.09E-03
W Body	3.63E-02	1.22E-03	4.00E-04	1.81E-04	1.13E-04	7.31E-05
Skin	1.66E-02	1.53E-04	1.62E-04	1.16E-05	1.33E-05	4.51E-06

Age Class: Teen

Bone	2.19E-02	5.11E-03	2.25E-04	9.19E-04	7.24E-04	2.76E-04
Liver	3.68E-02	1.11E-03	4.06E-04	2.30E-04	8.53E-05	8.06E-05
Kidney	3.75E-02	1.12E-03	4.14E-04	2.96E-04	9.31E-05	9.61E-05
Lung	6.83E-02	1.42E-03	7.57E-04	1.66E-04	1.03E-04	7.39E-05
GI-LLI	4.07E-02	1.70E-03	4.50E-04	2.65E-04	1.65E-04	9.78E-05
Thyroid	1.96E-01	5.43E-03	2.25E-03	2.52E-02	2.82E-03	5.92E-03
W Body	3.65E-02	1.38E-03	4.03E-04	2.34E-04	1.28E-04	8.61E-05
Skin	1.66E-02	1.53E-04	1.62E-04	1.16E-05	1.33E-05	4.51E-06

Age Class: Child

Bone	2.36E-02	1.14E-02	2.44E-04	2.12E-03	1.59E-03	6.21E-04
Liver	3.43E-02	1.47E-03	3.76E-04	3.57E-04	1.12E-04	1.18E-04
Kidney	3.49E-02	1.49E-03	3.83E-04	4.57E-04	1.20E-04	1.41E-04
Lung	6.20E-02	1.75E-03	6.84E-04	2.24E-04	1.23E-04	9.52E-05
GI-LLI	3.56E-02	1.90E-03	3.91E-04	2.98E-04	1.64E-04	1.11E-04
Thyroid	2.31E-01	7.61E-03	2.66E-03	4.94E-02	4.17E-03	1.14E-02
W Body	3.41E-02	2.03E-03	3.74E-04	3.83E-04	1.97E-04	1.33E-04
Skin	1.66E-02	1.53E-04	1.62E-04	1.16E-05	1.33E-05	4.51E-06

Age Class: Infant

Bone	1.98E-02	1.90E-04	2.02E-04	1.90E-03	1.69E-05	2.85E-04
Liver	2.60E-02	2.62E-04	2.79E-04	5.31E-04	2.11E-05	1.18E-04
Kidney	2.62E-02	2.64E-04	2.80E-04	5.93E-04	2.15E-05	1.31E-04
Lung	5.14E-02	5.28E-04	5.61E-04	1.85E-04	4.24E-05	4.94E-05
GI-LLI	2.60E-02	2.62E-04	2.78E-04	2.16E-04	1.98E-05	4.69E-05
Thyroid	2.08E-01	2.24E-03	2.38E-03	1.16E-01	5.04E-04	2.52E-02
W Body	2.57E-02	2.58E-04	2.74E-04	3.77E-04	1.99E-05	7.94E-05
Skin	1.66E-02	1.53E-04	1.62E-04	1.16E-05	1.33E-05	4.51E-06

\* Pathway designations are as follows:

D = Deposition (Ground Plane)

I = Inhalation

V = Vegetable Garden

C = Cow Milk

G = Goat Milk

M = Meat



Table 1.2-4

## MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)

From Gaseous Release

Period: October - December 1991

Receptor:	Bound	Garden	Resident	Cow Goat	Meat	Cow Meat
Direction:	N	SE	ESE	WSW	S	W
Distance:	80m	820m	800m	3970m	3800m	5770m
Pathway*:	DI	DIV	DI	DIVCG	DIVM	DIVCM

Age Class: Adult

Bone	5.99E-03	4.19E-03	1.18E-04	1.57E-04	2.74E-04	3.93E-05
Liver	2.25E-02	1.05E-03	3.75E-04	8.20E-05	6.91E-05	1.53E-05
Kidney	2.40E-02	1.12E-03	3.96E-04	1.13E-04	8.16E-05	2.10E-05
Lung	4.46E-02	1.25E-03	6.88E-04	4.53E-05	6.73E-05	9.16E-06
GI-LLI	2.61E-02	1.82E-03	4.25E-04	7.61E-05	1.08E-04	1.70E-05
Thyroid	3.93E-01	2.53E-02	5.77E-03	1.34E-02	5.00E-03	2.41E-03
W Body	2.15E-02	1.35E-03	3.59E-04	7.22E-05	8.42E-05	1.46E-05
Skin	1.04E-03	4.82E-05	5.23E-05	2.18E-06	8.16E-06	7.60E-07

Age Class: Teen

Bone	7.43E-03	5.95E-03	1.39E-04	2.48E-04	3.76E-04	5.78E-05
Liver	2.34E-02	1.15E-03	3.88E-04	1.20E-04	7.15E-05	2.09E-05
Kidney	2.55E-02	1.22E-03	4.18E-04	1.74E-04	8.39E-05	3.01E-05
Lung	5.98E-02	1.53E-03	9.06E-04	5.66E-05	7.97E-05	1.09E-05
GI-LLI	2.66E-02	1.92E-03	4.33E-04	9.08E-05	1.09E-04	1.86E-05
Thyroid	5.08E-01	2.35E-02	7.44E-03	2.05E-02	4.35E-03	3.50E-03
W Body	2.19E-02	1.55E-03	3.65E-04	9.74E-05	9.28E-05	1.84E-05
Skin	1.04E-03	4.82E-05	5.23E-05	2.18E-06	8.16E-06	7.60E-07

Age Class: Child

Bone	8.85E-03	1.30E-02	1.59E-04	5.64E-04	8.00E-04	1.28E-04
Liver	2.11E-02	1.56E-03	3.52E-04	1.94E-04	9.35E-05	3.27E-05
Kidney	2.29E-02	1.64E-03	3.79E-04	2.76E-04	1.07E-04	4.65E-05
Lung	5.23E-02	1.85E-03	7.96E-04	7.57E-05	9.40E-05	1.37E-05
GI-LLI	2.11E-02	2.06E-03	3.52E-04	1.01E-04	1.10E-04	1.91E-05
Thyroid	6.24E-01	3.43E-02	9.13E-03	4.03E-02	6.44E-03	6.76E-03
W Body	1.98E-02	2.35E-03	3.33E-04	1.63E-04	1.39E-04	3.01E-05
Skin	1.04E-03	4.82E-05	5.23E-05	2.18E-06	8.16E-06	7.60E-07

Age Class: Infant

Bone	8.03E-03	1.04E-04	1.19E-04	5.92E-04	1.19E-05	7.86E-05
Liver	2.35E-02	2.04E-04	2.36E-04	3.54E-04	1.63E-05	5.32E-05
Kidney	1.40E-02	2.10E-04	2.42E-04	4.05E-04	1.69E-05	6.13E-05
Lung	4.22E-02	5.52E-04	6.44E-04	6.23E-05	3.30E-05	7.43E-06
GI-LLI	1.20E-02	1.85E-04	2.14E-04	7.68E-05	1.35E-05	8.86E-06
Thyroid	5.69E-01	7.18E-03	8.32E-03	9.44E-02	8.30E-04	1.51E-02
W Body	1.19E-02	1.84E-04	2.13E-04	1.95E-04	1.40E-05	2.71E-05
Skin	1.04E-03	4.82E-05	5.23E-05	2.18E-06	8.16E-06	7.60E-07

\* Pathway Designations are as follows:

D = Deposition (Ground Plane)

I = Inhalation

V = Vegetable Garden

C = Cow Milk

G = Goat Milk

M = Meat

Table 1.2-5

## MAXIMUM INDIVIDUAL ORGAN DOSE AT RECEPTOR LOCATION -- (mrem)

From Gaseous Release

Period: January - December 1991

Receptor:	Bound	Garden	Resident	Cow Goat	Meat	Cow Meat
Direction:	NNE	SE	ESE	WSW	S	W
Distance:	100m	820m	800m	3970m	3800m	5770m
Pathway*:	DI	DIV	DI	DIVCG	DIVM	DIVCM

Age Class: Adult

Bone	8.40E-02	1.52E-02	1.62E-03	1.75E-03	1.14E-03	4.58E-04
Liver	2.40E-01	9.90E-03	4.05E-03	1.63E-03	7.39E-04	4.61E-04
Kidney	2.45E-01	1.01E-02	4.12E-03	1.99E-03	7.94E-04	5.37E-04
Lung	2.81E-01	1.00E-02	4.65E-03	1.13E-03	7.02E-04	3.68E-04
GI-LLI	2.45E-01	1.16E-02	4.12E-03	1.45E-03	8.55E-04	4.46E-04
Thyroid	1.77E+00	1.29E-01	2.65E-02	1.67E-01	2.47E-02	3.45E-02
W Body	2.36E-01	1.11E-02	4.00E-03	1.51E-03	8.01E-04	4.46E-04
Skin	7.47E-02	1.44E-03	1.56E-03	7.72E-05	7.76E-05	2.51E-05

Age Class: Teen

Bone	8.90E-02	2.09E-02	1.69E-03	2.73E-03	1.54E-03	6.68E-04
Liver	2.43E-01	1.08E-02	4.10E-03	2.21E-03	7.73E-04	5.64E-04
Kidney	2.50E-01	1.11E-02	4.21E-03	2.84E-03	1.26E-04	6.88E-04
Lung	3.13E-01	1.13E-02	5.11E-03	1.36E-03	1.67E-04	4.14E-04
GI-LLI	2.47E-01	1.27E-02	4.15E-03	1.73E-03	8.87E-04	4.92E-04
Thyroid	2.20E+00	1.19E-01	3.28E-02	2.54E-01	2.14E-02	4.98E-02
W Body	2.39E-01	1.24E-02	4.03E-03	1.92E-03	8.59E-04	5.22E-04
Skin	7.47E-02	1.44E-03	1.56E-03	7.72E-05	7.76E-05	2.51E-05

Age Class: Child

Bone	9.31E-02	4.33E-02	1.75E-03	6.11E-03	3.21E-03	1.45E-03
Liver	2.24E-01	1.44E-02	3.80E-03	3.46E-03	1.03E-03	8.37E-04
Kidney	2.30E-01	1.46E-02	3.89E-03	4.41E-03	1.09E-03	1.02E-03
Lung	2.83E-01	1.46E-02	4.66E-03	1.93E-03	9.88E-04	5.61E-04
GI-LLI	2.20E-01	1.54E-02	3.74E-03	2.20E-03	1.06E-03	6.15E-04
Thyroid	2.56E+00	1.71E-01	3.82E-02	4.97E-01	3.14E-02	9.57E-02
W Body	2.19E-01	1.74E-02	3.74E-03	3.03E-03	1.21E-03	7.84E-04
Skin	7.47E-02	1.44E-03	1.56E-03	7.72E-05	7.76E-05	2.51E-05

Age Class: Infant

Bone	8.14E-02	1.45E-03	1.58E-03	6.59E-03	8.67E-05	9.74E-04
Liver	1.59E-01	2.51E-03	2.80E-03	5.25E-03	1.56E-04	9.13E-04
Kidney	1.60E-01	2.53E-03	2.82E-03	5.78E-03	1.59E-04	1.02E-03
Lung	2.12E-01	3.18E-03	3.56E-03	1.57E-03	2.02E-04	2.66E-04
GI-LLI	1.52E-01	2.43E-03	2.70E-03	1.74E-03	1.45E-04	2.81E-04
Thyroid	2.31E+00	3.02E-02	3.44E-02	1.17E+00	3.60E-03	2.12E-01
W Body	1.54E-01	2.44E-03	2.72E-03	3.23E-03	1.48E-04	5.45E-04
Skin	7.47E-02	1.44E-03	1.56E-03	7.72E-05	7.76E-05	2.51E-05

\* Pathway designations are as follows:

D = Deposition (Ground Plane)

I = Inhalation

V = Vegetable Garden

C = Cow Milk

G = Goat Milk

M = Meat



Doses From Noble Gas Releases

Noble gas release data presented in Tables 1A, 1B and 1C from the semiannual effluent release reports were used as input to the Yankee Atomic "YODA" computer programs to calculate radiation doses. Doses resulting from noble gas releases were calculated using 1991 meteorological data, as described in Section 1.2 of this report. The various dispersion (X/Q) factors calculated with the "AEOLUS" computer program and used to estimate doses from noble gases are presented in Appendix B of this report.

The maximum individual doses resulting from radioactive noble gases released in gaseous effluents are presented in Table 1.3-1 according to specific receptor location. This table includes all noble gas doses for the individual calendar quarters and total calendar year.

Noble gases released in gaseous effluents from PNPS during 1991 resulted in a maximum total body dose of  $3.07\text{E}-01$  mrem. The maximum skin dose was  $1.21\text{E}+00$  mrem. Both of these doses occurred to a hypothetical individual at the shoreline 100 meters (0.1 miles) north-northeast of the PNPS Reactor Building, an area effectively under Boston Edison control. Doses to more "realistic" individuals at offsite locations would be lower than the doses for these hypothetical site boundary individuals.

Table 1.3-1

Maximum Doses From Noble Gas Releases During 1991

Release Period	Gamma Air Dose (Location)	Beta Air Dose (Location)	Whole Body Dose (Location)	Skin Dose (Location)
January through March	3.14E-02 mrad (0.1 mi. E)	8.68E-02 mrad (0.1 mi. N)	2.09E-02 mrem (0.1 mi. E)	8.08E-02 mrem (0.1 mi. N)
April through June	1.24E-01 mrad (0.1 mi. NNE)	4.12E-01 mrad (0.1 mi. NNE)	8.32E-02 mrem (0.1 mi. NNE)	4.45E-01 mrem (0.1 mi. NNE)
July through September	3.27E-01 mrad (0.3 mi. SSE)	2.47E-01 mrad (0.1 mi. NNE)	2.19E-01 mrem (0.3 mi. SSE)	4.17E-01 mrem (0.1 mi. NNE)
October through December	7.78E-02 mrad (0.1 mi. N)	5.37E-01 mrad (0.1 mi. N)	5.14E-02 mrem (0.1 mi. N)	4.66E-01 mrem (0.1 mi. N)
January through December	4.60E-01 mrad (0.1 mi. NNE)	1.13E+00 mrad (0.1 mi. N)	3.07E-01 mrem (0.1 mi. NNE)	1.21E+00 mrem (0.1 mi. NNE)

Population and Average Individual Doses

PNPS Technical Specifications do not contain any limits or operational objectives related to population doses. However, NRC Regulatory Guide 1.21 (Ref. 9) recommends calculation of population and average individual doses to the total body as part of the overall assessment of radiological impact on man.

Total body doses to the entire population within 50 miles of Pilgrim Station resulting from radionuclides in effluents released offsite were calculated using the population distribution listed in Table 2.0-1. The values presented in this table are based on 1980 census data.

These cumulative population doses were also calculated using methods presented in the PNPS ODCM, NRC Regulatory Guide 1.109, NRC Regulatory Guide 1.111 and the Pilgrim Station Unit 1 Appendix I Evaluation. Population doses were calculated separately for: (1) liquid effluents; and, (2) gaseous effluents. Unlike the Technical Specification addressing doses to maximum exposed individuals resulting from the three types of releases addressed in Section 1 of this report, population doses for gaseous effluents combine the dose contributions from noble gases along with those from radioactive particulates, iodines and tritium. Also, in the case of population doses, average consumption and use factors for various pathways from Table E-4 of the PNPS ODCM are assumed, rather than the maximum use factors assumed for the maximum exposed individual.

Information related to liquid and gaseous effluent releases were obtained from the two semiannual Radioactive Effluent and Waste Disposal Reports (Ref. 5 and 6). These effluent release data were used as input to computer programs to calculate the resulting total body doses. The Yankee Atomic Electric Company "YODA"-series of computer programs was used to compile the dose contributions to the total body in each age class from major exposure pathways (Ref. 7).

In addition to population total body doses, doses to an average individual in the population were calculated. These average total body doses were estimated by dividing the total population dose (person-rem) by the total population of 4.18 million people within 50 miles of PNPS.

TABLE 2.0-1

## POPULATION DISTRIBUTION BY DISTANCE AND DIRECTION\*

SECTOR	Distance Interval from Pi/grim Station - miles										
	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50	0-50
N	0	0	0	0	0	0	0	0	0	3.09E4	3.09E4
NNE	0	0	0	0	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0	0	0	0	0
FNE	0	0	0	0	0	0	5.30E2	3.48E3	0	0	4.01E3
E	0	0	0	0	0	0	0	3.29E3	3.41E2	0	3.63E3
ESE	0	0	1.50E1	0	0	0	0	5.88E3	1.31E4	0	1.90E4
SE	5.70E2	1.76E2	4.76E2	0	0	0	1.24E3	4.02E4	5.91E3	0	4.86E4
SSE	1.90E1	2.10E2	5.30E2	2.03E3	8.19E2	1.39E3	1.32E4	1.95E4	0	7.12E2	3.84E4
S	0	3.90E1	2.08E2	5.30E1	2.20E1	2.39E3	1.66E4	2.52E4	7.80E3	7.12E2	5.30E4
SSW	1.90E1	0	2.30E1	0	0	9.98E2	1.58E4	7.80E3	3.16E2	3.59E2	2.53E4
SW	0	3.90E1	1.23E2	6.50E1	3.49E2	4.97E2	1.28E4	1.42E5	4.64E4	4.65E4	2.49E5
WSW	0	7.70E1	2.36E2	3.00E0	2.17E2	2.52E3	1.18E4	5.04E4	1.37E5	1.85E5	3.87E5
W	5.80E1	9.50E1	4.75E2	1.25E3	4.52E3	9.56E3	1.76E4	6.05E4	1.42E5	3.78E5	6.14E5
WNW	1.17E2	0	0	0	7.11E2	1.03E4	2.83E4	1.65E5	1.13E5	1.08E5	4.25E5
NW	1.90E1	0	0	0	8.00E0	5.65E3	3.96E4	2.07E5	8.21E5	6.36E5	1.71E6
NNW	0	0	0	0	1.30E1	1.55E3	2.66E4	2.83E4	1.04E5	4.14E5	5.74E5
TOTAL	8.02E2	6.36E2	2.09E3	3.40E3	6.66E3	3.49E4	1.84E5	7.59E5	1.39E6	1.80E6	4.18E6

\* Population distribution data based on 1980 Census Data

Doses From Liquid Effluent Releases

Population total body doses (person-rem) resulting from releases of radionuclides in liquid effluents are presented in Table 2.1-1. This table includes the doses for the four calendar quarters and entire year resulting from the various liquid exposure pathways. The corresponding average individual total body doses (mrem) are presented in Table 2.1-2.

Radioactivity released in liquid effluents from PNPS during 1991 resulted in a population total body dose of  $1.52\text{E}-02$  person-rem. The corresponding average individual total body dose was  $3.63\text{E}-06$  mrem.

Table 2.1-1

## Population Doses From Liquid Effluent Releases During 1991

Exposure Pathway	Population Total Body Dose (person-rem)				
	1st QTR	2nd QTR	3rd QTR	4th QTR	Annual
Fish	5.22E-04	6.82E-04	8.91E-03	6.35E-05	8.69E-03
Shellfish	2.47E-04	1.23E-03	3.76E-03	6.02E-05	4.59E-03
Swimming/Boating	2.07E-07	5.21E-07	3.66E-06	7.19E-08	3.89E-06
Shoreline	8.82E-05	2.17E-04	1.60E-03	1.86E-05	1.68E-03
Total	8.57E-04	2.13E-03	1.43E-02	1.42E-04	1.52E-02

Table 2.1-2

## Average Individual Doses From Liquid Effluent Releases During 1991

Exposure Pathway	Average Individual Total Body Dose (mrem)				
	1st QTR	2nd QTR	3rd QTR	4th QTR	Annual
Fish	1.25E-07	1.63E-07	2.13E-06	1.52E-08	2.13E-06
Shellfish	5.90E-08	2.94E-07	9.00E-07	1.44E-08	1.10E-06
Swimming/Boating	4.94E-11	1.24E-10	8.76E-10	1.72E-11	9.29E-10
Shoreline	2.11E-08	5.19E-08	3.83E-07	4.44E-09	4.01E-07
Total	2.05E-07	5.09E-07	3.41E-06	3.41E-08	3.63E-06



Doses From Gaseous Effluent Releases

Population total body doses (person-rem) resulting from releases of radionuclides in gaseous effluents are presented in Table 2.2-1. This table includes the doses for the four calendar quarters and entire year resulting from the various liquid exposure pathways. The corresponding average individual total body doses (mrem) are presented in Table 2.2-2.

Radioactivity released in gaseous effluents from PNPS during 1991 resulted in a population total body dose of  $1.59\text{E}+00$  person-rem. The corresponding average individual total body dose was  $3.81\text{E}-04$  mrem.

Table 2.2-1

## Population Doses From Gaseous Effluent Releases During 1991

Exposure Pathway	Population Total Body Dose (person-rem)				
	1st QTR	2nd QTR	3rd QTR	4th QTR	Annual
Noble Gas	9.29E-02	2.65E-01	1.25E+00	1.44E-01	1.56E+00
Ground Deposition	1.82E-04	2.92E-03	6.04E-04	4.35E-04	4.17E-03
Inhalation	1.04E-02	5.38E-03	2.90E-03	1.93E-03	2.37E-02
Vegetables	9.61E-04	6.29E-04	3.46E-04	1.79E-04	2.46E-03
Milk	7.92E-04	7.45E-04	3.21E-04	1.83E-04	2.31E-03
Meat	3.54E-05	2.58E-05	1.21E-05	5.26E-06	9.25E-05
Total	1.05E-01	2.75E-01	1.25E+00	1.47E-01	1.59E+00

Table 2.2-2

## Average Individual Doses From Gaseous Effluent Releases During 1991

Exposure Pathway	Average Individual Total Body Dose (mrem)				
	1st QTR	2nd QTR	3rd QTR	4th QTR	Annual
Noble Gas	2.22E-05	6.34E-05	2.99E-04	3.44E-05	3.73E-04
Ground Deposition	4.35E-08	6.99E-07	1.44E-07	1.04E-07	9.98E-07
Inhalation	2.49E-06	1.29E-06	6.94E-07	4.62E-07	5.67E-06
Vegetables	2.30E-07	1.50E-07	8.28E-08	4.28E-08	9.89E-07
Milk	1.89E-07	1.83E-07	7.68E-08	4.38E-08	5.53E-07
Meat	8.47E-09	6.17E-09	2.89E-09	1.26E-09	2.21E-08
Total	2.52E-05	6.57E-05	3.00E-04	3.51E-05	3.81E-04



PNPS Technical Specifications do not contain any limits or operational objectives related specifically to offsite radiation exposure. However, NRC Regulatory Guide 1.21 (Ref. 9) recommends calculation of direct radiation exposure as part of the overall assessment of radiological impact on man.

Thermoluminescent dosimeters (TLDs) are located at 79 sites beyond the boundary of the PNPS restricted/protected area. A number of these TLDs are actually located on Boston Edison property in close proximity to the station proper. The TLDs are collected on a quarterly basis and used to calculate the direct radiation exposure (mR) over the exposure period. These TLDs are grouped into four zones of increasing distances from the station. Average exposure values for each of these zones were calculated for each calendar quarter and the total year. The average exposure values (mR) for the four zones are presented in Table 3.0-1.

In addition to responding to direct radiation exposure, TLDs will also record radiation resulting from noble gases (plume and immersion exposure), particulate materials deposited on the ground, cosmic rays from outer space and from natural-occurring radioactivity in the soil and air. Typically, the exposure from cosmic rays and other natural radioactivity components is about 40 - 70 mrem/yr. As calculated in Sections 1.2 and 1.3 of this report, the doses from PNPS effluent emission are below 1 mrem/yr and would not be discernible above the natural radiation exposure levels.

The major source of direct radiation exposure from PNPS results from high energy nitrogen-16 gamma rays emitted from the turbine building. Although this material is enclosed in the process lines and not released into the environment, the direct radiation exposure and sky shine from this contained source accounts for the majority of the direct radiation dose, especially in close proximity to the station. Other sources of direct radiation exposure include radiation emitted from contained radioactive sources or radwaste at the facility. Despite these sources of direct radiation exposure at PNPS, increases in exposure from direct radiation are typically not observable above background radiation levels at locations beyond Boston Edison controlled property.

The average exposure values presented in Table 3.0-2 appear to indicate an elevation in direct radiation exposure in TLD Zone 1, those TLDs within 2 miles of PNPS. However, these differences are not statistically significant due to the high variability of exposure values in the various zones. Most of this apparent elevation is due to increases in exposure levels measured at the TLD locations on Boston Edison property in close proximity to the station proper. For example, the annual exposure at TLD location OA, located at the Overlook Area near the PNPS I&S Building, was 208 mR for the entire year. This location is immediately adjacent to the station proper and overlooks the turbine building, therefore, receiving the highest direct radiation and sky shine exposure.

Offsite Direct Radiation Measurements (continued)

Although the annual exposure at TLD location OA was 147 mR/yr over the average Zone 4 exposure rate, this area is not continuously occupied by members of the general public. When adjusted for such occupancy, a hypothetical member of the public who was at this location for 40 hours per year would only receive an incremental dose of 0.7 mrem over natural background radiation levels. At the nearest residence 800 meters (0.5 miles) southeast of the PNPS Reactor Building, the annual exposure was  $61.7 \pm 4.0$  mR, which compares quite well to the Zone 4 annual average of  $61.4 \pm 8.7$  mR.

Although some of the TLDs in close proximity to PNPS indicate increases in exposure levels from direct radiation, such increases are localized to areas under Boston Edison control. For members of the general public accessing Boston Edison controlled (e.g., Shorefront Recreation Area, I&S Building, Parking Lots, etc.), such increases in dose from direct radiation exposure are estimated as being less than 1 mrem/yr.

Percent of Technical Specifications Limits/Objectives

The PNPS Technical Specifications contain dose and concentration limits for radioactive effluents. In addition, operational objectives are also specified which, if met, ensure that radioactive releases are maintained as low as is reasonably achievable. The percentages of the PNPS Technical Specifications were determined from the doses calculated in Section 1, the liquid concentrations listed in the 1991 semiannual Effluent Release and Waste Disposal Reports, and the Technical Specifications limits/objectives listed in Tables 4.1-1 and 4.2-1.

The percent of applicable limits are provided as a supplement to the information provided in the two semiannual Radioactive Effluent and Waste Disposal Reports. The format for the percent applicable limits is modified from that prescribed in Regulatory Guide 1.21 (Ref. 9) to accommodate the Radioactive Effluents Technical Specifications (RETS) which became effective March 1, 1986. The percentages have been grouped according to whether the releases were via liquid or gaseous effluent release pathways.

Liquid Effluent Releases

Liquid effluents concentration limits and dose objectives from PNPS Technical Specifications are shown in Table 4.1-1. The quarterly average concentrations from the 1991 semiannual Radioactive Effluent and Waste Disposal reports were used to calculate the percent concentration limits. The maximum quarterly and annual whole body and organ doses from Tables 1.1-1 through 1.1-5 were used to calculate the corresponding percentages shown in Table 4.1-1. The resulting concentrations and doses from Pilgrim Station's liquid releases during 1991 were a very small percentage of the corresponding limits and objectives.

Table 3.0-1

## AVERAGE TLD EXPOSURES BY DISTANCE ZONE DURING 1991

Period	Average Exposure $\pm$ Standard Deviation (mR/period)							
	Zone 1*		Zone 2		Zone 3		Zone 4	
	0 km - 3 km		3 km - 8 km		8 km - 15 km		> 15 km	
	Avg	StD	Avg	StD	Avg	StD	Avg	StD
Qtr-1	17.7	$\pm$ 7.1	14.4	$\pm$ 2.5	13.8	$\pm$ 1.6	15.0	$\pm$ 1.9
Qtr-2	16.8	$\pm$ 3.2	14.9	$\pm$ 2.6	14.5	$\pm$ 2.1	16.2	$\pm$ 3.2
Qtr-3	15.2	$\pm$ 4.1	15.2	$\pm$ 2.7	14.8	$\pm$ 1.9	15.6	$\pm$ 1.6
Qtr-4	19.6	$\pm$ 12.1	14.5	$\pm$ 2.7	14.0	$\pm$ 1.6	14.6	$\pm$ 1.8
Year	71.8	$\pm$ 30.0	59.1	$\pm$ 10.4	57.2	$\pm$ 7.2	61.4	$\pm$ 8.7

\* Zone 1 extends from the restricted/protected area boundary outward to 3 kilometers (2 miles).

Table 4.1-1

Percent of Technical Specifications Limits/Objectives  
for Liquid Effluent Releases During 1991

- A. Fission and Activation Product Concentration Limit (MPC<sub>w</sub>)  
 PNPS Technical Specification 3.8.A.1  
 Limit: 10CFR20 Appendix B, Table II, Column 2 Value

Period	Value (μCi/ml)	Fraction of Limit
1st Quarter	1.69E-09	1.16E-02%
2nd Quarter	4.03E-09	1.71E-02%
3rd Quarter	9.93E-09	4.81E-02%
4th Quarter	1.16E-09	4.02E-03%

- B. Tritium Average Concentration Limit  
 PNPS Technical Specification 3.8.A.1  
 Limit: 3.0E-03 μCi/ml

Period	Value (μCi/ml)	Fraction of Limit
1st Quarter	4.85E-07	1.62E-02%
2nd Quarter	2.21E-08	7.35E-04%
3rd Quarter	3.18E-06	1.06E-01%
4th Quarter	7.32E-07	2.44E-02%

- C. Dissolved and Entrained Gases Average Concentration Limit  
 PNPS Technical Specification 3.8.A.1  
 Limit: 2.0E-04 μCi/ml

Period	Value (μCi/ml)	Fraction of Limit
1st Quarter	3.11E-11	1.55E-05%
2nd Quarter	NDA	--
3rd Quarter	3.89E-10	1.95E-04%
4th Quarter	5.27E-09	2.63E-03%

- D. Quarterly Total Body Dose Objective  
 PNPS Technical Specification 7.2.A.1  
 Objective: 1.5 mrem Total Body Dose

Period	Value (mrem)	Fraction of Limit
1st Quarter	9.56E-05	6.37E-03%
2nd Quarter	2.44E-04	1.63E-02%
3rd Quarter	1.62E-03	1.08E-01%
4th Quarter	1.76E-05	1.17E-03%

Table 4.1-1 (continued)

Percent of Technical Specifications Limits/Objectives  
for Liquid Effluent Releases During 1991

E. Annual Total Body Dose Objective  
PNPS Technical Specification 7.2.A.2  
Objective: 3 mrem Total Body Dose

Period	Value (mrem)	Fraction of Limit
Annual	1.72E-03	5.73E-02%

F. Quarterly Organ Dose Objective  
PNPS Technical Specification 7.2.A.1  
Objective: 5 mrem Organ Dose

Period	Value (mrem)	Fraction of Limit
1st Quarter	1.52E-04	3.04E-03%
2nd Quarter	7.31E-04	1.46E-02%
3rd Quarter	2.65E-03	5.30E-02%
4th Quarter	4.23E-05	8.46E-04%

G. Annual Organ Dose Objective  
PNPS Technical Specification 7.2.A.2  
Objective: 10 mrem Organ Dose

Period	Value (mrem)	Fraction of Limit
Annual	3.08E-03	3.08E-02%



Gaseous Effluent Releases

Organ dose limits and objectives for the maximum individual from radioactive iodines, particulates, and tritium from PNPS Technical Specifications are shown in Table 4.2-1. The maximum quarterly and annual organ doses from Tables 1.2-1 through 1.2-5 were used to calculate the percentages shown in Table 1.2-1. The resulting organ doses from Pilgrim Station's gaseous releases during 1991 were a small percentage of the corresponding limits and objectives.

Dose limits and objectives for exposures arising from noble gases are also presented in Table 4.2-1. The maximum quarterly air doses and annual whole body and skin doses listed in Table 1.3-1 were used to calculate the percentage values shown in Table 4.2-1. All doses resulting from noble gas exposure were a small percentage of the applicable limits and objectives.

Table 4.2-1

Percent of Technical Specifications Limits/Objectives  
for Gaseous Effluent Releases During 1991

- A. Annual Dose Rate Limit - Noble Gases  
PNPS Technical Specification 3.8.D.1.a  
Limit: 500 mrem/yr Total Body Dose

Period	Value (mrem/yr)	Fraction of Limit
Annual	3.07E-01	6.14E-02%

- B. Annual Dose Rate Limit - Noble Gases  
PNPS Technical Specification 3.8.D.1.a  
Limit: 3000 mrem/yr Skin Dose

Period	Value (mrem/yr)	Fraction of Limit
Annual	1.21E+00	4.03E-02%

- C. Annual Dose Rate Limit - Particulates, Iodines and Tritium  
PNPS Technical Specification 3.8.D.1.b  
Limit: 1500 mrem/yr Organ Dose

Period	Value (mrem/yr)	Fraction of Limit
Annual	2.56E+00	1.71E-01%

- D. Quarterly Dose Objective - Noble Gas Gamma Air Dose  
PNPS Technical Specification 7.3.A.1  
Objective: 5 mrad Gamma Air Dose

Period	Value (mrad)	Fraction of Limit
1st Quarter	3.14E-02	6.28E-01%
2nd Quarter	1.24E-01	2.50E+00%
3rd Quarter	3.27E-01	6.54E+00%
4th Quarter	7.78E-02	1.56E+00%

- E. Annual Dose Objective - Noble Gas Gamma Air Dose  
PNPS Technical Specification 7.3.A.2  
Objective: 10 mrad Gamma Air Dose

Period	Value (mrad)	Fraction of Limit
Annual	4.60E-01	4.60E+00%



Table 4.2-1 (continued)

Percent of Technical Specifications Limits/Objectives  
for Gaseous Effluent Releases During 1991

F. Quarterly Dose Objective - Noble Gas Beta Air Dose  
PNPS Technical Specification 7.3.A.1  
Objective: 10 mrad Beta Air Dose

Period	Value (mrad)	Fraction of Limit
1st Quarter	8.68E-02	8.68E-01%
2nd Quarter	4.12E-01	4.12E-00%
3rd Quarter	2.47E-01	2.47E+00%
4th Quarter	5.37E-01	5.37E+00%

G. Annual Dose Objective - Noble Gas Beta Air Dose  
PNPS Technical Specification 7.3.A.2  
Objective: 20 mrad Beta Air Dose

Period	Value (mrad)	Fraction of Limit
Annual	1.13E+00	5.65E+00%

H. Quarterly Dose Objective - Particulates, Iodines and Tritium  
PNPS Technical Specification 7.4.A.1  
Objective: 7.5 mrem Organ Dose

Period	Value (mrem)	Fraction of Limit
1st Quarter	8.97E-01	1.20E+01%
2nd Quarter	1.04E+00	1.39E+01%
3rd Quarter	2.31E-01	3.08E+00%
4th Quarter	6.24E-01	8.32E+00%

I. Annual Dose Objective - Particulates, Iodines and Tritium  
PNPS Technical Specification 7.4.A.2  
Objective: 15 mrem Organ Dose

Period	Value (mrem)	Fraction of Limit
Annual	2.56E+00	1.71E+01%

References

1. Boston Edison Company, "Pilgrim Nuclear Power Station Off-site Dose Calculation Manual," Revision 5, October 1991.
2. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10CFR50, Appendix I," Revision 1, October 1977.
3. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors," July 1977.
4. Boston Edison Company, "Pilgrim Station Unit 1 Appendix I Evaluation," April 1977.
5. Boston Edison Company, Pilgrim Nuclear Power Station, "Radioactive Effluent and Waste Disposal Report including Meteorological Data for January 1 through June 30, 1991," August 29, 1991.
6. Boston Edison Company, Pilgrim Nuclear Power Station, "Radioactive Effluent and Waste Disposal Report including Meteorological Data for July 1 through December 31, 1991," February 27, 1992.
7. YAEC Calculation No. BEC-023, entitled "Dose Assessment for January-December 1991 Effluent Report," March 27, 1992.
8. J.N. Hamawi, "AEOLUS," Yankee Atomic Electric Company, YAEC - 1120, January 1977.
9. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," June 1974.

APPENDIX A

Effluent Release Information

# EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

Supplemental Information (1991)

January - June 1991

Facility Pilgrim Nuclear Power Station

Licensee DPR-35

## 1. Regulatory Limits

- a. Fission and activation gases: 500 mrem/yr total body and 3000 mrem/yr for skin at site boundary.
- b,c. Iodines, particulates with half-lives >8 days, tritium: 1500 mrem/yr to any organ at site boundary.
- d. Liquid effluents: 0.06 mrem/month for total body and 0.20 mrem/month for any organ (without radwaste treatment).

## 2. Maximum Permissible Concentration

- a. Fission and activation gases: 10 CFR 20 Appendix B Table II
- b. Iodines: 10 CFR 20 Appendix B Table II
- c. Particulates, half-lives >8 days: 10 CFR 20 Appendix B Table II
- d. Liquid effluents: 2E-4  $\mu\text{Ci/ml}$  for entrained noble gases; 10 CFR 20 Appendix B Table II values for all other radionuclides.

## 3. Average Energy Not applicable

## 4. Methods used to determine radionuclide composition in effluents

- a. Fission and activation gases: High-purity Ge gamma spectroscopy for all gamma emitters; radiochemistry analysis for H-3, Fe-55 (liquids only), Sr-89, and Sr-90.
- b. Iodines:
- c. Particulates:
- d. Liquid effluents:

## 5. Batch Releases

### a. Liquid

	Quarter	
	1st	2nd
1. Number of batch releases:	24	28
2. Total time period for batch releases (minutes):	1.34E+3	1.14E+3
3. Maximum time period for a batch release (minutes):	1.35E+2	2.45E+2
4. Average time period for batch releases (minutes):	5.58E+1	4.07E+1
5. Minimum time period for a batch release (minutes):	1.00E+1	2.00E+1
6. Average stream flow during periods of release of effluent into a flowing stream (liter/min):	1.17E+6	6.64E+5

### b. Gaseous: Not applicable

## 6. Abnormal Releases

- a. Liquid: None
- b. Gaseous: None

TABLE 1A  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES  
January - June 1991

Unit	Quarter 1st	Quarter 2nd	Est. Total Error, %
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A. Fission and activation gases

1. Total release	Ci	3.38E+02	4.83E+02	22%
2. Average release rate for period	μCi/sec	4.29E+01	6.13E+01	
3. Percent of Tech. Spec. limit	%	*	*	

B. Iodines

1. Total iodine-131	Ci	1.28E-02	1.32E-02	20%
2. Average release rate for period	μCi/sec	1.62E-03	1.67E-03	
3. Percent of Tech. Spec. limit	%	*	*	

C. Particulates

1. Particul. with half-lives > 8 days	Ci	6.46E-04	9.97E-04	21%
2. Average release rate for period	μCi/sec	8.19E-05	1.26E-04	
3. Percent of Tech. Spec. limit	%	*	*	
4. Gross alpha radioactivity	Ci	3.48E-07	3.75E-07	

D. Tritium

1. Total release	Ci	1.32E+01	4.29E+00	20%
2. Average release rate for period	μCi/sec	1.67E+00	5.44E-01	
3. Percent of Tech. Spec. limit	%	*	*	

Notes for Table 1A:

- \* Percent of Technical Specification Limit Values in Section A.3 through D are to be provided in the annual supplemental dose assessment report to be issued prior to April 1, 1992.

1. NDA is no detectable activity.
2. LLD for gross alpha listed as NDA is 1E-11 μCi/ml.

TABLE 1B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
GASEOUS EFFLUENTS - ELEVATED RELEASE  
January - June 1991

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter 1st	Quarter 2nd	Quarter	Quarter
				No Batch Mode Releases During Period	

1. Fission gases

Kr-85m	Ci	5.53E+01	5.11E+01		
Kr-87	Ci	4.67E+00	9.29E+00		
Kr-88	Ci	2.70E+01	2.79E+01		
Xe-133	Ci	1.77E+02	2.65E+02		
Xe-135	Ci	9.47E+00	9.29E+00		
Xe-135m	Ci	2.53E+01	2.79E+01		
Xe-138	Ci	3.36E+01	7.89E+01		
Total for period	Ci	3.32E+02	4.69E+02		

2. Iodines

I-131	Ci	7.54E-03	8.01E-03		
I-133	Ci	1.37E-02	1.66E-02		
Total for period	Ci	2.12E-02	2.46E-02		

3. Particulates

Sr-89	Ci	2.43E-05	4.89E-05		
Sr-90	Ci	6.07E-07	NDA		
Cs-134	Ci	NDA	NDA		
Cs-137	Ci	NDA	NDA		
Ba/La-140	Ci	1.01E-04	1.64E-04		
Total for period	Ci	1.26E-04	2.13E-04		

4. Tritium

H-3	Ci	2.25E-01	9.19E-02		
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Notes for Table 1B:

1. NDA is no detectable activity.
2. LLDs for nuclides listed as NDA are as follows:

Fission gases: 1E-4  $\mu$ Ci/ml  
Iodines: 1E-12  $\mu$ Ci/ml  
Particulates: 1E-11  $\mu$ Ci/ml



TABLE 1C  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
GASEOUS EFFLUENTS - GROUND LEVEL RELEASE  
January - June 1991

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter 1st	Quarter 2nd	Quarter	Quarter
				No Batch Mode Releases During Period	

1. Fission gases

Kr-85m	Ci	NDA	NDA		
Kr-87	Ci	NDA	NDA		
Kr-88	Ci	NDA	NDA		
Xe-133	Ci	NDA	NDA		
Xe-135	Ci	5.93E+00	4.90E+00		
Xe-135m	Ci	NDA	NDA		
Xe-138	Ci	NDA	9.55E+00		
Total for period	Ci	5.93E+00	1.45E+01		

2. Iodines

I-131	Ci	5.27E-03	5.23E-03		
I-133	Ci	1.36E-02	1.30E-02		
Total for period	Ci	1.89E-02	1.82E-02		

3. Particulates

Co-60	Ci	NDA	1.07E-04		
Sr-89	Ci	4.83E-04	2.07E-04		
Sr-90	Ci	1.23E-05	NDA		
Cs-134	Ci	NDA	NDA		
Cs-137	Ci	NDA	1.84E-05		
Ba/La-140	Ci	2.45E-05	4.52E-04		
Total for period	Ci	5.20E-04	7.84E-04		

4. Tritium

H-3	Ci	1.30E+01	4.20E+00		
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Notes for Table 1C:

- NDA is no detectable activity.
- LLDs for nuclides listed as NDA are as follows:

Fission gases: 1E-4  $\mu$ Ci/ml  
Iodines: 1E-12  $\mu$ Ci/ml  
Particulates: 1E-11  $\mu$ Ci/ml



TABLE 2A  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
LIQUID EFFLUENTS SUMMATION OF ALL RELEASES  
January - June 1991

Unit	Quarter 1st	Quarter 2nd	Est. Total Error, %
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A. Fission and activation products

1. Total release (not including tritium, noble gases, or alpha)	Ci	2.57E-03	3.05E-03	12%
2. Average diluted concentration during period	μCi/ml	1.69E-09	4.03E-09	
3. Percent of applicable limit	%	*	*	

B. Tritium

1. Total release	Ci	7.66E-01	1.67E-02	9.4%
2. Average diluted concentration during period	μCi/ml	4.85E-07	2.21E-08	
3. Percent of applicable limit	%	*	*	

C. Dissolved and entrained gases

1. Total release	Ci	4.91E-05	NDA	16%
2. Average diluted concentration during period	μCi/ml	3.11E-11	NDA	
3. Percent of applicable limit	%	*	*	

D. Gross alpha radioactivity

1. Total release	Ci	NDA	NDA	
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E. Volume of waste released (prior to dilution)	liters	2.49E+05	7.66E+04	5.7%
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F. Volume of dilution water used during period	liters	1.58E+09	7.57E+08	10%
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Notes for Table 2A:

- \* Percent of Technical Specification Limit Values in Section A.3 through C.3 are to be provided in the annual supplemental dose assessment report to be issued prior to April 1, 1992.
- 1. NDA is no detectable activity.
- 2. LLD for gross alpha listed as NDA is 1E-7 μCi/ml.

TABLE 2B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1990)  
LIQUID EFFLUENTS  
January - June 1991

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
No Continuous Mode Releases during period				1st	2nd

1. Fission and Activation Products

Na-24	Ci			5.56E-05	NDA
Cr-51	Ci			NDA	1.85E-04
Mn-54	Ci			1.09E-04	1.62E-04
Fe-55	Ci			2.12E-04	6.85E-04
Fe-59	Ci			NDA	1.77E-05
Co-58	Ci			1.85E-05	2.13E-05
Co-60	Ci			7.07E-04	1.42E-03
Zn-65	Ci			NDA	1.83E-05
Sr-89	Ci			1.05E-05	1.20E-05
Sr-90	Ci			7.07E-06	1.21E-05
Zr/Nb-95	Ci			NDA	4.00E-05
Ag-110m	Ci			NDA	1.78E-05
Ru-103	Ci			NDA	9.95E-06
I-131	Ci			1.55E-05	2.90E-06
Cs-134	Ci			1.92E-05	2.14E-07
Cs-137	Ci			1.52E-03	3.82E-04
Ba/La-140	Ci			4.39E-07	7.79E-06
Ce-141	Ci			NDA	1.44E-05
Ce/Pr-144	Ci			NDA	3.74E-05
Total for period	Ci			2.67E-3	3.05E-3

2. Dissolved and Entrained Noble Gases

Xe-133	Ci			6.80E-07	NDA
Xe-135	Ci			4.84E-05	NDA
Total for period	Ci			4.91E-05	NDA

Notes for Table 2B:

1. NDA is no detectable activity.
2. LLDs for nuclides listed as NDA are as follows:

Sr-89	5E-8 $\mu$ Ci/ml
I-131	1E-6 $\mu$ Ci/ml
Xe-133, 135	1E-5 $\mu$ Ci/ml
All Others	5E-7 $\mu$ Ci/ml

# EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

Supplemental Information (1991)

July - December 1991

Facility Pilgrim Nuclear Power Station

Licensee DPR-35

## 1. Regulatory Limits

- a. Fission and activation gases: 500 mrem/yr total body and 3000 mrem/yr for skin at site boundary.
- b,c. Iodines, particulates with half-lives >8 days, tritium: 1500 mrem/yr to any organ at site boundary.
- d. Liquid effluents: 0.06 mrem/month for total body and 0.20 mrem/month for any organ (without radwaste treatment).

## 2. Maximum Permissible Concentration

- a. Fission and activation gases: 10 CFR 20 Appendix B Table II
- b. Iodines: 10 CFR 20 Appendix B Table II
- c. Particulates, half-lives >8 days: 10 CFR 20 Appendix B Table II
- d. Liquid effluents: 2E-4  $\mu$ Ci/ml for entrained noble gases; 10 CFR 20 Appendix B Table II values for all other radionuclides.

## 3. Average Energy Not applicable

## 4. Methods used to determine radionuclide composition in effluents

- a. Fission and activation gases: High-purity Ge gamma spectroscopy for
- b. Iodines: all gamma emitters; radiochemistry
- c. Particulates: analysis for H-3, Fe-55 (liquids only),
- d. Liquid effluents: Sr-89, and Sr-90.

## 5. Batch Releases

### a. Liquid

	Quarter	
	3rd	4th
1. Number of batch releases:	58	14
2. Total time period for batch releases (minutes):	3.94E+3	8.65E+2
3. Maximum time period for a batch release (minutes):	1.65E+2	9.00E+1
4. Average time period for batch releases (minutes):	6.78E+1	6.18E+1
5. Minimum time period for a batch release (minutes):	2.50E+1	3.00E+1
6. Average stream flow during periods of release of effluent into a flowing stream (liter/min):	7.33E+8	1.08E+9

### b. Gaseous: Not applicable

## 6. Abnormal Releases

- a. Liquid: None
- b. Gaseous: None

TABLE 1A  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES  
July - December 1991

Unit	Quarter 3rd	Quarter 4th	Est. Total Error, %
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A. Fission and activation gases

1. Total release	Ci	1.17E+03	2.32E+02	22%
2. Average release rate for period	μCi/sec	1.48E+02	2.94E+01	
3. Percent of Tech. Spec. limit	%	*	*	

B. Iodines

1. Total iodine-131	Ci	3.47E-03	8.97E-03	20%
2. Average release rate for period	μCi/sec	4.40E-04	1.14E-03	
3. Percent of Tech. Spec. limit	%	*	*	

C. Particulates

1. Particul. with half-lives > 8 days	Ci	2.89E-03	4.10E-03	21%
2. Average release rate for period	μCi/sec	3.67E-04	5.20E-04	
3. Percent of Tech. Spec. limit	%	*	*	
4. Gross alpha radioactivity	Ci	NDA	NDA	

D. Tritium

1. Total release	Ci	2.01E+00	2.27E+00	20%
2. Average release rate for period	μCi/sec	2.55E-01	2.88E-01	
3. Percent of Tech. Spec. limit	%	*	*	

Notes for Table 1A:

- \* Percent of Technical Specification Limit Values in Section A.3 through D.3 are to be provided in the annual supplemental dose assessment report to be issued prior to April 1, 1992.

1. NDA is no detectable activity.

2. LLD for gross alpha listed as NDA is 1E-11 μCi/ml.



TABLE 1B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
GASEOUS EFFLUENTS - ELEVATED RELEASE  
July - December 1991

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter 3rd	Quarter 4th	Quarter No Batch Mode Releases During Period	Quarter
1. Fission gases					
Kr-85m	Ci	6.71E+01	1.59E+01	N/A	N/A
Kr-87	Ci	1.66E+02	5.83E+00	N/A	N/A
Kr-88	Ci	1.75E+02	9.05E+00	N/A	N/A
Xe-133	Ci	2.79E+01	2.60E+01	N/A	N/A
Xe-135	Ci	2.21E+02	6.99E+00	N/A	N/A
Xe-135m	Ci	9.69E+01	2.78E+01	N/A	N/A
Xe-138	Ci	4.04E+02	1.05E+02	N/A	N/A
Total for period	Ci	1.16E+03	1.37E+02	N/A	N/A
2. Iodines					
I-131	Ci	3.02E-03	7.31E-03	N/A	N/A
I-133	Ci	1.79E-02	4.19E-02	N/A	N/A
Total for period	Ci	2.09E-02	4.92E-02	N/A	N/A
3. Particulates					
Mn-54	Ci	NDA	3.15E-06	N/A	N/A
Co-58	Ci	NDA	1.12E-06	N/A	N/A
Co-60	Ci	NDA	6.21E-06	N/A	N/A
Sr-89	Ci	5.13E-04	4.56E-04	N/A	N/A
Sr-90	Ci	2.76E-06	3.27E-06	N/A	N/A
Cs-134	Ci	NDA	NDA	N/A	N/A
Cs-137	Ci	NDA	NDA	N/A	N/A
Ba/La-140	Ci	9.45E-04	1.05E-03	N/A	N/A
Ce-141		NDA	1.00E-06	N/A	N/A
Total for period	Ci	1.46E-03	1.52E-03	N/A	N/A
4. Tritium					
H-3	Ci	2.00E-01	1.12E-01	N/A	N/A

Notes for Table 1B:

1. NDA is no detectable activity.
2. LLDs for nuclides listed as NDA are as follows:

Fission gases: 1E-4  $\mu$ Ci/ml  
Iodines: 1E-12  $\mu$ Ci/ml  
Particulates: 1E-11  $\mu$ Ci/ml

TABLE 1C  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
GASEOUS EFFLUENTS - GROUND LEVEL RELEASE  
July - December 1991

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter 3rd	Quarter 4th	Quarter No Batch Mode Releases During Period	Quarter
1. Fission gases					
Kr-85m	Ci	NDA	NDA	N/A	N/A
Kr-87	Ci	NDA	NDA	N/A	N/A
Kr-88	Ci	NDA	NDA	N/A	N/A
Xe-133	Ci	2.55E-01	1.82E+00	N/A	N/A
Xe-135	Ci	1.05E+01	2.80E+01	N/A	N/A
Xe-135m	Ci	NDA	5.14E+00	N/A	N/A
Xe-138	Ci	NDA	NDA	N/A	N/A
Total for period	Ci	1.08E+01	3.50E+01	N/A	N/A
2. Iodines					
I-131	Ci	4.54E-04	1.66E-03	N/A	N/A
I-133	Ci	3.63E-03	1.52E-02	N/A	N/A
Total for period	Ci	4.08E-03	1.68E-02	N/A	N/A
3. Particulates					
Co-60	Ci	2.14E-05	NDA	N/A	N/A
Sr-89	Ci	1.05E-03	5.73E-04	N/A	N/A
Sr-90	Ci	2.80E-06	2.97E-06	N/A	N/A
Cs-134	Ci	NDA	NDA	N/A	N/A
Cs-137	Ci	NDA	NDA	N/A	N/A
Ba/La-140	Ci	3.56E-04	2.01E-03	N/A	N/A
Total for period	Ci	1.43E-03	2.58E-03	N/A	N/A
4. Tritium					
H-3	Ci	1.81E+00	2.16E+00	N/A	N/A

Notes for Table 1C:

1. NDA is no detectable activity.
2. LLDs for nuclides listed as NDA are as follows:

Fission gases: 1E-4  $\mu\text{Ci}/\text{ml}$   
Iodines: 1E-12  $\mu\text{Ci}/\text{ml}$   
Particulates: 1E-11  $\mu\text{Ci}/\text{ml}$

TABLE 2A  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)  
LIQUID EFFLUENTS SUMMATION OF ALL RELEASES  
July - December 1991

Unit	Quarter 3rd	Quarter 4th	Est. Total Error, %
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A. Fission and activation products

1. Total release (not including tritium, noble gases, or alpha)	Ci	2.72E-02	1.09E-03	12%
2. Average diluted concentration during period	µCi/ml	9.93E-09	1.16E-09	
3. Percent of applicable limit	%	*	*	

B. Tritium

1. Total release	Ci	8.71E-01	6.86E-01	9.4%
2. Average diluted concentration during period	µCi/ml	3.18E-06	7.32E-07	
3. Percent of applicable limit	%	*	*	

C. Dissolved and entrained gases

1. Total release	Ci	1.07E-03	4.94E-03	16%
2. Average diluted concentration during period	µCi/ml	3.89E-10	5.27E-09	
3. Percent of applicable limit	%	*	*	

D. Gross alpha radioactivity

1. Total release	Ci	NDA	NDA	34%
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E. Volume of waste released (prior to dilution)

liters	2.16E+06	2.23E+05	5.7%
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F. Volume of dilution water used during period

liters	2.74E+09	9.37E+08	10%
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Notes for Table 2A:

- \* Percent of Technical Specification Limit Values in Section A.3 through C.3 are to be provided in the annual supplemental dose assessment report to be issued prior to April 1, 1992.

1. NDA is no detectable activity.

2. LLD for gross alpha listed as NDA is 1E-7 µCi/ml.



TABLE 2B  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1990)  
LIQUID EFFLUENTS  
July - December 1991

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
		No Continuous Mode Releases During Period		3rd	4th

1. Fission and Activation Products

Cr-51	Ci	N/A	N/A	6.24E-04	2.42E-04
Mn-54	Ci	N/A	N/A	1.17E-03	2.22E-05
Fe-55	Ci	N/A	N/A	5.74E-04	5.32E-05
Fe-59	Ci	N/A	N/A	4.77E-05	NDA
Co-58	Ci	N/A	N/A	4.51E-04	NDA
Co-60	Ci	N/A	N/A	7.53E-03	1.89E-04
Zn-65	Ci	N/A	N/A	NDA	NDA
Sr-89	Ci	N/A	N/A	NDA	NDA
Sr-90	Ci	N/A	N/A	5.32E-05	4.18E-06
Y-92	Ci	N/A	N/A	NDA	2.49E-04
Zr/Nb-95	Ci	N/A	N/A	1.04E-04	NDA
Mo-99/Tc-99m	Ci	N/A	N/A	1.94E-04	7.66E-05
Ru-103	Ci	N/A	N/A	3.81E-05	NDA
I-131	Ci	N/A	N/A	4.08E-07	NDA
Cs-134	Ci	N/A	N/A	7.53E-04	NDA
Cs-137	Ci	N/A	N/A	1.50E-02	9.94E-05
Ba/La-140	Ci	N/A	N/A	1.07E-04	1.12E-04
Ce-141	Ci	N/A	N/A	5.79E-05	NDA
Ce/Pr-144	Ci	N/A	N/A	2.17E-04	NDA
Np-239	Ci	N/A	N/A	2.47E-04	4.24E-05
Total for period	Ci	N/A	N/A	2.72E-02	1.09E-03

2. Dissolved and Entrained Noble Gases

Xe-133	Ci	N/A	N/A	2.60E-04	8.46E-04
Xe-135	Ci	N/A	N/A	8.07E-04	4.09E-03
Total for period	Ci	N/A	N/A	1.07E-03	4.94E-03

Notes for Table 2B:

1. NDA is no detectable activity.
2. LLDs for nuclides listed as NDA are as follows:

Sr-89	5E-8 $\mu$ Ci/ml
I-131	1E-6 $\mu$ Ci/ml
Xe-133, 135	1E-5 $\mu$ Ci/ml
All Others	5E-7 $\mu$ Ci/ml

APPENDIX B

Atmospheric Dispersion and Deposition Factors

## APPENDIX B

### Atmospheric Dispersion and Deposition Factors

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Table B-1

## Undepleted X/Q Factors for Reactor Building Vent

RECD 1st Quarter 1991 X/Q Tables

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH1/Q BEFORE REFLECTION \* (SEC/M3)

DOWNWIND SECTOR	NO. 085	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	107	3.312E-05	1.027E-05	3.44E-06	1.873E-06	1.226E-06	6.805E-07	4.481E-07	3.254E-07
NNE	200	3.687E-05	1.084E-05	3.719E-06	2.076E-06	1.366E-06	7.668E-07	4.859E-07	3.500E-07
NE	260	5.316E-05	1.578E-05	5.058E-06	2.778E-06	1.821E-06	1.015E-06	6.493E-07	4.865E-07
ENE	184	4.032E-05	1.183E-05	3.949E-06	2.185E-06	1.434E-06	7.906E-07	5.179E-07	3.749E-07
E	142	3.737E-05	1.114E-05	3.854E-06	2.107E-06	1.366E-06	7.402E-07	4.807E-07	3.456E-07
ESE	194	2.704E-05	8.055E-06	2.787E-06	1.519E-06	9.845E-07	5.302E-07	3.436E-07	2.459E-07
SE	198	2.643E-05	7.962E-06	2.680E-06	1.444E-06	9.324E-07	5.064E-07	3.302E-07	2.351E-07
SSE	104	1.841E-05	5.503E-06	1.784E-06	9.818E-07	6.449E-07	3.549E-07	2.320E-07	1.676E-07
S	91	1.799E-05	5.345E-06	1.566E-06	8.600E-07	5.591E-07	3.086E-07	2.032E-07	1.475E-07
SSW	100	1.401E-05	4.278E-06	1.341E-06	7.335E-07	4.762E-07	2.564E-07	1.656E-07	1.166E-07
SW	97	1.127E-05	3.390E-06	1.062E-06	5.814E-07	3.777E-07	2.027E-07	1.306E-07	9.356E-08
WSW	93	1.429E-05	4.309E-06	1.316E-06	7.157E-07	4.642E-07	2.527E-07	1.648E-07	1.187E-07
W	58	1.143E-05	3.465E-06	1.059E-06	6.462E-07	4.243E-07	2.306E-07	1.318E-07	9.755E-08
WNW	39	9.328E-06	2.882E-06	8.014E-07	4.410E-07	2.892E-07	1.608E-07	1.164E-07	8.445E-08
NW	61	1.568E-05	4.685E-06	1.331E-06	8.478E-07	5.377E-07	3.079E-07	2.016E-07	1.457E-07
NNW	67	1.513E-05	4.415E-06	1.304E-06	8.326E-07	5.454E-07	2.996E-07	1.939E-07	1.417E-07
AVERAGE	2095	3.393E-05	7.108E-06	2.340E-06	1.289E-06	8.419E-07	4.615E-07	3.013E-07	2.176E-07

DOWNWIND SECTOR	NO. 085	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	107	2.520E-07	2.031E-07	1.687E-07	1.431E-07	1.237E-07	7.172E-08	4.914E-08	2.900E-08
NNE	200	2.699E-07	2.167E-07	1.793E-07	1.515E-07	1.305E-07	7.492E-08	5.094E-08	2.967E-08
NE	260	3.765E-07	3.036E-07	2.522E-07	2.143E-07	1.855E-07	1.082E-07	7.431E-08	4.393E-08
ENE	184	2.898E-07	2.333E-07	1.925E-07	1.639E-07	1.415E-07	8.183E-08	5.596E-08	3.291E-08
E	242	2.655E-07	2.125E-07	1.753E-07	1.480E-07	1.272E-07	7.261E-08	4.919E-08	2.857E-08
ESE	194	1.897E-07	1.519E-07	1.254E-07	1.058E-07	9.092E-08	5.189E-08	3.515E-08	2.040E-08
SE	198	1.827E-07	1.464E-07	1.231E-07	1.125E-07	9.687E-08	5.053E-08	3.429E-08	1.993E-08
SSE	104	1.292E-07	1.039E-07	8.614E-08	7.303E-08	6.307E-08	3.660E-08	2.504E-08	1.470E-08
S	91	1.140E-07	9.177E-08	7.618E-08	6.155E-08	5.188E-08	3.245E-08	2.221E-08	1.308E-08
SSW	100	9.063E-08	7.333E-08	5.958E-08	5.018E-08	4.309E-08	2.453E-08	1.653E-08	9.480E-09
SW	97	7.192E-08	5.714E-08	4.709E-08	3.964E-08	3.403E-08	1.937E-08	1.311E-08	7.599E-09
WSW	93	9.114E-08	7.301E-08	6.037E-08	5.410E-08	4.832E-08	2.522E-08	1.711E-08	9.930E-09
W	58	7.463E-08	5.970E-08	4.928E-08	4.189E-08	3.580E-08	2.054E-08	1.392E-08	8.042E-09
WNW	39	6.524E-08	5.252E-08	4.363E-08	3.365E-08	2.910E-08	1.693E-08	1.140E-08	6.826E-09
NW	61	1.124E-07	9.036E-08	7.490E-08	6.348E-08	5.483E-08	3.180E-08	2.174E-08	1.273E-08
NNW	67	1.095E-07	8.806E-08	7.297E-08	6.173E-08	5.322E-08	3.164E-08	2.091E-08	1.227E-08
AVERAGE	2095	1.678E-07	1.348E-07	1.125E-07	9.519E-08	8.204E-08	4.686E-08	3.195E-08	1.869E-08

DOWNWIND SECTOR	NO. 085	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	107	2.001E-08	1.508E-08	1.207E-08	9.990E-09	8.459E-09	7.316E-09	6.417E-09	
NNE	200	2.032E-08	1.527E-08	1.212E-08	9.998E-09	8.425E-09	7.267E-09	6.357E-09	
NE	260	3.036E-08	2.291E-08	1.834E-08	1.521E-08	1.287E-08	1.113E-08	9.758E-09	
ENE	184	2.266E-08	1.706E-08	1.363E-08	1.128E-08	9.530E-09	8.236E-09	7.218E-09	
E	242	1.955E-08	1.465E-08	1.167E-08	9.632E-09	8.126E-09	7.020E-09	6.151E-09	
ESE	194	1.377E-08	1.047E-08	8.337E-09	6.885E-09	5.811E-09	5.023E-09	4.404E-09	
SE	198	1.368E-08	1.027E-08	8.194E-09	6.778E-09	5.729E-09	4.955E-09	4.349E-09	
SSE	104	1.017E-08	7.626E-09	6.094E-09	5.045E-09	4.263E-09	3.682E-09	3.207E-09	
S	91	9.078E-09	6.811E-09	5.451E-09	4.520E-09	3.826E-09	3.312E-09	2.908E-09	
SSW	100	6.450E-09	4.814E-09	3.818E-09	3.143E-09	2.645E-09	2.279E-09	1.993E-09	
SW	97	5.201E-09	3.897E-09	3.101E-09	2.559E-09	2.158E-09	1.863E-09	1.632E-09	
WSW	93	6.801E-09	5.102E-09	4.064E-09	3.358E-09	2.835E-09	2.448E-09	2.146E-09	
W	58	5.485E-09	4.102E-09	3.259E-09	2.684E-09	2.258E-09	1.943E-09	1.697E-09	
WNW	39	4.704E-09	3.543E-09	2.833E-09	2.346E-09	1.973E-09	1.712E-09	1.500E-09	
NW	61	8.754E-09	6.580E-09	5.252E-09	4.342E-09	3.665E-09	3.162E-09	2.767E-09	
NNW	67	8.438E-09	6.345E-09	5.064E-09	4.189E-09	3.538E-09	3.059E-09	2.681E-09	
AVERAGE	2095	1.285E-08	9.656E-09	7.706E-09	6.373E-09	5.383E-09	4.650E-09	4.075E-09	

Table B-1

## Undepleted X/Q Factors for Reactor Building Vent

BECo 2nd quarter 1995 w/q tables

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CHI/Q BEFORE DEPLETION (SEC/M3)

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	86	2.397E-05	6.974E-06	2.562E-06	1.420E-06	9.251E-07	4.966E-07	3.199E-07	2.290E-07
NNE	371	6.367E-05	1.871E-05	6.313E-06	3.542E-06	2.326E-06	1.271E-06	8.279E-07	5.966E-07
NE	366	7.345E-05	2.142E-05	6.787E-06	3.706E-06	2.428E-06	1.364E-06	9.060E-07	6.623E-07
ENE	155	5.728E-05	1.673E-05	5.160E-06	2.854E-06	1.889E-06	1.070E-06	7.118E-07	5.208E-07
E	110	4.479E-05	1.316E-05	4.157E-06	2.260E-06	1.475E-06	8.295E-07	5.517E-07	4.033E-07
ESE	102	2.854E-05	8.372E-06	2.665E-06	1.461E-06	9.809E-07	5.461E-07	3.595E-07	2.613E-07
SE	83	2.323E-05	6.795E-06	2.505E-06	1.400E-06	9.252E-07	5.076E-07	3.007E-07	2.170E-07
SSE	90	3.137E-05	9.148E-06	2.999E-06	1.527E-06	1.013E-06	5.593E-07	3.654E-07	2.643E-07
S	73	2.512E-05	7.285E-06	2.021E-06	1.117E-06	7.345E-07	4.043E-07	2.648E-07	1.919E-07
SSW	147	7.813E-05	8.137E-06	2.459E-06	1.347E-06	9.036E-07	4.967E-07	3.245E-07	2.348E-07
SW	186	3.250E-05	9.502E-06	3.015E-06	1.656E-06	1.079E-06	5.821E-07	3.772E-07	2.712E-07
WSW	159	4.067E-05	1.214E-05	3.711E-06	1.989E-06	1.279E-06	6.917E-07	4.587E-07	3.321E-07
W	78	2.063E-05	6.066E-06	1.937E-06	1.159E-06	7.491E-07	4.053E-07	2.396E-07	1.723E-07
WNW	44	1.118E-05	3.329E-06	1.138E-06	6.292E-07	4.119E-07	2.231E-07	1.588E-07	1.140E-07
NW	57	2.555E-05	7.479E-06	2.565E-06	1.431E-06	9.423E-07	5.140E-07	3.340E-07	2.406E-07
NNW	32	1.247E-05	3.717E-06	1.285E-06	7.145E-07	4.687E-07	2.548E-07	1.645E-07	1.180E-07
AVERAGE	2139	3.391E-05	9.936E-06	3.209E-06	1.766E-06	1.158E-06	6.389E-07	4.165E-07	3.019E-07

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	86	1.759E-07	1.407E-07	1.159E-07	9.737E-08	8.543E-08	4.704E-08	3.167E-08	1.827E-08
NNE	371	4.602E-07	3.697E-07	3.061E-07	2.567E-07	2.229E-07	1.282E-07	8.726E-08	5.096E-08
NE	366	5.150E-07	4.167E-07	3.473E-07	2.958E-07	2.565E-07	1.504E-07	1.038E-07	6.197E-08
ENE	155	4.054E-07	3.286E-07	2.743E-07	2.340E-07	2.032E-07	1.199E-07	8.305E-08	4.967E-08
E	110	3.132E-07	2.532E-07	2.109E-07	1.796E-07	1.557E-07	9.129E-08	6.296E-08	3.750E-08
ESE	102	2.028E-07	1.638E-07	1.364E-07	1.160E-07	1.005E-07	.881E-08	4.049E-08	2.398E-08
SE	83	1.677E-07	1.350E-07	1.231E-07	1.042E-07	8.989E-08	5.194E-08	3.549E-08	2.083E-08
SSE	90	2.047E-07	1.651E-07	1.371E-07	1.163E-07	1.004E-07	5.835E-08	.004E-08	2.362E-08
S	73	1.488E-07	1.200E-07	9.988E-08	8.452E-08	7.299E-08	4.230E-08	2.900E-08	1.713E-08
SSW	147	1.820E-07	1.468E-07	1.220E-07	1.034E-07	8.930E-08	5.176E-08	3.547E-08	2.092E-08
SW	186	2.090E-07	1.677E-07	1.387E-07	1.170E-07	1.006E-07	5.745E-08	3.893E-08	2.266E-08
WSW	159	2.558E-07	2.054E-07	1.871E-07	1.583E-07	1.365E-07	7.144E-08	4.862E-08	2.844E-08
W	78	1.327E-07	1.063E-07	8.784E-08	7.406E-08	6.366E-08	3.625E-08	2.455E-08	1.428E-08
WNW	44	8.758E-08	7.015E-08	5.268E-08	4.044E-08	3.622E-08	2.187E-08	1.485E-08	8.640E-09
NW	57	1.856E-07	1.492E-07	1.235E-07	1.043E-07	8.144E-08	5.161E-08	3.514E-08	2.053E-08
NNW	32	9.063E-08	7.255E-08	5.898E-08	5.049E-08	4.341E-08	2.480E-08	1.679E-08	9.709E-09
AVERAGE	2139	2.336E-07	1.882E-07	1.576E-07	1.337E-07	1.154E-07	6.646E-08	4.551E-08	2.682E-08

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	86	1.244E-08	9.290E-09	7.367E-09	6.066E-09	5.106E-09	4.409E-09	3.859E-09	
NNE	371	3.496E-08	2.624E-08	2.091E-08	1.727E-08	1.457E-08	1.258E-08	1.101E-08	
NE	366	4.304E-08	3.261E-08	2.619E-08	2.178E-08	1.847E-08	1.601E-08	1.407E-08	
ENE	155	3.453E-08	2.617E-08	2.102E-08	1.747E-08	1.481E-08	1.282E-08	1.125E-08	
E	110	2.602E-08	1.971E-08	1.583E-08	1.316E-08	1.116E-08	9.666E-09	8.493E-09	
ESE	102	1.659E-08	1.252E-08	1.038E-08	8.314E-09	7.034E-09	6.079E-09	5.329E-09	
SE	83	1.433E-08	1.076E-08	8.598E-09	7.108E-09	6.000E-09	5.181E-09	4.536E-09	
SSE	90	1.030E-08	1.229E-08	9.820E-09	8.130E-09	6.870E-09	5.933E-09	5.200E-09	
S	73	1.182E-08	8.928E-09	7.142E-09	5.919E-09	5.008E-09	4.335E-09	3.804E-09	
SSW	147	1.644E-08	1.089E-08	8.708E-09	7.214E-09	6.102E-09	5.279E-09	4.631E-09	
SW	186	1.554E-08	1.167E-08	9.290E-09	7.677E-09	6.483E-09	5.609E-09	4.921E-09	
WSW	159	1.957E-08	1.473E-08	1.177E-08	9.756E-09	8.258E-09	7.183E-09	6.285E-09	
W	78	9.790E-09	7.349E-09	5.855E-09	4.841E-09	4.190E-09	3.541E-09	3.108E-09	
WNW	44	5.920E-09	4.439E-09	3.534E-09	2.917E-09	2.459E-09	2.123E-09	1.858E-09	
NW	57	1.408E-08	1.057E-08	8.417E-09	6.950E-09	5.860E-09	5.058E-09	4.427E-09	
NNW	32	6.624E-09	4.951E-09	3.932E-09	3.239E-09	2.725E-09	2.348E-09	2.052E-09	
AVERAGE	2139	1.850E-08	1.395E-08	1.115E-08	9.238E-09	7.813E-09	6.758E-09	5.927E-09	



Table B-1

## Undepleted X/Q Factors for Reactor Building Vent

SECO 3rd quarter 1991 X/Q tables

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH/D BEFORE DEPLETION \* (SEC/MS)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	156	5.286E-05	1.547E-05	5.164E-06	2.887E-06	1.908E-06	1.049E-06	6.853E-07	4.955E-07
NNE	450	8.426E-05	2.474E-05	8.177E-06	4.471E-06	2.916E-06	1.615E-06	1.064E-06	7.729E-07
NE	322	8.561E-05	2.494E-05	7.637E-06	4.056E-06	2.617E-06	1.498E-06	1.014E-06	7.492E-07
ENE	177	6.264E-05	1.825E-05	5.736E-06	3.122E-06	2.042E-06	1.153E-06	7.692E-07	5.638E-07
E	105	3.560E-05	1.041E-05	3.385E-06	1.853E-06	1.215E-06	6.720E-07	4.441E-07	3.232E-07
ESE	79	3.684E-05	1.076E-05	3.354E-06	1.824E-06	1.194E-06	6.745E-07	4.501E-07	3.300E-07
SE	87	3.315E-05	9.708E-06	3.426E-06	1.935E-06	1.292E-06	7.184E-07	4.278E-07	3.094E-07
SSE	80	2.237E-05	6.613E-06	2.144E-06	1.071E-06	7.071E-07	3.891E-07	2.548E-07	1.845E-07
S	88	2.415E-05	7.054E-06	1.893E-06	1.016E-06	6.716E-07	3.747E-07	2.473E-07	1.801E-07
SSW	95	1.847E-05	5.349E-06	1.589E-06	8.644E-07	5.662E-07	3.109E-07	2.036E-07	1.479E-07
SW	90	2.121E-05	6.292E-06	1.955E-06	1.072E-06	6.995E-07	3.783E-07	2.450E-07	1.760E-07
WSW	94	2.728E-05	7.907E-06	2.557E-06	1.410E-06	9.206E-07	4.967E-07	3.216E-07	2.311E-07
W	67	2.828E-05	8.335E-06	2.437E-06	1.460E-06	9.321E-07	5.308E-07	3.193E-07	2.326E-07
WNW	80	2.864E-05	7.841E-06	2.712E-06	1.495E-06	9.750E-07	5.316E-07	3.101E-07	2.247E-07
NW	47	2.601E-05	7.612E-06	2.591E-06	1.415E-06	9.194E-07	5.064E-07	3.227E-07	2.412E-07
NNW	68	3.525E-05	1.030E-05	3.422E-06	1.893E-06	1.243E-06	6.895E-07	4.538E-07	3.296E-07
AVERAGE	2085	3.879E-05	1.135E-05	3.632E-06	1.990E-06	1.302E-06	7.244E-07	4.758E-07	3.464E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	156	3.833E-07	3.088E-07	2.562E-07	2.170E-07	1.873E-07	1.084E-07	7.420E-08	4.739E-08
NNE	450	5.981E-07	4.819E-07	4.001E-07	3.377E-07	2.933E-07	1.701E-07	1.165E-07	6.870E-08
NE	322	5.851E-07	4.752E-07	3.975E-07	3.400E-07	2.956E-07	1.751E-07	1.214E-07	7.342E-08
ENE	177	4.389E-07	3.555E-07	2.966E-07	2.529E-07	2.195E-07	1.290E-07	8.422E-08	5.336E-08
E	105	2.507E-07	2.024E-07	1.654E-07	1.431E-07	1.238E-07	7.213E-08	4.956E-08	2.939E-08
ESE	79	2.569E-07	2.082E-07	1.737E-07	1.482E-07	1.287E-07	7.875E-08	5.241E-08	3.136E-08
SE	87	2.402E-07	1.939E-07	1.774E-07	1.506E-07	1.303E-07	7.611E-08	5.236E-08	3.096E-08
SSE	80	1.430E-07	1.153E-07	9.589E-08	8.163E-08	7.044E-08	4.111E-08	2.825E-08	1.668E-08
S	88	1.398E-07	1.131E-07	9.421E-08	8.024E-08	6.952E-08	4.075E-08	2.809E-08	1.667E-08
SSW	95	1.147E-07	9.263E-08	7.704E-08	6.562E-08	5.654E-08	3.266E-08	2.258E-08	1.341E-08
SW	90	1.353E-07	1.085E-07	8.966E-08	7.569E-08	6.511E-08	3.727E-08	2.529E-08	1.469E-08
WSW	94	1.782E-07	1.479E-07	1.300E-07	1.095E-07	9.409E-08	4.868E-08	3.298E-08	1.918E-08
W	67	1.802E-07	1.454E-07	1.210E-07	1.028E-07	8.902E-08	5.193E-08	3.570E-08	2.117E-08
WNW	80	2.117E-07	1.699E-07	1.277E-07	1.079E-07	9.268E-08	5.321E-08	3.613E-08	2.104E-08
NW	47	1.864E-07	1.499E-07	1.243E-07	1.052E-07	9.073E-08	5.225E-08	3.563E-08	2.091E-08
NNW	68	2.553E-07	2.059E-07	1.710E-07	1.450E-07	1.253E-07	7.269E-08	4.981E-08	2.939E-08
AVERAGE	2085	2.686E-07	2.168E-07	1.813E-07	1.540E-07	1.333E-07	7.734E-08	5.314E-08	3.150E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	156	2.999E-08	2.255E-08	1.800E-08	1.468E-08	1.256E-08	1.064E-08	9.489E-09	
NNE	450	4.740E-08	3.575E-08	2.860E-08	2.371E-08	2.007E-08	1.737E-08	1.524E-08	
NE	322	5.132E-08	3.909E-08	3.154E-08	2.633E-08	2.242E-08	1.949E-08	1.718E-08	
ENE	177	3.712E-08	2.815E-08	2.263E-08	1.883E-08	1.598E-08	1.385E-08	1.218E-08	
E	105	2.034E-08	1.537E-08	1.231E-08	1.022E-08	8.656E-09	7.495E-09	6.561E-09	
ESE	79	2.182E-08	1.655E-08	1.31E-08	1.108E-08	9.403E-09	8.150E-09	7.166E-09	
SE	87	2.138E-08	1.611E-08	1.288E-08	1.066E-08	9.007E-09	7.772E-09	6.802E-09	
SSE	80	1.152E-08	8.689E-09	6.949E-09	5.756E-09	4.866E-09	4.203E-09	3.683E-09	
S	88	1.157E-08	8.758E-09	7.027E-09	5.838E-09	4.950E-09	4.287E-09	3.767E-09	
SSW	95	9.309E-09	7.052E-09	5.658E-09	4.703E-09	3.992E-09	3.465E-09	3.049E-09	
SW	90	1.008E-08	7.563E-09	6.024E-09	4.977E-09	4.205E-09	3.632E-09	3.184E-09	
WSW	94	1.314E-08	9.851E-09	7.839E-09	6.474E-09	5.463E-09	4.726E-09	4.166E-09	
W	67	1.465E-08	1.108E-08	8.882E-09	7.375E-09	6.249E-09	5.411E-09	4.752E-09	
WNW	80	1.441E-08	1.080E-08	8.603E-09	7.104E-09	5.963E-09	5.177E-09	4.534E-09	
NW	47	1.439E-08	1.083E-08	8.649E-09	7.162E-09	6.057E-09	5.242E-09	4.600E-09	
NNW	68	2.026E-08	1.527E-08	1.221E-08	1.011E-08	8.552E-09	7.394E-09	6.484E-09	
AVERAGE	2085	2.179E-08	1.647E-08	1.320E-08	1.095E-08	9.276E-09	8.031E-09	7.052E-09	



Table B-1

## Undepleted X/Q Factors for Reactor Building Vent

BECO 4th quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH1/Q BEFORE DEPLETION \* (SEC/M3)

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	133	4.247E-05	1.268E-05	4.054E-06	2.271E-06	1.506E-06	8.369E-07	5.491E-07	3.980E-07
NNE	201	3.900E-05	1.194E-05	3.801E-06	2.103E-06	1.381E-06	7.621E-07	4.997E-07	3.621E-07
NE	237	5.407E-05	1.671E-05	5.124E-06	2.816E-06	1.814E-06	1.030E-06	6.807E-07	4.957E-07
ENE	232	5.874E-05	1.813E-05	5.665E-06	3.152E-06	2.079E-06	1.153E-06	7.574E-07	5.495E-07
E	223	4.041E-05	1.251E-05	4.120E-06	2.272E-06	1.484E-06	8.087E-07	5.261E-07	3.787E-07
ESE	191	3.352E-05	1.032E-05	3.443E-06	1.890E-06	1.240E-06	6.701E-07	4.333E-07	3.105E-07
SE	178	2.837E-05	8.69E-06	3.041E-06	1.665E-06	1.080E-06	5.769E-07	3.710E-07	2.647E-07
SSE	68	1.405E-05	4.151E-06	1.360E-06	7.541E-07	4.972E-07	2.732E-07	1.786E-07	1.291E-07
S	58	1.420E-05	4.232E-06	1.214E-06	6.751E-07	4.476E-07	2.479E-07	1.623E-07	1.179E-07
SSW	228	2.604E-05	7.829E-06	2.344E-06	1.267E-06	8.205E-07	4.493E-07	2.944E-07	2.129E-07
SW	74	1.271E-05	3.813E-06	1.142E-06	6.358E-07	4.194E-07	2.295E-07	1.492E-07	1.074E-07
WSW	30	7.865E-06	2.364E-06	6.829E-07	3.816E-07	2.534E-07	1.399E-07	9.192E-08	6.577E-08
W	18	3.177E-06	9.702E-07	3.058E-07	1.852E-07	1.204E-07	6.479E-08	3.801E-08	2.718E-08
WNW	35	8.040E-06	2.316E-06	7.950E-07	4.434E-07	2.924E-07	1.600E-07	1.146E-07	8.269E-08
NW	61	1.686E-05	4.997E-06	1.658E-06	9.280E-07	6.138E-07	3.378E-07	2.202E-07	1.588E-07
NNW	87	2.825E-05	8.242E-06	2.723E-06	1.533E-06	1.018E-06	5.644E-07	3.696E-07	2.679E-07
AVERAGE	2054	2.673E-05	7.906E-06	2.592E-06	1.436E-06	9.436E-07	5.190E-07	3.397E-07	2.455E-07

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	133	3.081E-07	2.484E-07	2.064E-07	1.751E-07	1.515E-07	8.820E-08	6.053E-08	3.569E-08
NNE	201	2.801E-07	2.256E-07	1.873E-07	1.597E-07	1.371E-07	7.442E-08	5.435E-08	3.199E-08
NE	237	3.845E-07	3.104E-07	2.582E-07	2.194E-07	1.894E-07	1.108E-07	7.617E-08	4.517E-08
ENE	232	4.256E-07	3.432E-07	2.850E-07	2.417E-07	2.089E-07	1.212E-07	8.311E-08	4.904E-08
E	223	2.912E-07	2.334E-07	1.929E-07	1.628E-07	1.402E-07	8.030E-08	5.447E-08	3.162E-08
ESE	191	2.381E-07	1.905E-07	1.572E-07	1.326E-07	1.140E-07	6.519E-08	4.415E-08	2.554E-08
SE	178	2.022E-07	1.611E-07	1.458E-07	1.125E-07	1.049E-07	5.388E-08	3.616E-08	2.065E-08
SSE	68	9.982E-08	8.038E-08	6.872E-08	5.657E-08	4.886E-08	2.837E-08	1.942E-08	1.140E-08
S	58	9.088E-08	7.326E-08	6.089E-08	5.173E-08	4.477E-08	2.618E-08	1.801E-08	1.063E-08
SSW	228	1.639E-07	1.316E-07	1.090E-07	9.236E-08	7.971E-08	4.606E-08	3.142E-08	1.840E-08
SW	74	8.263E-08	6.631E-08	5.489E-08	4.644E-08	4.005E-08	2.314E-08	1.578E-08	9.206E-09
WSW	30	5.069E-08	4.075E-08	3.717E-08	3.152E-08	2.725E-08	1.443E-08	9.891E-09	5.810E-09
W	18	2.078E-08	1.658E-08	1.365E-08	1.149E-08	9.865E-09	5.614E-09	3.777E-09	2.158E-09
WNW	35	6.399E-08	5.152E-08	3.883E-08	3.264E-08	2.830E-08	1.628E-08	1.111E-08	6.527E-09
NW	61	1.225E-07	9.842E-08	8.154E-08	6.902E-08	5.955E-08	3.443E-08	2.351E-08	1.375E-08
NNW	87	2.071E-07	1.669E-07	1.386E-07	1.175E-07	1.015E-07	5.893E-08	4.037E-08	2.375E-08
AVERAGE	2054	1.895E-07	1.524E-07	1.271E-07	1.076E-07	9.290E-08	5.328E-08	3.639E-08	2.133E-08

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	35.00	40.00	45.00	50.00	
N	133	2.460E-08	1.853E-08	1.481E-08	1.225E-08	1.035E-08	8.929E-09	7.816E-09	
NNE	201	2.203E-08	1.659E-08	1.325E-08	1.097E-08	9.270E-09	8.011E-09	7.021E-09	
NE	237	3.125E-08	2.361E-08	1.892E-08	1.570E-08	1.329E-08	1.150E-08	1.009E-08	
ENE	232	3.381E-08	2.547E-08	2.036E-08	1.686E-08	1.425E-08	1.231E-08	1.079E-08	
E	223	2.163E-08	1.620E-08	1.289E-08	1.064E-08	8.969E-09	7.740E-09	6.775E-09	
ESE	191	1.745E-08	1.306E-08	1.038E-08	8.557E-09	7.207E-09	6.213E-09	5.434E-09	
SE	178	1.401E-08	1.044E-08	8.263E-09	6.793E-09	5.711E-09	4.923E-09	4.304E-09	
SSE	68	7.852E-09	5.910E-09	4.719E-09	3.904E-09	3.297E-09	2.847E-09	2.493E-09	
S	58	7.347E-09	5.542E-09	4.434E-09	3.673E-09	3.104E-09	2.680E-09	2.347E-09	
SSW	228	1.266E-08	9.535E-09	7.619E-09	6.310E-09	5.337E-09	4.616E-09	4.051E-09	
SW	74	6.316E-09	4.740E-09	3.776E-09	3.118E-09	2.628E-09	2.265E-09	1.980E-09	
WSW	30	4.003E-09	3.013E-09	2.407E-09	1.990E-09	1.680E-09	1.448E-09	1.267E-09	
W	18	1.463E-09	1.089E-09	8.620E-10	7.081E-10	5.949E-10	5.113E-10	4.462E-10	
WNW	35	4.492E-09	3.379E-09	2.696E-09	2.230E-09	1.884E-09	1.629E-09	1.428E-09	
NW	61	9.438E-09	7.085E-09	5.647E-09	4.664E-09	3.932E-09	3.392E-09	2.964E-09	
NNW	87	1.635E-08	1.230E-08	9.815E-09	8.115E-09	6.848E-09	5.908E-09	5.169E-09	
AVERAGE	2054	1.467E-08	1.103E-08	8.803E-09	7.280E-09	6.147E-09	5.307E-09	4.649E-09	

Table B-1

## Undepleted X/Q Factors for Reactor Building Vent

RECO yearly - X/Q tables - 1991

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH1/Q BEFORE DEPLETION (LSEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	482	3.850E-05	1.127E-05	3.786E-06	2.108E-06	1.388E-06	7.637E-07	4.992E-07	3.609E-07
NNE	1222	5.604E-05	1.646E-05	5.529E-06	3.053E-06	2.001E-06	1.101E-06	7.205E-07	5.213E-07
NE	1185	6.665E-05	1.951E-05	6.158E-06	3.343E-06	2.181E-06	1.228E-06	8.163E-07	5.991E-07
ENE	748	5.473E-05	1.598E-05	5.124E-06	2.827E-06	1.860E-06	1.041E-06	6.888E-07	5.020E-07
E	680	3.956E-05	1.149E-05	3.880E-06	2.123E-06	1.385E-06	7.631E-07	5.009E-07	3.629E-07
ESE	566	3.145E-05	9.310E-06	3.058E-06	1.678E-06	1.098E-06	6.045E-07	3.962E-07	2.869E-07
SE	546	2.776E-05	8.248E-06	3.051E-06	1.686E-06	1.106E-06	6.036E-07	3.927E-07	2.871E-07
SSE	342	2.244E-05	6.619E-06	2.153E-06	1.087E-06	7.183E-07	3.956E-07	2.587E-07	1.871E-07
S	310	2.114E-05	6.209E-06	1.672E-06	9.193E-07	6.046E-07	3.346E-07	2.199E-07	1.596E-07
SSW	570	2.169E-05	6.402E-06	1.934E-06	1.059E-06	6.922E-07	3.787E-07	2.473E-07	1.787E-07
SW	447	1.952E-05	5.778E-06	1.803E-06	9.907E-07	6.472E-07	3.499E-07	2.267E-07	1.628E-07
WSW	376	2.269E-05	6.729E-06	2.082E-06	1.132E-06	7.342E-07	3.997E-07	2.609E-07	1.882E-07
W	221	1.595E-05	4.730E-06	1.442E-06	8.655E-07	5.642E-07	3.093E-07	2.024E-07	1.330E-07
WNW	198	1.355E-05	3.992E-06	1.362E-06	7.520E-07	4.921E-07	2.688E-07	1.752E-07	1.389E-07
NW	226	2.106E-05	6.204E-06	2.090E-06	1.158E-06	7.598E-07	4.173E-07	2.726E-07	1.969E-07
NNW	254	2.270E-05	6.641E-06	2.225E-06	1.238E-06	8.154E-07	4.501E-07	2.947E-07	2.133E-07
AVERAGE	8373	3.096E-05	9.111E-06	2.959E-06	1.628E-06	1.065E-06	5.881E-07	3.858E-07	2.780E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	482	2.790E-07	2.246E-07	1.862E-07	1.577E-07	1.361E-07	7.860E-08	5.371E-08	3.154E-08
NNE	1222	4.027E-07	3.240E-07	2.686E-07	2.275E-07	1.963E-07	1.133E-07	7.737E-08	4.540E-08
NE	1185	4.658E-07	3.769E-07	3.141E-07	2.677E-07	2.322E-07	1.363E-07	9.409E-08	5.619E-08
ENE	748	3.898E-07	3.150E-07	2.623E-07	2.231E-07	1.932E-07	1.130E-07	7.782E-08	4.625E-08
E	680	2.803E-07	2.255E-07	1.870E-07	1.585E-07	1.368E-07	7.915E-08	5.410E-08	3.180E-08
ESE	566	2.217E-07	1.784E-07	1.480E-07	1.255E-07	1.084E-07	6.286E-08	4.302E-08	2.530E-08
SE	546	1.980E-07	1.589E-07	1.315E-07	1.112E-07	1.054E-07	6.067E-08	4.130E-08	2.409E-08
SSE	342	1.447E-07	1.166E-07	9.682E-08	8.213E-08	7.097E-08	4.126E-08	2.829E-08	1.666E-08
S	310	1.236E-07	9.974E-08	8.292E-08	7.044E-08	6.092E-08	3.550E-08	2.438E-08	1.441E-08
SSW	570	1.380E-07	1.110E-07	9.200E-08	7.792E-08	6.723E-08	3.884E-08	2.653E-08	1.557E-08
SW	447	1.252E-07	1.004E-07	8.300E-08	7.003E-08	6.025E-08	3.448E-08	2.340E-08	1.361E-08
WSW	376	1.450E-07	1.163E-07	9.625E-08	8.136E-08	7.081E-08	4.022E-08	2.734E-08	1.595E-08
W	221	1.025E-07	8.239E-08	6.824E-08	5.775E-08	4.981E-08	2.871E-08	1.957E-08	1.146E-08
WNW	198	1.071E-07	8.601E-08	7.118E-08	6.016E-08	4.711E-08	2.707E-08	1.842E-08	1.075E-08
NW	226	1.320E-07	1.022E-07	1.012E-07	8.565E-08	7.387E-08	4.260E-08	2.905E-08	1.701E-08
NNW	254	1.649E-07	1.328E-07	1.101E-07	9.328E-08	8.052E-08	4.656E-08	3.183E-08	1.870E-08
AVERAGE	8373	2.150E-07	1.732E-07	1.437E-07	1.219E-07	1.060E-07	6.119E-08	4.189E-08	2.467E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	482	2.169E-08	1.431E-08	1.302E-08	1.076E-08	9.086E-09	7.846E-09	6.872E-09	
NNE	1222	3.122E-08	2.348E-08	1.875E-08	1.551E-08	1.310E-08	1.132E-08	9.923E-09	
NE	1185	3.904E-08	2.959E-08	2.378E-08	1.978E-08	1.678E-08	1.455E-08	1.279E-08	
ENE	748	3.203E-08	2.421E-08	1.941E-08	1.611E-08	1.364E-08	1.181E-08	1.036E-08	
E	680	2.191E-08	1.650E-08	1.319E-08	1.093E-08	9.240E-09	7.991E-09	7.010E-09	
ESE	566	1.745E-08	1.315E-08	1.051E-08	8.704E-09	7.360E-09	6.364E-09	5.581E-09	
SE	546	1.653E-08	1.241E-08	9.890E-09	8.170E-09	6.893E-09	5.951E-09	5.211E-09	
SSE	342	1.149E-08	8.660E-09	6.922E-09	5.730E-09	4.842E-09	4.183E-09	3.665E-09	
S	310	9.965E-09	7.525E-09	6.026E-09	4.998E-09	4.231E-09	3.661E-09	3.213E-09	
SSW	570	1.073E-08	8.082E-09	6.458E-09	5.349E-09	4.524E-09	3.914E-09	3.435E-09	
SW	447	9.330E-09	7.001E-09	5.576E-09	4.606E-09	3.887E-09	3.359E-09	2.944E-09	
WSW	376	1.095E-08	8.233E-09	6.567E-09	5.433E-09	4.591E-09	3.972E-09	3.485E-09	
W	221	7.882E-09	5.930E-09	4.734E-09	3.918E-09	3.312E-09	2.864E-09	2.511E-09	
WNW	198	7.379E-09	5.540E-09	4.415E-09	3.648E-09	3.079E-09	2.699E-09	2.330E-09	
NW	226	1.169E-08	8.780E-09	7.004E-09	5.789E-09	4.887E-09	4.220E-09	3.696E-09	
NNW	254	1.286E-08	9.671E-09	7.720E-09	6.385E-09	5.371E-09	4.656E-09	4.078E-09	
AVERAGE	8373	1.701E-08	1.282E-08	1.025E-08	8.488E-09	7.178E-09	6.257E-09	5.444E-09	

Table B-2

## Depleted X/Q Factors for Reactor Building Vent

SECO 1st quarter 1991 x/q tables  
Ground Release: GROUND-LEVEL AVERAGE CH1/Q AFTER DEPLETION (REGULATORY GUIDE 1.111 DEPLETION MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	107	3.387E-05	9.758E-06	3.108E-06	1.669E-06	1.075E-06	5.801E-07	3.711E-07	2.635E-07
NNE	200	3.556E-05	1.029E-05	3.399E-06	1.850E-06	1.197E-06	6.366E-07	4.025E-07	2.834E-07
NE	260	5.127E-05	1.497E-05	4.633E-06	2.476E-06	1.597E-06	8.650E-07	5.544E-07	3.939E-07
ENE	184	3.889E-05	1.124E-05	3.590E-06	1.947E-06	1.257E-06	6.740E-07	4.289E-07	3.035E-07
E	242	3.604E-05	1.058E-05	3.523E-06	1.878E-06	1.198E-06	6.311E-07	3.982E-07	2.798E-07
ESE	194	2.608E-05	7.651E-06	2.548E-06	1.353E-06	8.631E-07	4.520E-07	2.846E-07	1.996E-07
SE	198	2.549E-05	7.563E-06	2.450E-06	1.287E-06	8.174E-07	4.317E-07	2.735E-07	1.927E-07
SSE	104	1.775E-05	5.227E-06	1.631E-06	8.749E-07	5.654E-07	3.026E-07	1.922E-07	1.557E-07
S	91	1.735E-05	5.077E-06	1.649E-06	8.663E-07	4.902E-07	2.631E-07	1.683E-07	1.194E-07
SSW	100	1.356E-05	4.063E-06	1.226E-06	6.536E-07	4.175E-07	2.186E-07	1.372E-07	9.597E-08
SW	97	1.087E-05	3.220E-06	9.707E-07	5.181E-07	3.312E-07	1.728E-07	1.082E-07	7.560E-08
WSW	93	1.378E-05	4.093E-06	1.204E-06	6.378E-07	4.069E-07	2.154E-07	1.365E-07	9.610E-08
W	58	1.102E-05	3.291E-06	9.677E-07	5.758E-07	3.720E-07	1.966E-07	1.125E-07	7.881E-08
WNW	39	8.031E-06	2.358E-06	7.325E-07	3.930E-07	2.537E-07	1.371E-07	9.643E-08	6.837E-08
NW	61	1.512E-05	4.450E-06	1.399E-06	7.555E-07	4.889E-07	2.625E-07	1.670E-07	1.180E-07
NNW	67	1.459E-05	4.193E-06	1.375E-06	7.420E-07	4.781E-07	2.554E-07	1.623E-07	1.147E-07
AVERAGE	2095	2.308E-05	6.752E-06	2.138E-06	1.149E-06	7.381E-07	3.934E-07	2.496E-07	1.762E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	107	2.004E-07	1.589E-07	1.300E-07	1.089E-07	9.297E-08	5.067E-08	3.306E-08	1.812E-08
NNE	200	2.146E-07	1.693E-07	1.382E-07	1.153E-07	9.809E-08	5.293E-08	3.427E-08	1.854E-08
NE	260	2.994E-07	2.375E-07	1.544E-07	1.631E-07	1.395E-07	7.643E-08	4.999E-08	2.744E-08
ENE	184	2.304E-07	1.825E-07	1.492E-07	1.248E-07	1.064E-07	5.781E-08	3.785E-08	2.056E-08
E	242	2.111E-07	1.663E-07	1.353E-07	1.126E-07	9.566E-08	5.130E-08	3.309E-08	1.784E-08
ESE	194	1.508E-07	1.188E-07	9.668E-08	8.051E-08	6.836E-08	3.666E-08	2.364E-08	1.274E-08
SE	198	1.453E-07	1.145E-07	1.026E-07	8.563E-08	7.284E-08	3.570E-08	2.307E-08	1.245E-08
SSE	104	1.028E-07	8.126E-08	6.640E-08	5.559E-08	4.742E-08	2.586E-08	1.684E-08	9.180E-09
S	91	9.062E-08	7.180E-08	5.872E-08	4.921E-08	4.201E-08	2.292E-08	1.494E-08	8.170E-09
SSW	100	7.207E-08	5.659E-08	4.593E-08	3.820E-08	3.240E-08	1.733E-08	1.112E-08	5.921E-09
SW	97	5.687E-08	4.470E-08	3.630E-08	3.018E-08	2.559E-08	1.368E-08	8.818E-09	4.747E-09
WSW	93	7.247E-08	5.712E-08	5.116E-08	4.270E-08	3.633E-08	1.982E-08	1.151E-08	6.203E-09
W	58	5.934E-08	4.670E-08	3.752E-08	3.166E-08	2.692E-08	1.451E-08	9.366E-09	5.023E-09
WNW	39	5.187E-08	4.109E-08	3.055E-08	2.561E-08	2.180E-08	1.196E-08	7.805E-09	4.264E-09
NW	61	8.917E-08	7.069E-08	5.774E-08	4.832E-08	4.123E-08	2.247E-08	1.462E-08	7.954E-09
NNW	67	8.704E-08	6.889E-08	5.625E-08	4.699E-08	4.002E-08	2.165E-08	1.406E-08	7.665E-09
AVERAGE	2095	1.334E-07	1.054E-07	8.671E-08	7.246E-08	6.172E-08	3.311E-08	2.149E-08	1.168E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	107	1.165E-08	8.284E-09	6.306E-09	5.006E-09	4.072E-09	3.404E-09	2.893E-09	
NNE	200	1.183E-08	8.361E-09	6.332E-09	5.005E-09	4.056E-09	3.381E-09	2.865E-09	
NE	260	1.767E-08	1.258E-08	9.586E-09	7.615E-09	6.196E-09	5.177E-09	4.399E-09	
ENE	184	1.319E-08	9.369E-09	7.122E-09	5.646E-09	4.588E-09	3.832E-09	3.252E-09	
E	242	1.138E-08	8.047E-09	6.096E-09	4.822E-09	3.912E-09	3.266E-09	2.773E-09	
ESE	194	8.129E-09	5.751E-09	4.357E-09	3.447E-09	2.797E-09	2.337E-09	1.985E-09	
SE	198	7.961E-09	5.642E-09	4.282E-09	3.393E-09	2.758E-09	2.306E-09	1.960E-09	
SSE	104	5.895E-09	4.188E-09	3.185E-09	2.526E-09	2.052E-09	1.713E-09	1.455E-09	
S	91	5.255E-09	3.740E-09	2.848E-09	2.263E-09	1.842E-09	1.541E-09	1.311E-09	
SSW	100	3.754E-09	2.643E-09	1.995E-09	1.573E-09	1.273E-09	1.060E-09	8.983E-10	
SW	97	3.027E-09	2.140E-09	1.620E-09	1.281E-09	1.039E-09	8.669E-10	7.355E-10	
WSW	93	3.959E-09	2.802E-09	2.124E-09	1.681E-09	1.364E-09	1.129E-09	9.672E-10	
W	58	3.194E-09	2.253E-09	1.703E-09	1.344E-09	1.087E-09	9.043E-10	7.651E-10	
WNW	39	2.738E-09	1.946E-09	1.480E-09	1.174E-09	9.544E-10	7.987E-10	6.763E-10	
NW	61	5.095E-09	3.614E-09	2.745E-09	2.174E-09	1.764E-09	1.471E-09	1.247E-09	
NNW	67	4.912E-09	3.484E-09	2.646E-09	2.097E-09	1.703E-09	1.423E-09	1.208E-09	
AVERAGE	2095	7.477E-09	5.303E-09	4.027E-09	3.190E-09	2.591E-09	2.164E-09	1.837E-09	

Table B-2

## Depleted X/Q Factors for Reactor Building Vent

BECO 2nd quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH/D AFTER DEPLETION (REGULATORY GUIDE 1.111 DEPLETION MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.30	.75	1.00	1.50	2.00	2.50
N	86	2.312E-05	6.624E-06	2.341E-06	1.266E-06	8.110E-07	4.233E-07	2.650E-07	1.854E-07
NNE	371	6.141E-05	1.777E-05	5.831E-06	3.156E-06	2.039E-06	1.083E-06	6.854E-07	4.830E-07
NE	366	7.083E-05	2.035E-05	6.203E-06	3.303E-06	2.129E-06	1.163E-06	7.305E-07	5.361E-07
ENE	155	5.524E-05	1.589E-05	4.716E-06	2.543E-06	1.656E-06	9.120E-07	5.896E-07	4.217E-07
E	110	4.315E-05	1.250E-05	3.800E-06	2.014E-06	1.293E-06	7.071E-07	4.570E-07	3.265E-07
ESE	102	2.752E-05	7.952E-06	2.435E-06	1.319E-06	8.599E-07	4.655E-07	2.978E-07	2.116E-07
SE	83	2.240E-05	6.454E-06	2.290E-06	1.248E-06	8.111E-07	4.327E-07	2.490E-07	1.757E-07
SSE	90	3.026E-05	8.690E-06	2.741E-06	1.360E-06	8.883E-07	4.768E-07	3.027E-07	2.140E-07
S	73	2.423E-05	6.920E-06	1.848E-06	9.956E-07	6.439E-07	3.466E-07	2.194E-07	1.514E-07
SSW	147	2.713E-05	7.729E-06	2.247E-06	1.218E-06	7.922E-07	4.234E-07	2.688E-07	1.931E-07
SW	186	3.134E-05	9.026E-06	2.755E-06	1.474E-06	9.457E-07	4.962E-07	3.125E-07	2.196E-07
WSW	159	3.922E-05	1.153E-05	3.391E-06	1.772E-06	1.121E-06	5.957E-07	3.799E-07	2.689E-07
W	78	1.990E-05	5.762E-06	1.771E-06	1.032E-06	6.568E-07	3.456E-07	1.984E-07	1.396E-07
WNW	44	1.079E-05	3.162E-06	1.040E-06	5.607E-07	3.611E-07	1.902E-07	1.315E-07	9.225E-08
NW	57	2.644E-05	7.104E-06	2.344E-06	1.276E-06	8.261E-07	4.382E-07	2.767E-07	1.948E-07
NNW	32	1.203E-05	3.531E-06	1.174E-06	6.367E-07	4.109E-07	2.167E-07	1.363E-07	9.544E-08
AVERAGE	2139	3.270E-05	9.438E-06	2.933E-06	1.573E-06	1.015E-06	5.446E-07	3.450E-07	2.444E-07
DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	86	1.399E-07	1.101E-07	8.934E-08	7.412E-08	6.273E-08	3.323E-08	2.131E-08	1.142E-08
NNE	371	3.659E-07	2.892E-07	2.359E-07	1.969E-07	1.676E-07	9.055E-08	5.870E-08	3.183E-08
NE	366	4.095E-07	3.260E-07	2.677E-07	2.252E-07	1.929E-07	1.063E-07	6.964E-08	3.871E-08
ENE	155	3.225E-07	2.571E-07	2.114E-07	1.781E-07	1.528E-07	8.471E-08	5.587E-08	3.103E-08
E	110	2.490E-07	1.981E-07	1.626E-07	1.367E-07	1.171E-07	6.450E-08	4.234E-08	2.343E-08
ESE	102	1.613E-07	1.282E-07	1.051E-07	8.831E-08	7.554E-08	4.151E-08	2.724E-08	1.498E-08
SE	83	1.334E-07	1.056E-07	8.490E-08	7.933E-08	6.759E-08	3.669E-08	2.388E-08	1.201E-08
SSE	90	1.628E-07	1.291E-07	1.057E-07	8.851E-08	7.552E-08	4.123E-08	2.693E-08	1.475E-08
S	73	1.183E-07	9.388E-08	7.684E-08	6.434E-08	5.488E-08	2.989E-08	1.951E-08	1.070E-08
SSW	147	1.447E-07	1.149E-07	9.403E-08	7.873E-08	6.714E-08	3.657E-08	2.366E-08	1.307E-08
SW	186	1.662E-07	1.312E-07	1.069E-07	8.907E-08	7.564E-08	4.059E-08	2.621E-08	1.416E-08
WSW	159	2.034E-07	1.607E-07	1.342E-07	1.205E-07	1.027E-07	5.047E-08	3.271E-08	1.777E-08
W	78	1.055E-07	8.320E-08	6.771E-08	5.638E-08	4.786E-08	2.561E-08	1.651E-08	8.922E-09
WNW	44	6.964E-08	5.489E-08	4.061E-08	3.383E-08	2.874E-08	1.545E-08	9.991E-09	5.397E-09
NW	57	1.476E-07	1.167E-07	9.518E-08	7.940E-08	6.755E-08	3.646E-08	2.364E-08	1.283E-08
NNW	32	7.206E-08	5.676E-08	4.616E-08	3.843E-08	3.264E-08	1.752E-08	1.130E-08	6.063E-09
AVERAGE	2139	1.857E-07	1.472E-07	1.215E-07	1.017E-07	8.680E-08	4.696E-08	3.062E-08	1.675E-08
DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	86	7.243E-09	5.102E-09	3.850E-09	3.037E-09	2.458E-09	2.052E-09	1.740E-09	
NNE	371	2.035E-08	1.441E-08	1.093E-08	8.646E-09	7.013E-09	5.853E-09	4.965E-09	
NE	366	2.505E-08	1.791E-08	1.349E-08	1.090E-08	8.893E-09	7.448E-09	6.341E-09	
ENE	155	2.010E-08	1.437E-08	1.099E-08	8.748E-09	7.131E-09	5.965E-09	5.072E-09	
E	110	1.515E-08	1.082E-08	8.270E-09	6.586E-09	5.371E-09	4.498E-09	3.828E-09	
ESE	102	9.655E-09	6.878E-09	5.241E-09	4.162E-09	3.386E-09	2.829E-09	2.402E-09	
SE	83	8.342E-09	5.918E-09	4.493E-09	3.559E-09	2.888E-09	2.411E-09	2.045E-09	
SSE	90	9.488E-09	6.746E-09	5.132E-09	4.070E-09	3.307E-09	2.762E-09	2.344E-09	
S	73	6.888E-09	4.903E-09	3.732E-09	2.963E-09	2.411E-09	2.017E-09	1.715E-09	
SSW	147	8.407E-09	5.981E-09	4.551E-09	3.611E-09	2.937E-09	2.456E-09	2.088E-09	
SW	186	9.046E-09	6.406E-09	4.855E-09	3.843E-09	3.121E-09	2.610E-09	2.218E-09	
WSW	159	1.139E-08	8.091E-09	6.153E-09	4.884E-09	3.975E-09	3.328E-09	2.833E-09	
W	78	5.699E-09	4.036E-09	3.060E-09	2.423E-09	1.969E-09	1.647E-09	1.401E-09	
WNW	44	3.446E-09	2.438E-09	1.847E-09	1.460E-09	1.184E-09	9.877E-10	8.375E-10	
NW	57	8.198E-09	5.803E-09	4.399E-09	3.479E-09	2.821E-09	2.354E-09	1.995E-09	
NNW	32	3.856E-09	2.719E-09	2.055E-09	1.621E-09	1.312E-09	1.093E-09	9.251E-10	
AVERAGE	2139	1.077E-08	7.658E-09	5.827E-09	4.625E-09	3.761E-09	3.144E-09	2.672E-09	



Table B-2

## Depleted X/Q Factors for Reactor Building Vent

BECU 3rd quarter 1-91 x/q tables

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH1/Q AFTER DEPLETION (REGULATORY GUIDE 3.111 DEPLETION MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	156	5.098E-05	1.470E-05	4.719E-06	2.573E-06	1.672E-06	8.944E-07	5.677E-07	4.011E-07
NNE	450	8.126E-05	2.350E-05	7.474E-06	3.984E-06	2.557E-06	1.377E-06	8.813E-07	6.257E-07
NE	322	8.256E-05	2.369E-05	6.980E-06	3.614E-06	2.295E-06	1.277E-06	8.395E-07	6.065E-07
ENE	177	6.041E-05	1.734E-05	5.242E-06	2.782E-06	1.790E-06	9.839E-07	6.372E-07	4.564E-07
E	105	3.433E-05	9.890E-06	3.094E-06	1.651E-06	1.063E-06	5.738E-07	3.679E-07	2.617E-07
ESE	79	3.555E-05	1.022E-05	3.065E-06	1.625E-06	1.047E-06	5.750E-07	3.729E-07	2.671E-07
SE	87	3.197E-05	9.221E-06	3.131E-06	1.724E-06	1.133E-06	6.124E-07	3.544E-07	2.509E-07
SSE	80	2.157E-05	6.282E-06	1.941E-06	9.541E-07	6.200E-07	3.317E-07	2.112E-07	1.494E-07
S	88	2.329E-05	6.701E-06	1.693E-06	9.058E-07	5.888E-07	3.195E-07	2.049E-07	1.458E-07
SSW	95	1.781E-05	5.081E-06	1.452E-06	7.703E-07	4.964E-07	2.651E-07	1.488E-07	1.197E-07
SW	90	2.046E-05	5.976E-06	1.787E-06	9.549E-07	6.136E-07	3.225E-07	2.070E-07	1.425E-07
WSW	94	2.630E-05	7.510E-06	2.337E-06	1.257E-06	8.071E-07	4.234E-07	2.664E-07	1.871E-07
W	67	2.727E-05	7.917E-06	2.277E-06	1.301E-06	8.347E-07	4.525E-07	2.645E-07	1.863E-07
WNW	80	2.569E-05	7.448E-06	2.479E-06	1.352E-06	8.540E-07	4.532E-07	3.156E-07	2.224E-07
NW	47	2.508E-05	7.231E-06	2.368E-06	1.261E-06	8.060E-07	4.317E-07	2.756E-07	1.953E-07
NNW	68	3.409E-05	9.784E-06	3.128E-06	1.687E-06	1.089E-06	5.878E-07	3.759E-07	2.688E-07
AVERAGE	2085	3.741E-05	1.078E-05	3.320E-06	1.774E-06	1.162E-06	6.175E-07	3.941E-07	2.804E-07

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	156	3.048E-07	2.416E-07	1.975E-07	1.652E-07	1.408E-07	7.662E-08	4.991E-08	2.723E-08
NNE	450	4.756E-07	3.770E-07	3.085E-07	2.584E-07	2.206E-07	1.202E-07	7.836E-08	4.291E-08
NE	322	4.852E-07	3.718E-07	3.064E-07	2.588E-07	2.225E-07	1.237E-07	8.162E-08	4.586E-08
ENE	177	3.490E-07	2.782E-07	2.286E-07	1.925E-07	1.650E-07	9.116E-08	6.002E-08	3.346E-08
E	105	1.994E-07	1.584E-07	1.298E-07	1.089E-07	9.308E-08	5.097E-08	3.355E-08	1.836E-08
ESE	79	2.043E-07	1.628E-07	1.339E-07	1.128E-07	9.674E-08	5.352E-08	3.526E-08	1.959E-08
SE	87	1.910E-07	1.517E-07	1.267E-07	1.147E-07	9.799E-08	5.377E-08	3.523E-08	1.934E-08
SSE	80	1.137E-07	9.023E-08	7.391E-08	6.199E-08	5.296E-08	2.905E-08	1.901E-08	1.042E-08
S	88	1.112E-07	8.846E-08	7.263E-08	6.108E-08	5.227E-08	2.879E-08	1.889E-08	1.041E-08
SSW	95	9.121E-08	7.247E-08	5.939E-08	4.980E-08	4.251E-08	2.321E-08	1.519E-08	8.374E-09
SW	90	1.076E-07	8.486E-08	6.911E-08	5.762E-08	4.895E-08	2.634E-08	1.701E-08	9.179E-09
WSW	94	1.417E-07	1.118E-07	1.002E-07	8.337E-08	7.074E-08	3.440E-08	2.218E-08	1.198E-08
W	67	1.433E-07	1.138E-07	9.324E-08	7.827E-08	6.693E-08	3.669E-08	2.402E-08	1.322E-08
WNW	80	1.683E-07	1.329E-07	9.848E-08	8.212E-08	6.983E-08	3.759E-08	2.430E-08	1.314E-08
NW	47	1.482E-07	1.173E-07	9.578E-08	8.006E-08	6.822E-08	3.691E-08	2.397E-08	1.306E-08
NNW	68	2.030E-07	1.611E-07	1.318E-07	1.104E-07	9.424E-08	5.136E-08	3.351E-08	1.836E-08
AVERAGE	2085	2.136E-07	1.697E-07	1.397E-07	1.172E-07	1.002E-07	5.464E-08	3.575E-08	1.967E-08

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	156	1.746E-08	1.239E-08	9.405E-09	7.449E-09	6.045E-09	5.044E-09	4.271E-09	
NNE	450	2.759E-08	1.963E-08	1.495E-08	1.187E-08	9.661E-09	8.003E-09	6.872E-09	
NE	322	2.987E-08	2.147E-08	1.648E-08	1.318E-08	1.079E-08	9.067E-09	7.742E-09	
ENE	177	2.160E-08	1.546E-08	1.183E-08	9.425E-09	7.693E-09	6.445E-09	5.489E-09	
E	105	1.184E-08	8.439E-09	6.435E-09	5.116E-09	4.167E-09	3.487E-09	2.966E-09	
ESE	79	1.270E-08	9.090E-09	6.956E-09	5.545E-09	4.526E-09	3.792E-09	3.230E-09	
SE	87	1.244E-08	8.849E-09	6.733E-09	5.339E-09	4.336E-09	3.616E-09	3.066E-09	
SSE	80	6.705E-09	4.771E-09	3.632E-09	2.882E-09	2.342E-09	1.956E-09	1.660E-09	
S	88	6.734E-09	4.810E-09	3.672E-09	2.922E-09	2.363E-09	1.995E-09	1.698E-09	
SSW	95	5.418E-09	3.873E-09	2.957E-09	2.355E-09	1.921E-09	1.612E-09	1.374E-09	
SW	90	5.865E-09	4.153E-09	3.148E-09	2.492E-09	2.022E-09	1.690E-09	1.435E-09	
WSW	94	7.647E-09	5.410E-09	4.097E-09	3.241E-09	2.630E-09	2.199E-09	1.868E-09	
W	67	8.530E-09	6.084E-09	4.642E-09	3.692E-09	3.000E-09	2.518E-09	2.142E-09	
WNW	80	8.387E-09	5.933E-09	4.496E-09	3.556E-09	2.885E-09	2.409E-09	2.044E-09	
NW	47	8.375E-09	5.946E-09	4.520E-09	3.585E-09	2.916E-09	2.439E-09	2.074E-09	
NNW	68	1.179E-08	8.385E-09	6.380E-09	5.063E-09	4.117E-09	3.440E-09	2.923E-09	
AVERAGE	2085	1.269E-08	9.043E-09	6.896E-09	5.482E-09	4.465E-09	3.747E-09	3.179E-09	

Table B-2

## Depleted X/Q Factors for Reactor Building Vent

BECo 4th quarter 1991 x/q tables  
Ground Release: GROUND-LEVEL AVERAGE CH1/Q AFTER DEPLETION (REGULATORY GUIDE 1.111 DEPLETION MODEL) (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	133	4.096E-05	1.186E-05	3.705E-06	2.024E-06	1.321E-06	7.135E-07	4.548E-07	3.222E-07
NNE	201	3.761E-05	1.087E-05	3.474E-06	1.874E-06	1.211E-06	6.497E-07	4.140E-07	2.931E-07
NE	237	5.214E-05	1.505E-05	4.683E-06	2.509E-06	1.618E-06	8.781E-07	5.639E-07	4.013E-07
ENE	232	5.665E-05	1.627E-05	5.178E-06	2.809E-06	1.822E-06	9.830E-07	6.274E-07	4.448E-07
E	223	3.897E-05	1.141E-05	3.766E-06	2.024E-06	1.301E-06	6.894E-07	4.397E-07	3.065E-07
ESE	191	3.233E-05	9.589E-06	3.146E-06	1.691E-06	1.087E-06	5.713E-07	3.589E-07	2.514E-07
SE	178	2.734E-05	8.140E-06	2.779E-06	1.484E-06	9.466E-07	4.918E-07	3.073E-07	2.143E-07
SSE	68	1.353E-05	3.943E-06	1.243E-06	6.720E-07	4.359E-07	2.329E-07	1.479E-07	1.045E-07
S	58	1.369E-05	4.020E-06	1.109E-06	6.016E-07	3.924E-07	2.113E-07	1.345E-07	9.512E-08
SSW	228	2.512E-05	7.436E-06	2.142E-06	1.129E-06	7.193E-07	3.830E-07	2.439E-07	1.724E-07
SW	74	1.226E-05	3.622E-06	1.044E-06	5.666E-07	3.677E-07	1.957E-07	1.236E-07	8.692E-08
WSW	30	7.585E-06	2.246E-06	6.248E-07	3.400E-07	2.221E-07	1.193E-07	7.556E-08	5.329E-08
W	18	3.064E-06	9.216E-07	2.795E-07	1.650E-07	1.057E-07	5.504E-08	3.149E-08	2.018E-08
WNW	35	7.753E-06	2.200E-06	7.266E-07	3.951E-07	2.564E-07	1.364E-07	9.489E-08	6.694E-08
NW	61	1.626E-05	4.747E-06	1.315E-06	8.270E-07	5.381E-07	2.880E-07	1.824E-07	1.286E-07
NNW	87	2.722E-05	7.829E-06	2.489E-06	1.366E-06	8.927E-07	4.712E-07	3.061E-07	2.166E-07
AVERAGE	2054	2.578E-05	7.510E-06	2.369E-06	1.280E-06	8.273E-07	4.426E-07	2.814E-07	1.987E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	133	2.450E-07	1.944E-07	1.591E-07	1.333E-07	1.139E-07	6.232E-08	4.072E-08	2.230E-08
NNE	201	2.227E-07	1.765E-07	1.444E-07	1.208E-07	1.031E-07	5.411E-08	3.656E-08	1.998E-08
NE	237	3.057E-07	2.425E-07	1.990E-07	1.670E-07	1.428E-07	7.826E-08	5.124E-08	2.872E-08
ENE	232	3.384E-07	2.685E-07	2.197E-07	1.840E-07	1.571E-07	8.566E-08	5.591E-08	3.063E-08
E	223	2.315E-07	1.826E-07	1.487E-07	1.240E-07	1.054E-07	5.674E-08	3.664E-08	1.975E-08
ESE	191	1.894E-07	1.490E-07	1.212E-07	1.009E-07	8.571E-08	4.606E-08	2.970E-08	1.595E-08
SE	178	1.608E-07	1.261E-07	1.124E-07	9.321E-08	7.889E-08	3.807E-08	2.432E-08	1.290E-08
SSE	68	7.937E-08	6.289E-08	5.143E-08	4.306E-08	3.674E-08	2.005E-08	1.306E-08	7.123E-09
S	58	7.226E-08	5.732E-08	4.693E-08	3.938E-08	3.366E-08	1.850E-08	1.211E-08	6.642E-09
SSW	228	1.304E-07	1.030E-07	8.405E-08	7.031E-08	5.993E-08	3.255E-08	2.114E-08	1.149E-08
SW	74	6.570E-08	5.188E-08	4.231E-08	3.535E-08	3.011E-08	1.635E-08	1.062E-08	5.750E-09
WSW	30	4.031E-08	3.186E-08	2.666E-08	2.401E-08	2.049E-08	1.019E-08	6.654E-09	3.629E-09
W	18	1.652E-08	1.297E-08	1.050E-08	8.746E-09	7.418E-09	3.968E-09	2.541E-09	1.348E-09
WNW	35	5.088E-08	4.031E-08	2.993E-08	2.500E-08	2.128E-08	1.151E-08	7.477E-09	4.077E-09
NW	61	9.738E-08	7.700E-08	6.286E-08	5.254E-08	4.477E-08	2.433E-08	1.581E-08	8.588E-09
NNW	87	1.647E-07	1.306E-07	1.068E-07	8.945E-08	7.633E-08	4.164E-08	2.716E-08	1.484E-08
AVERAGE	2054	1.507E-07	1.192E-07	9.799E-08	8.194E-08	6.984E-08	3.764E-08	2.448E-08	1.333E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	133	1.432E-08	1.017E-08	7.738E-09	6.134E-09	4.981E-09	4.155E-09	3.523E-09	
NNE	201	1.283E-08	9.110E-09	6.926E-09	5.492E-09	4.462E-09	3.727E-09	3.165E-09	
NE	237	1.819E-08	1.296E-08	9.685E-09	7.857E-09	6.397E-09	5.350E-09	4.549E-09	
ENE	232	1.968E-08	1.399E-08	1.064E-08	8.440E-09	6.859E-09	5.729E-09	4.864E-09	
E	223	1.259E-08	8.898E-09	6.738E-09	5.326E-09	4.317E-09	3.601E-09	3.054E-09	
ESE	191	1.016E-08	7.171E-09	5.424E-09	4.284E-09	3.469E-09	2.891E-09	2.450E-09	
SE	178	8.157E-09	5.731E-09	4.318E-09	3.401E-09	2.749E-09	2.271E-09	1.940E-09	
SSE	68	4.571E-09	3.245E-09	2.466E-09	1.954E-09	1.587E-09	1.325E-09	1.124E-09	
S	58	4.277E-09	3.044E-09	2.317E-09	1.839E-09	1.494E-09	1.247E-09	1.058E-09	
SSW	228	7.371E-09	5.236E-09	3.981E-09	3.159E-09	2.569E-09	2.148E-09	1.826E-09	
SW	74	3.676E-09	2.603E-09	1.973E-09	1.561E-09	1.265E-09	1.054E-09	8.926E-10	
WSW	30	2.330E-09	1.655E-09	1.258E-09	9.964E-10	8.086E-10	6.738E-10	5.709E-10	
W	18	8.518E-10	5.981E-10	4.505E-10	3.545E-10	2.862E-10	2.379E-10	2.011E-10	
WNW	35	2.615E-09	1.896E-09	1.409E-09	1.117E-09	9.069E-10	7.580E-10	6.437E-10	
NW	61	5.494E-09	3.891E-09	2.951E-09	2.335E-09	1.893E-09	1.577E-09	1.336E-09	
NNW	87	9.516E-09	6.752E-09	5.129E-09	4.062E-09	3.296E-09	2.749E-09	2.330E-09	
AVERAGE	2054	8.539E-09	6.057E-09	4.600E-09	3.644E-09	2.959E-09	2.470E-09	2.095E-09	



Table B-2

## Depleted X/Q Factors for Reactor Building Vent

SECo yearly - X/Q tables - 1991

SECTOR AVERAGE MODEL

Ground Release: GROUND-LEVEL AVERAGE CH/Q AFTER DEPLETION (REGULATORY GUIDE 1.111 DEPLETION MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	482	3.712E-05	1.070E-05	3.460E-06	1.878E-06	1.217E-06	6.510E-07	4.135E-07	2.922E-07
NNE	1222	5.404E-05	1.563E-05	5.053E-06	2.721E-06	1.754E-06	9.383E-07	5.968E-07	4.220E-07
NE	1185	6.428E-05	1.853E-05	5.628E-06	2.979E-06	1.912E-06	1.047E-06	6.778E-07	4.850E-07
ENE	748	5.278E-05	1.518E-05	4.684E-06	2.519E-06	1.630E-06	8.075E-07	5.705E-07	4.064E-07
E	680	3.815E-05	1.110E-05	3.546E-06	1.892E-06	1.214E-06	6.505E-07	4.149E-07	2.938E-07
ESE	566	3.033E-05	8.844E-06	2.795E-06	1.495E-06	9.629E-07	5.153E-07	3.282E-07	2.322E-07
SE	546	2.677E-05	7.834E-06	2.789E-06	1.503E-06	9.696E-07	5.166E-07	3.253E-07	2.081E-07
SSE	342	2.164E-05	6.287E-06	1.968E-06	9.689E-07	6.297E-07	3.373E-07	2.143E-07	1.515E-07
S	310	2.039E-05	5.898E-06	1.528E-06	8.192E-07	5.300E-07	2.853E-07	1.821E-07	1.292E-07
SSW	570	2.092E-05	6.081E-06	1.768E-06	9.434E-07	6.069E-07	3.228E-07	2.049E-07	1.447E-07
SW	447	1.883E-05	5.488E-06	1.648E-06	8.829E-07	5.674E-07	2.983E-07	1.877E-07	1.318E-07
WSW	376	2.188E-05	6.391E-06	1.907E-06	1.009E-06	6.437E-07	3.408E-07	2.161E-07	1.524E-07
W	221	1.538E-05	4.493E-06	1.318E-06	7.77E-07	5.744E-07	2.637E-07	1.677E-07	1.077E-07
WNW	198	1.306E-05	3.792E-06	1.244E-06	6.77E-07	5.315E-07	2.292E-07	1.451E-07	1.125E-07
NW	226	2.031E-05	5.893E-06	1.910E-06	1.032E-06	6.641E-07	3.558E-07	2.258E-07	1.594E-07
NNW	254	2.189E-05	6.308E-06	2.033E-06	1.103E-06	7.149E-07	3.837E-07	2.441E-07	1.727E-07
AVERAGE	8373	2.984E-05	8.654E-06	2.705E-06	1.449E-06	9.340E-07	5.013E-07	3.197E-07	2.251E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	482	2.219E-07	1.757E-07	1.436E-07	1.200E-07	1.023E-07	5.554E-08	3.613E-08	1.970E-08
NNE	1222	3.202E-07	2.535E-07	2.071E-07	1.731E-07	1.476E-07	8.007E-08	5.205E-08	2.836E-08
NE	1185	3.704E-07	2.949E-07	2.422E-07	2.038E-07	1.746E-07	9.627E-08	6.330E-08	3.510E-08
ENE	748	3.100E-07	2.465E-07	2.022E-07	1.698E-07	1.453E-07	7.962E-08	5.235E-08	2.889E-08
E	680	2.229E-07	1.764E-07	1.442E-07	1.206E-07	1.029E-07	5.592E-08	3.640E-08	1.987E-08
ESE	566	1.762E-07	1.396E-07	1.141E-07	9.555E-08	8.152E-08	4.441E-08	2.894E-08	1.581E-08
SE	546	1.574E-07	1.243E-07	1.014E-07	8.444E-08	7.974E-08	4.286E-08	2.778E-08	1.505E-08
SSE	342	1.151E-07	9.122E-08	7.464E-08	6.252E-08	5.374E-08	2.915E-08	1.903E-08	1.041E-08
S	310	9.831E-08	7.804E-08	6.392E-08	5.362E-08	4.581E-08	2.508E-08	1.640E-08	9.000E-09
SSW	570	1.097E-07	8.681E-08	7.092E-08	5.932E-08	5.055E-08	2.744E-08	1.785E-08	9.724E-09
SW	447	9.959E-08	7.856E-08	6.398E-08	5.332E-08	4.530E-08	2.436E-08	1.574E-08	8.500E-09
WSW	376	1.157E-07	9.101E-08	7.419E-08	6.193E-08	5.796E-08	2.842E-08	1.839E-08	9.864E-09
W	221	8.154E-08	6.446E-08	5.260E-08	4.396E-08	3.745E-08	2.028E-08	1.317E-08	7.159E-09
WNW	198	8.516E-08	6.729E-08	5.487E-08	4.580E-08	3.842E-08	1.913E-08	1.239E-08	6.718E-09
NW	226	1.209E-07	9.560E-08	7.803E-08	6.520E-08	5.594E-08	3.010E-08	1.955E-08	1.063E-08
NNW	254	1.311E-07	1.039E-07	8.490E-08	7.101E-08	6.054E-08	3.290E-08	2.141E-08	1.168E-08
AVERAGE	8373	1.710E-07	1.355E-07	1.108E-07	9.276E-08	7.971E-08	4.323E-08	2.818E-08	1.541E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	482	1.263E-08	8.956E-09	6.801E-09	5.288E-09	4.374E-09	3.651E-09	3.097E-09	
NNE	1222	1.817E-08	1.210E-08	9.797E-09	7.764E-09	6.307E-09	5.268E-09	4.473E-09	
NE	1185	2.272E-08	1.625E-08	1.243E-08	9.901E-09	8.079E-09	6.769E-09	5.764E-09	
ENE	748	1.864E-08	1.330E-08	1.014E-08	8.065E-09	6.568E-09	5.493E-09	4.670E-09	
E	680	1.275E-08	9.063E-09	6.893E-09	5.469E-09	4.448E-09	3.718E-09	3.112E-09	
ESE	566	1.015E-08	7.219E-09	5.492E-09	4.357E-09	3.543E-09	2.961E-09	2.516E-09	
SE	546	9.632E-09	6.815E-09	5.168E-09	4.090E-09	3.318E-09	2.769E-09	2.349E-09	
SSE	342	6.690E-09	4.756E-09	3.617E-09	2.844E-09	2.331E-09	1.946E-09	1.632E-09	
S	310	5.800E-09	4.132E-09	3.149E-09	2.502E-09	2.037E-09	1.703E-09	1.448E-09	
SSW	570	6.245E-09	4.438E-09	3.375E-09	2.677E-09	2.178E-09	1.821E-09	1.548E-09	
SW	447	5.431E-09	3.845E-09	2.914E-09	2.306E-09	1.871E-09	1.563E-09	1.327E-09	
WSW	376	6.376E-09	4.521E-09	3.432E-09	2.720E-09	2.210E-09	1.848E-09	1.571E-09	
W	221	4.588E-09	3.256E-09	2.474E-09	1.962E-09	1.594E-09	1.332E-09	1.132E-09	
WNW	198	4.295E-09	3.042E-09	2.307E-09	1.826E-09	1.482E-09	1.237E-09	1.050E-09	
NW	226	6.802E-09	4.822E-09	3.660E-09	2.898E-09	2.357E-09	1.964E-09	1.666E-09	
NNW	254	7.485E-09	5.311E-09	4.034E-09	3.196E-09	2.595E-09	2.166E-09	1.838E-09	
AVERAGE	8373	9.901E-09	7.038E-09	5.355E-09	4.249E-09	3.455E-09	2.888E-09	2.454E-09	

Table B-3

## Gamma X/Q Factors for Reactor Building Vent

BECO 1st quarter 1991 K/Q test ex

Ground Release: AVERAGE GAMMA DILUTION FACTORS (NET, AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.2	.25	.50	.75	1.00	1.50	2.00	2.50
N	107	6.91E-06	2.984E-06	1.514E-06	8.158E-07	5.763E-07	3.533E-07	2.479E-07	1.882E-07
NNE	200	8.17E-06	3.474E-06	1.531E-06	9.485E-07	6.716E-07	4.070E-07	2.837E-07	2.144E-07
NE	260	1.032E-05	4.478E-06	1.946E-06	1.203E-06	8.514E-07	5.198E-07	3.645E-07	2.768E-07
ENE	184	8.404E-06	3.612E-06	1.580E-06	9.756E-07	6.898E-07	4.190E-07	2.927E-07	2.18E-07
E	242	8.762E-06	3.754E-06	1.640E-06	1.001E-06	7.011E-07	4.193E-07	2.898E-07	2.177E-07
ESE	194	7.137E-06	2.983E-06	1.248E-06	7.430E-07	5.176E-07	3.072E-07	2.116E-07	1.588E-07
SE	198	6.782E-06	2.836E-06	1.173E-06	6.947E-07	4.849E-07	2.893E-07	1.998E-07	1.499E-07
SSE	104	4.310E-06	1.815E-06	7.516E-07	4.514E-07	3.180E-07	1.920E-07	1.336E-07	1.008E-07
S	91	4.058E-06	1.711E-06	6.492E-07	3.894E-07	2.734E-07	1.651E-07	1.151E-07	8.705E-08
SSW	100	3.613E-06	1.535E-06	5.951E-07	3.589E-07	2.510E-07	1.495E-07	1.030E-07	7.705E-08
SW	97	2.920E-06	1.239E-06	4.792E-07	2.880E-07	2.005E-07	1.186E-07	8.136E-08	6.080E-08
WSW	93	3.457E-06	1.474E-06	5.647E-07	3.391E-07	2.376E-07	1.424E-07	9.860E-08	7.409E-08
W	58	2.678E-06	1.153E-06	4.532E-07	3.033E-07	2.150E-07	1.291E-07	8.125E-08	6.103E-08
WNW	39	1.654E-06	7.172E-07	3.118E-07	1.927E-07	1.366E-07	8.336E-08	6.425E-08	4.872E-08
NW	61	3.226E-06	1.400E-06	6.111E-07	3.782E-07	2.676E-07	1.626E-07	1.135E-07	8.589E-08
NNW	67	3.184E-06	1.367E-06	6.043E-07	3.744E-07	2.648E-07	1.608E-07	1.123E-07	8.500E-08
AVERAGE	2095	5.347E-06	2.283E-06	9.658E-07	5.912E-07	4.162E-07	2.511E-07	1.746E-07	1.318E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	107	1.506E-07	1.246E-07	1.057E-07	9.132E-08	8.013E-08	4.883E-08	3.443E-08	2.104E-08
NNE	200	1.709E-07	1.409E-07	1.192E-07	1.026E-07	8.982E-08	5.422E-08	3.796E-08	2.292E-08
NE	260	2.212E-07	1.830E-07	1.552E-07	1.342E-07	1.178E-07	7.204E-08	5.088E-08	3.112E-08
ENE	184	1.771E-07	1.464E-07	1.240E-07	1.070E-07	9.379E-08	5.695E-08	4.066E-08	2.439E-08
E	242	1.726E-07	1.416E-07	1.193E-07	1.024E-07	8.935E-08	5.336E-08	3.705E-08	2.213E-08
ESE	194	1.258E-07	1.032E-07	8.687E-08	7.450E-08	6.496E-08	3.873E-08	2.665E-08	1.599E-08
SE	198	1.185E-07	9.714E-08	8.992E-08	7.713E-08	6.728E-08	3.651E-08	2.530E-08	1.503E-08
SSE	104	8.011E-08	6.597E-08	5.577E-08	4.804E-08	4.206E-08	2.547E-08	1.785E-08	1.078E-08
S	91	6.934E-08	5.718E-08	4.839E-08	4.172E-08	3.655E-08	2.217E-08	1.556E-08	9.423E-09
SSW	100	6.079E-08	4.971E-08	4.176E-08	3.576E-08	3.114E-08	1.849E-08	1.276E-08	7.511E-09
SW	97	4.801E-08	3.929E-08	3.302E-08	2.828E-08	2.462E-08	1.461E-08	1.010E-08	5.998E-09
WSW	93	5.864E-08	4.810E-08	4.456E-08	3.826E-08	3.339E-08	1.517E-08	1.261E-08	7.507E-09
W	58	4.833E-08	3.966E-08	3.341E-08	2.870E-08	2.506E-08	1.503E-08	1.045E-08	6.226E-09
WNW	39	3.887E-08	3.210E-08	2.473E-08	2.135E-08	1.874E-08	1.142E-08	8.044E-09	4.893E-09
NW	61	6.844E-08	5.646E-08	4.780E-08	4.123E-08	3.614E-08	2.196E-08	1.542E-08	9.349E-09
NNW	67	6.786E-08	5.604E-08	4.746E-08	4.090E-08	3.582E-08	2.167E-08	1.521E-08	9.242E-09
AVERAGE	2095	1.048E-07	8.634E-08	7.358E-08	6.334E-08	5.542E-08	3.310E-08	2.316E-08	1.397E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	107	1.486E-08	1.137E-08	9.183E-09	7.672E-09	6.538E-09	5.692E-09	5.021E-09	
NNE	200	1.606E-08	1.222E-08	9.820E-09	8.171E-09	6.938E-09	6.023E-09	5.299E-09	
NE	260	2.199E-08	1.685E-08	1.362E-08	1.139E-08	9.711E-09	8.452E-09	7.457E-09	
ENE	184	1.717E-08	1.312E-08	1.058E-08	8.831E-09	7.518E-09	6.539E-09	5.764E-09	
E	242	1.541E-08	1.168E-08	9.366E-09	7.782E-09	6.600E-09	5.727E-09	5.036E-09	
ESE	194	1.112E-08	8.416E-09	6.742E-09	5.597E-09	4.743E-09	4.114E-09	3.617E-09	
SE	198	1.045E-08	7.913E-09	6.343E-09	5.267E-09	4.466E-09	3.873E-09	3.405E-09	
SSE	104	7.567E-09	5.768E-09	4.647E-09	3.874E-09	3.295E-09	2.862E-09	2.527E-09	
S	91	6.626E-09	5.058E-09	4.078E-09	3.403E-09	2.896E-09	2.519E-09	2.220E-09	
SSW	100	5.192E-09	3.913E-09	3.124E-09	2.586E-09	2.185E-09	1.890E-09	1.657E-09	
SW	97	4.163E-09	3.147E-09	2.522E-09	2.094E-09	1.774E-09	1.538E-09	1.352E-09	
WSW	93	5.224E-09	3.958E-09	3.172E-09	2.634E-09	2.233E-09	1.936E-09	1.701E-09	
W	58	4.333E-09	3.281E-09	2.630E-09	2.182E-09	1.848E-09	1.600E-09	1.404E-09	
WNW	39	3.448E-09	2.636E-09	2.127E-09	1.776E-09	1.512E-09	1.314E-09	1.158E-09	
NW	61	6.572E-09	5.014E-09	4.041E-09	3.369E-09	2.865E-09	2.488E-09	2.191E-09	
NNW	67	6.497E-09	4.957E-09	3.994E-09	3.331E-09	2.834E-09	2.465E-09	2.172E-09	
AVERAGE	2095	9.792E-09	7.456E-09	6.000E-09	4.997E-09	4.247E-09	3.689E-09	3.248E-09	

Table B-3

## Gamma X/Q Factors for Reactor Building Vent

BECs 2nd quarter 1991 x/q tables

Ground Release: AVERAGE GAMMA DILUTION FACTORS (NET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	86	4.471E-06	1.902E-06	8.517E-07	5.274E-07	3.731E-07	2.259E-07	1.577E-07	1.193E-07
NNE	371	1.109E-05	4.717E-06	2.046E-06	1.254E-06	8.907E-07	5.429E-07	3.808E-07	2.895E-07
NE	366	1.101E-05	4.675E-06	1.976E-06	1.203E-06	8.559E-07	5.289E-07	3.749E-07	2.874E-07
ENE	155	7.934E-06	3.401E-06	1.444E-06	8.917E-07	6.383E-07	3.977E-07	2.831E-07	2.177E-07
E	110	6.408E-06	2.755E-06	1.184E-06	7.281E-07	5.179E-07	3.204E-07	2.272E-07	1.740E-07
ESE	102	4.791E-06	2.012E-06	8.306E-07	4.997E-07	3.554E-07	2.184E-07	1.542E-07	1.180E-07
SE	83	4.060E-06	1.716E-06	8.057E-07	4.920E-07	3.491E-07	2.135E-07	1.536E-07	1.135E-07
SSE	90	5.528E-06	2.315E-06	9.650E-07	5.299E-07	3.774E-07	2.315E-07	1.630E-07	1.243E-07
S	73	4.500E-06	1.878E-06	8.530E-07	5.918E-07	2.774E-07	1.693E-07	1.189E-07	9.072E-08
SSW	147	5.528E-06	2.267E-06	8.305E-07	4.880E-07	3.465E-07	2.118E-07	1.489E-07	1.136E-07
SW	186	7.004E-06	2.880E-06	1.071E-06	6.276E-07	4.421E-07	2.869E-07	1.862E-07	1.411E-07
WSW	159	7.301E-06	3.096E-06	1.197E-06	7.183E-07	5.040E-07	3.047E-07	2.130E-07	1.616E-07
W	78	3.944E-06	1.659E-06	6.468E-07	4.289E-07	3.022E-07	1.828E-07	1.160E-07	8.787E-08
WNW	44	2.079E-06	8.849E-07	3.812E-07	2.323E-07	1.639E-07	9.906E-08	7.592E-08	5.743E-08
NW	57	4.415E-06	1.882E-06	8.232E-07	5.093E-07	3.603E-07	2.193E-07	1.537E-07	1.165E-07
NNW	32	2.207E-06	9.485E-07	4.184E-07	2.590E-07	1.835E-07	1.115E-07	7.795E-08	5.906E-08
AVERAGE	2139	5.767E-06	2.437E-06	1.008E-06	6.114E-07	4.336E-07	2.653E-07	1.835E-07	1.414E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	86	9.528E-08	7.868E-08	6.640E-08	5.735E-08	5.019E-08	3.026E-08	2.119E-08	1.282E-08
NNE	371	2.320E-07	1.922E-07	1.632E-07	1.411E-07	1.239E-07	7.574E-08	5.349E-08	3.271E-08
NE	366	2.316E-07	1.929E-07	1.647E-07	1.431E-07	1.263E-07	7.845E-08	5.608E-08	3.496E-08
ENE	155	1.759E-07	1.469E-07	1.257E-07	1.095E-07	9.679E-08	6.059E-08	4.354E-08	2.732E-08
E	110	1.401E-07	1.165E-07	9.940E-08	8.634E-08	7.615E-08	4.724E-08	3.372E-08	2.095E-08
ESE	102	9.501E-08	7.908E-08	6.746E-08	5.858E-08	5.165E-08	3.205E-08	2.287E-08	1.419E-08
SE	83	8.328E-08	6.910E-08	6.464E-08	5.595E-08	4.910E-08	3.019E-08	2.140E-08	1.316E-08
SSE	90	2.987E-08	8.296E-08	7.064E-08	6.121E-08	5.387E-08	3.320E-08	2.360E-08	1.458E-08
S	73	7.293E-08	6.059E-08	5.158E-08	4.468E-08	3.931E-08	2.418E-08	1.718E-08	1.061E-08
SSW	147	9.125E-08	7.579E-08	6.450E-08	5.586E-08	4.913E-08	3.021E-08	2.144E-08	1.322E-08
SW	186	1.127E-07	9.316E-08	7.894E-08	6.807E-08	5.965E-08	3.617E-08	2.539E-08	1.539E-08
WSW	159	1.290E-07	1.065E-07	9.931E-08	8.571E-08	7.517E-08	4.155E-08	2.918E-08	1.769E-08
W	78	7.011E-08	5.787E-08	4.899E-08	4.222E-08	3.697E-08	2.235E-08	1.566E-08	9.472E-09
WNW	44	4.581E-08	3.782E-08	2.911E-08	2.510E-08	2.200E-08	1.334E-08	9.366E-09	5.680E-09
NW	57	9.370E-08	7.767E-08	6.599E-08	5.705E-08	5.011E-08	3.064E-08	2.166E-08	1.327E-08
NNW	32	4.715E-08	3.895E-08	3.300E-08	2.846E-08	2.495E-08	1.515E-08	1.064E-08	6.442E-09
AVERAGE	2139	1.135E-07	9.417E-08	8.086E-08	7.002E-08	6.158E-08	3.758E-08	2.655E-08	1.640E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	86	8.991E-09	6.848E-09	5.507E-09	4.587E-09	3.900E-09	3.393E-09	2.991E-09	
NNE	371	2.311E-08	1.770E-08	1.429E-08	1.194E-08	1.018E-08	8.864E-09	7.822E-09	
NE	366	2.501E-08	1.933E-08	1.373E-08	1.322E-08	1.133E-08	9.905E-09	8.775E-09	
ENE	155	1.962E-08	1.521E-08	1.240E-08	1.043E-08	8.950E-09	7.827E-09	6.937E-09	
E	110	1.496E-08	1.155E-08	9.390E-09	7.889E-09	6.756E-09	5.903E-09	5.227E-09	
ESE	102	1.012E-08	7.805E-09	6.335E-09	5.314E-09	4.545E-09	3.966E-09	3.507E-09	
SE	83	9.333E-09	7.165E-09	5.798E-09	4.853E-09	4.141E-09	3.610E-09	3.189E-09	
SSE	90	1.037E-08	7.979E-09	6.469E-09	5.422E-09	4.633E-09	4.042E-09	3.573E-09	
S	73	7.543E-09	5.803E-09	4.703E-09	3.942E-09	3.369E-09	2.941E-09	2.601E-09	
SSW	147	9.568E-09	7.217E-09	5.845E-09	4.895E-09	4.181E-09	3.647E-09	3.244E-09	
SW	186	1.082E-08	8.260E-09	6.652E-09	5.547E-09	4.720E-09	4.108E-09	3.623E-09	
WSW	159	1.245E-08	9.507E-09	7.665E-09	6.347E-09	5.448E-09	4.743E-09	4.185E-09	
W	78	6.653E-09	5.073E-09	4.085E-09	3.406E-09	2.899E-09	2.524E-09	2.226E-09	
WNW	44	3.995E-09	3.049E-09	2.459E-09	2.052E-09	1.747E-09	1.520E-09	1.340E-09	
NW	57	9.387E-09	7.193E-09	5.812E-09	4.859E-09	4.142E-09	3.609E-09	3.186E-09	
NNW	32	4.526E-09	3.451E-09	2.778E-09	2.314E-09	1.968E-09	1.710E-09	1.508E-09	
AVERAGE	2139	1.164E-08	8.946E-09	7.245E-09	6.067E-09	5.182E-09	4.519E-09	3.995E-09	

Table B-3

## Gamma X/Q Factors for Reactor Building Vent

BECO 3rd quarter 1991 X/Q tables

Ground Release: AVERAGE GAMMA DILUTION FACTORS (NET, AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) \* (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	156	1.138E-05	4.865E-06	2.108E-06	1.299E-06	9.179E-07	5.565E-07	3.885E-07	2.946E-07
NNE	450	1.753E-05	7.484E-06	3.229E-06	1.978E-06	1.397E-06	8.501E-07	5.952E-07	4.514E-07
NE	322	1.421E-05	6.133E-06	2.615E-06	1.599E-06	1.131E-06	7.023E-07	4.999E-07	3.840E-07
ENE	177	1.150E-05	4.929E-06	2.103E-06	1.291E-06	9.157E-07	5.646E-07	3.992E-07	3.053E-07
E	105	7.636E-06	3.221E-06	1.353E-06	8.182E-07	5.765E-07	3.502E-07	2.452E-07	1.864E-07
ESE	79	7.011E-06	2.977E-06	1.246E-06	7.571E-07	5.368E-07	3.308E-07	2.338E-07	1.788E-07
SE	87	6.858E-06	2.924E-06	1.367E-06	8.439E-07	6.009E-07	3.681E-07	2.348E-07	1.786E-07
SSE	80	5.364E-06	2.237E-06	9.089E-07	4.912E-07	3.441E-07	2.067E-07	1.438E-07	1.090E-07
S	88	6.162E-06	2.477E-06	7.889E-07	4.557E-07	3.233E-07	1.977E-07	1.387E-07	1.054E-07
SSW	95	5.274E-06	2.098E-06	7.237E-07	4.111E-07	2.881E-07	1.752E-07	1.203E-07	9.088E-08
SW	90	5.970E-06	2.444E-06	8.963E-07	5.257E-07	3.682E-07	2.199E-07	1.518E-07	1.139E-07
WSW	94	7.333E-06	3.018E-06	1.145E-06	6.835E-07	4.798E-07	2.873E-07	1.984E-07	1.497E-07
W	67	5.694E-06	2.435E-06	9.451E-07	6.345E-07	4.479E-07	2.732E-07	1.742E-07	1.323E-07
WNW	80	6.027E-06	2.573E-06	1.127E-06	6.924E-07	4.877E-07	2.941E-07	2.250E-07	1.698E-07
NW	47	5.390E-06	2.316E-06	1.025E-06	6.330E-07	4.470E-07	2.716E-07	1.899E-07	1.438E-07
NNW	68	6.963E-06	3.001E-06	1.324E-06	8.232E-07	5.844E-07	3.575E-07	2.511E-07	1.908E-07
AVERAGE	2085	6.145E-06	3.446E-06	1.432E-06	8.709E-07	6.154E-07	3.752E-07	2.619E-07	1.990E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	156	2.357E-07	1.950E-07	1.654E-07	1.428E-07	1.253E-07	7.625E-08	5.374E-08	3.279E-08
NNE	450	3.605E-07	2.979E-07	2.525E-07	2.179E-07	1.910E-07	1.161E-07	8.171E-08	4.976E-08
NE	322	3.096E-07	2.579E-07	2.203E-07	1.916E-07	1.691E-07	1.052E-07	7.329E-08	4.706E-08
ENE	177	2.455E-07	2.041E-07	1.739E-07	1.509E-07	1.329E-07	8.210E-08	5.847E-08	3.626E-08
E	105	1.492E-07	1.235E-07	1.049E-07	9.066E-08	7.961E-08	4.866E-08	3.436E-08	2.105E-08
ESE	79	1.437E-07	1.194E-07	1.018E-07	8.829E-08	7.778E-08	4.808E-08	3.424E-08	2.122E-08
SE	87	1.432E-07	1.187E-07	1.110E-07	9.609E-08	8.447E-08	5.186E-08	3.676E-08	2.261E-08
SSE	80	8.719E-08	7.214E-08	6.122E-08	5.290E-08	4.644E-08	2.838E-08	2.004E-08	1.224E-08
S	88	8.421E-08	6.965E-08	5.909E-08	5.107E-08	4.484E-08	2.742E-08	1.936E-08	1.183E-08
SSW	95	7.244E-08	5.976E-08	5.057E-08	4.354E-08	3.814E-08	2.307E-08	1.679E-08	9.836E-09
SW	90	9.014E-08	7.400E-08	6.231E-08	5.345E-08	4.662E-08	2.782E-08	1.930E-08	1.150E-08
WSW	94	1.190E-07	9.785E-08	9.079E-08	7.792E-08	6.799E-08	3.690E-08	2.565E-08	1.537E-08
W	67	1.058E-07	8.750E-08	7.424E-08	6.417E-08	5.639E-08	3.443E-08	2.431E-08	1.486E-08
WNW	80	1.351E-07	1.113E-07	8.546E-08	7.350E-08	6.425E-08	3.863E-08	2.696E-08	1.622E-08
NW	47	1.147E-07	9.462E-08	8.008E-08	6.899E-08	6.040E-08	3.650E-08	2.596E-08	1.551E-08
NNW	68	1.528E-07	1.266E-07	1.074E-07	9.282E-08	8.147E-08	4.970E-08	3.508E-08	2.148E-08
AVERAGE	2085	1.593E-07	1.319E-07	1.126E-07	9.728E-08	8.542E-08	5.194E-08	3.669E-08	2.248E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	156	2.311E-08	1.766E-08	1.424E-08	1.188E-08	1.011E-08	8.788E-09	7.743E-09	
NNE	450	3.507E-08	2.681E-08	2.164E-08	1.807E-08	1.539E-08	1.340E-08	1.182E-08	
NE	322	3.371E-08	2.609E-08	2.106E-08	1.790E-08	1.535E-08	1.343E-08	1.191E-08	
ENE	177	2.583E-08	1.991E-08	1.617E-08	1.357E-08	1.160E-08	1.013E-08	8.960E-09	
E	105	1.489E-08	1.141E-08	9.227E-09	7.716E-09	6.580E-09	5.731E-09	5.059E-09	
ESE	79	1.512E-08	1.165E-08	9.462E-09	7.940E-09	6.791E-09	5.927E-09	5.242E-09	
SE	87	1.601E-08	1.228E-08	9.934E-09	8.306E-09	7.080E-09	6.160E-09	5.431E-09	
SSE	80	8.641E-09	6.612E-09	5.339E-09	4.458E-09	3.796E-09	3.301E-09	2.909E-09	
S	88	8.360E-09	6.405E-09	5.177E-09	4.328E-09	3.690E-09	3.212E-09	2.834E-09	
SSW	95	6.926E-09	5.292E-09	4.271E-09	3.568E-09	3.040E-09	2.648E-09	2.337E-09	
SW	90	7.997E-09	6.056E-09	4.853E-09	4.029E-09	3.415E-09	2.961E-09	2.603E-09	
WSW	94	1.071E-08	8.123E-09	6.512E-09	5.409E-09	4.587E-09	3.983E-09	3.504E-09	
W	67	1.052E-08	8.066E-09	6.525E-09	5.458E-09	4.657E-09	4.056E-09	3.581E-09	
WNW	80	1.134E-08	8.619E-09	6.922E-09	5.757E-09	4.886E-09	4.243E-09	3.733E-09	
NW	47	1.089E-08	8.306E-09	6.690E-09	5.578E-09	4.746E-09	4.128E-09	3.640E-09	
NNW	68	1.516E-08	1.160E-08	9.370E-09	7.828E-09	6.670E-09	5.806E-09	5.122E-09	
AVERAGE	2085	1.589E-08	1.218E-08	9.849E-09	8.237E-09	7.025E-09	6.119E-09	5.402E-09	



Table B-3

## Gamma X/Q Factors for Reactor Building Vent

BECO 4th quarter 1991 x/q tables

Ground Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE SLUG) SECTOR AVERAGE MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	133	8.239E-06	3.553E-06	1.550E-06	9.654E-07	6.870E-07	4.208E-07	2.955E-07	2.247E-07
NNE	201	8.059E-06	3.442E-06	1.492E-06	9.183E-07	6.486E-07	3.940E-07	2.755E-07	2.091E-07
NE	237	1.017E-05	4.385E-06	1.910E-06	1.182E-06	8.377E-07	5.128E-07	3.605E-07	2.745E-07
ENE	232	1.140E-05	4.904E-06	2.156E-06	1.343E-06	9.345E-07	5.845E-07	4.105E-07	3.121E-07
E	223	9.099E-06	3.882E-06	1.690E-06	1.036E-06	7.306E-07	4.408E-07	3.065E-07	2.310E-07
ESE	191	8.217E-06	3.485E-06	1.485E-06	8.980E-07	6.290E-07	3.795E-07	2.592E-07	1.945E-07
SE	178	7.556E-06	3.180E-06	1.356E-06	8.153E-07	5.698E-07	3.385E-07	2.328E-07	1.740E-07
SSE	68	3.251E-06	1.361E-06	5.636E-07	3.385E-07	2.383E-07	1.438E-07	1.002E-07	7.589E-08
S	58	3.163E-06	1.331E-06	4.956E-07	2.978E-07	2.101E-07	1.273E-07	8.879E-08	6.728E-08
SSW	228	5.999E-06	2.537E-06	9.668E-07	5.789E-07	4.143E-07	2.424E-07	1.681E-07	1.267E-07
SW	74	2.847E-06	1.217E-06	4.721E-07	2.884E-07	2.033E-07	1.226E-07	8.514E-08	6.421E-08
WSW	30	1.724E-06	7.342E-07	2.789E-07	1.647E-07	1.201E-07	7.289E-08	5.077E-08	3.833E-08
W	18	7.696E-07	3.311E-07	1.314E-07	8.828E-08	6.173E-08	3.674E-08	2.302E-08	1.727E-08
WNW	35	1.927E-06	7.143E-07	3.330E-07	2.008E-07	1.421E-07	8.610E-08	6.604E-08	4.999E-08
NW	61	3.514E-06	1.512E-06	6.595E-07	4.090E-07	2.902E-07	1.765E-07	1.233E-07	9.329E-08
NNW	87	5.532E-06	2.380E-06	1.046E-06	6.548E-07	4.684E-07	2.861E-07	2.010E-07	1.528E-07
AVERAGE	2054	5.717E-06	2.439E-06	1.037E-06	6.364E-07	4.491E-07	2.726E-07	1.904E-07	1.441E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	133	1.800E-07	1.492E-07	1.267E-07	1.096E-07	9.634E-08	5.904E-08	4.178E-08	2.563E-08
NNE	201	1.672E-07	1.383E-07	1.173E-07	1.013E-07	8.866E-08	5.412E-08	3.814E-08	2.327E-08
NE	237	2.200E-07	1.824E-07	1.550E-07	1.341E-07	1.179E-07	7.228E-08	5.120E-08	3.143E-08
ENE	232	2.500E-07	2.071E-07	1.799E-07	1.521E-07	1.335E-07	8.159E-08	5.767E-08	3.535E-08
E	223	1.835E-07	1.509E-07	1.274E-07	1.095E-07	9.571E-08	5.751E-08	4.009E-08	2.404E-08
ESE	191	1.540E-07	1.264E-07	1.064E-07	9.136E-08	7.973E-08	4.769E-08	3.311E-08	1.973E-08
SE	178	1.372E-07	1.122E-07	1.036E-07	8.868E-08	7.708E-08	4.143E-08	2.850E-08	1.673E-08
SSE	68	6.060E-08	5.008E-08	4.244E-08	3.663E-08	3.212E-08	1.955E-08	1.376E-08	8.367E-09
S	58	5.373E-08	4.442E-08	3.769E-08	3.257E-08	2.860E-08	1.751E-08	1.237E-08	7.557E-09
SSW	228	1.006E-07	8.269E-08	6.981E-08	6.007E-08	5.254E-08	3.167E-08	2.212E-08	1.329E-08
SW	74	5.106E-08	4.205E-08	3.554E-08	3.061E-08	2.680E-08	1.621E-08	1.136E-08	6.811E-09
WSW	30	3.051E-08	2.515E-08	2.342E-08	2.021E-08	1.771E-08	9.800E-09	6.893E-09	4.184E-09
W	18	1.365E-08	1.118E-08	9.405E-09	8.063E-09	7.029E-09	4.190E-09	2.897E-09	1.710E-09
WNW	35	3.996E-08	3.302E-08	2.543E-08	2.191E-08	1.919E-08	1.161E-08	8.155E-09	4.960E-09
NW	61	7.441E-08	6.143E-08	5.202E-08	4.486E-08	3.932E-08	2.388E-08	1.678E-08	1.017E-08
NNW	87	1.225E-07	1.015E-07	8.623E-08	7.436E-08	6.548E-08	4.066E-08	2.833E-08	1.736E-08
AVERAGE	2054	1.149E-07	9.487E-08	8.090E-08	6.975E-08	6.112E-08	3.676E-08	2.582E-08	1.567E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	133	1.613E-08	1.389E-08	1.123E-08	9.387E-09	8.000E-09	6.960E-09	6.137E-09	
NNE	201	1.641E-08	1.255E-08	1.013E-08	8.456E-09	7.201E-09	6.265E-09	5.524E-09	
NE	237	2.231E-08	1.713E-08	1.387E-08	1.161E-08	9.906E-09	8.632E-09	7.623E-09	
ENE	232	2.499E-08	1.914E-08	1.547E-08	1.293E-08	1.102E-08	9.592E-09	8.482E-09	
E	223	1.678E-08	1.274E-08	1.022E-08	8.499E-09	7.210E-09	6.255E-09	5.501E-09	
ESE	191	1.373E-08	1.040E-08	8.332E-09	6.917E-09	5.861E-09	5.079E-09	4.461E-09	
SE	178	1.154E-08	8.680E-09	6.919E-09	5.719E-09	4.829E-09	4.176E-09	3.640E-09	
SSE	68	5.890E-09	4.499E-09	3.627E-09	3.025E-09	2.573E-09	2.236E-09	1.970E-09	
S	58	5.339E-09	4.089E-09	3.305E-09	2.762E-09	2.353E-09	2.046E-09	1.804E-09	
SSW	228	9.304E-09	7.081E-09	5.697E-09	4.745E-09	4.033E-09	3.503E-09	3.085E-09	
SW	74	4.802E-09	3.656E-09	2.942E-09	2.430E-09	2.081E-09	1.805E-09	1.588E-09	
WSW	30	2.945E-09	2.249E-09	1.816E-09	1.515E-09	1.289E-09	1.120E-09	9.860E-10	
W	18	1.183E-09	8.920E-10	7.119E-10	5.889E-10	4.974E-10	4.298E-10	3.766E-10	
WNW	35	3.488E-09	2.662E-09	2.145E-09	1.788E-09	1.521E-09	1.323E-09	1.166E-09	
NW	61	7.161E-09	5.463E-09	4.402E-09	3.669E-09	3.120E-09	2.709E-09	2.385E-09	
NNW	87	1.227E-08	9.395E-09	7.588E-09	6.337E-09	5.397E-09	4.695E-09	4.138E-09	
AVERAGE	2054	1.102E-08	8.407E-09	6.775E-09	5.630E-09	4.806E-09	4.177E-09	3.679E-09	

Table B-3

## Gamma X/Q Factors for Reactor Building Vent

BECO yearly - x/q tables - 1991

Ground Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	482	7.132E-06	3.056E-06	1.340E-06	8.307E-07	5.891E-07	3.591E-07	2.517E-07	1.913E-07
NNE	1222	1.065E-07	4.541E-06	1.971E-06	1.212E-06	8.578E-07	5.222E-07	3.658E-07	2.777E-07
NE	1185	1.086E-05	4.661E-06	1.999E-06	1.227E-06	8.705E-07	5.566E-07	3.795E-07	2.903E-07
ENE	748	9.205E-06	3.947E-06	1.705E-06	1.054E-06	7.502E-07	4.622E-07	3.264E-07	2.493E-07
E	680	7.480E-06	3.192E-06	1.377E-06	8.424E-07	5.947E-07	3.615E-07	2.531E-07	1.920E-07
ESE	566	6.317E-06	2.664E-06	1.119E-06	6.747E-07	4.755E-07	2.882E-07	2.013E-07	1.527E-07
SE	546	5.844E-06	2.467E-06	1.149E-06	6.958E-07	4.909E-07	2.968E-07	2.067E-07	1.421E-07
SSE	342	4.630E-06	1.939E-06	8.013E-07	4.374E-07	3.090E-07	1.875E-07	1.311E-07	9.950E-08
S	310	4.406E-06	1.826E-06	6.176E-07	3.664E-07	2.590E-07	1.577E-07	1.106E-07	8.404E-08
SSW	570	4.892E-06	2.020E-06	7.465E-07	4.402E-07	3.097E-07	1.870E-07	1.303E-07	9.857E-08
SW	447	4.634E-06	1.919E-06	7.188E-07	4.258E-07	2.990E-07	1.794E-07	1.244E-07	9.380E-08
WSW	376	4.899E-06	2.056E-06	7.876E-07	4.721E-07	3.315E-07	1.993E-07	1.389E-07	1.049E-07
W	221	3.166E-06	1.345E-06	5.246E-07	3.510E-07	2.474E-07	1.499E-07	1.046E-07	7.199E-08
WNW	198	2.716E-06	1.154E-06	5.000E-07	3.062E-07	2.163E-07	1.311E-07	9.147E-08	7.617E-08
NW	226	3.961E-06	1.699E-06	7.447E-07	4.604E-07	3.263E-07	1.966E-07	1.390E-07	1.055E-07
NNW	254	4.085E-06	1.756E-06	7.741E-07	4.821E-07	3.427E-07	2.097E-07	1.473E-07	1.120E-07
AVERAGE	8373	5.930E-06	2.515E-06	1.055E-06	6.474E-07	4.544E-07	2.767E-07	1.939E-07	1.464E-07

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	482	1.532E-07	1.269E-07	1.077E-07	9.309E-08	8.173E-08	4.990E-08	3.524E-08	2.157E-08
NNE	1222	2.222E-07	1.838E-07	1.559E-07	1.347E-07	1.181E-07	7.199E-08	5.074E-08	3.096E-08
NE	1185	2.335E-07	1.941E-07	1.654E-07	1.435E-07	1.265E-07	7.824E-08	5.576E-08	3.459E-08
ENE	748	2.005E-07	1.666E-07	1.419E-07	1.231E-07	1.084E-07	6.691E-08	4.762E-08	2.949E-08
E	680	1.934E-07	1.268E-07	1.075E-07	9.283E-08	8.144E-08	4.960E-08	3.493E-08	2.129E-08
ESE	566	1.220E-07	1.009E-07	8.556E-08	7.390E-08	6.484E-08	3.954E-08	2.787E-08	1.699E-08
SE	546	1.132E-07	9.339E-08	7.903E-08	6.811E-08	6.562E-08	3.975E-08	2.787E-08	1.686E-08
SSE	342	7.943E-08	6.593E-08	5.597E-08	4.839E-08	4.250E-08	2.601E-08	1.838E-08	1.125E-08
S	310	6.728E-08	5.572E-08	4.732E-08	4.092E-08	3.595E-08	2.202E-08	1.557E-08	9.339E-09
SSW	570	7.841E-08	6.488E-08	5.4E-08	4.737E-08	4.150E-08	2.518E-08	1.768E-08	1.072E-08
SW	447	7.459E-08	6.140E-08	5.106E-08	4.461E-08	3.900E-08	2.347E-08	1.638E-08	9.847E-09
WSW	376	8.350E-08	6.880E-08	5.874E-08	5.007E-08	4.800E-08	2.644E-08	1.849E-08	1.114E-08
W	221	5.740E-08	4.736E-08	4.010E-08	3.457E-08	3.029E-08	1.837E-08	1.259E-08	7.813E-09
WNW	198	6.078E-08	5.019E-08	4.250E-08	3.664E-08	2.918E-08	1.766E-08	1.241E-08	7.527E-09
NW	226	8.429E-08	6.969E-08	5.909E-08	5.101E-08	4.474E-08	2.723E-08	1.912E-08	1.168E-08
NNW	254	8.977E-08	7.437E-08	6.317E-08	5.462E-08	4.795E-08	2.931E-08	2.071E-08	1.249E-08
AVERAGE	8373	1.171E-07	9.693E-08	8.226E-08	7.109E-08	6.287E-08	3.823E-08	2.698E-08	1.650E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	482	1.534E-08	1.167E-08	9.427E-09	7.876E-09	6.712E-09	5.843E-09	5.155E-09	
NNE	1222	2.184E-08	1.670E-08	1.348E-08	1.126E-08	9.590E-09	8.347E-09	7.363E-09	
NE	1185	2.447E-08	1.903E-08	1.546E-08	1.298E-08	1.111E-08	9.706E-09	8.591E-09	
ENE	748	2.099E-08	1.616E-08	1.311E-08	1.100E-08	9.401E-09	8.203E-09	7.253E-09	
E	680	1.902E-08	1.149E-08	9.275E-09	7.748E-09	6.602E-09	5.748E-09	5.072E-09	
ESE	566	1.199E-08	9.174E-09	7.409E-09	6.190E-09	5.274E-09	4.591E-09	4.050E-09	
SE	546	1.184E-08	9.026E-09	7.267E-09	6.056E-09	5.149E-09	4.475E-09	3.942E-09	
SSE	342	7.955E-09	6.095E-09	4.927E-09	4.119E-09	3.511E-09	3.056E-09	2.696E-09	
S	310	6.752E-09	5.179E-09	4.189E-09	3.504E-09	2.989E-09	2.604E-09	2.299E-09	
SSW	570	7.542E-09	5.759E-09	4.643E-09	3.874E-09	3.298E-09	2.869E-09	2.530E-09	
SW	447	6.889E-09	5.238E-09	4.209E-09	3.503E-09	2.975E-09	2.583E-09	2.276E-09	
WSW	376	7.808E-09	5.946E-09	4.783E-09	3.984E-09	3.387E-09	2.944E-09	2.594E-09	
W	221	5.494E-09	4.194E-09	3.380E-09	2.820E-09	2.400E-09	2.088E-09	1.841E-09	
WNW	198	5.291E-09	4.037E-09	3.252E-09	2.711E-09	2.306E-09	2.006E-09	1.768E-09	
NW	226	8.231E-09	6.292E-09	5.076E-09	4.237E-09	3.607E-09	3.139E-09	2.767E-09	
NNW	254	8.967E-09	6.869E-09	5.550E-09	4.638E-09	3.952E-09	3.441E-09	3.036E-09	
AVERAGE	8373	1.166E-08	8.929E-09	7.215E-09	6.031E-09	5.142E-09	4.478E-09	3.952E-09	



Table B-4

## Deposition D/Q Factors for Reactor Building Vent

BECO 1st quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Ground Release: AVERAGE DEPOSITION RATES (REGULATORY GUIDE 1.111 MODEL) - (1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	107	8.639E-08	2.905E-08	9.811E-09	5.177E-09	3.203E-09	1.549E-09	9.450E-10	6.440E-10
NNE	200	1.615E-07	5.430E-08	1.834E-08	9.677E-09	5.987E-09	2.895E-09	1.766E-09	1.204E-09
NE	260	2.099E-07	7.059E-08	2.364E-08	1.258E-08	7.783E-09	3.764E-09	2.296E-09	1.565E-09
ENE	184	1.486E-07	4.996E-08	1.687E-08	8.903E-09	5.508E-09	2.666E-09	1.625E-09	1.107E-09
E	242	1.954E-07	6.571E-08	2.219E-08	1.171E-08	7.245E-09	3.503E-09	2.137E-09	1.457E-09
ESE	194	1.566E-07	5.267E-08	1.779E-08	9.387E-09	5.808E-09	2.808E-09	1.713E-09	1.188E-09
SE	198	1.599E-07	5.376E-08	1.816E-08	9.580E-09	5.927E-09	2.866E-09	1.744E-09	1.192E-09
SSE	104	8.397E-08	2.824E-08	9.536E-09	5.032E-09	3.113E-09	1.506E-09	9.185E-10	6.259E-10
S	91	8.082E-08	2.718E-08	8.344E-09	4.403E-09	2.724E-09	1.317E-09	8.037E-10	5.477E-10
SSW	100	8.881E-08	2.987E-08	9.169E-09	4.839E-09	2.994E-09	1.448E-09	8.832E-10	6.019E-10
SW	97	8.615E-08	2.897E-08	8.894E-09	4.693E-09	2.904E-09	1.404E-09	8.567E-10	5.838E-10
WSW	93	8.260E-08	2.778E-08	8.527E-09	4.500E-09	2.784E-09	1.346E-09	8.214E-10	5.597E-10
W	58	5.151E-08	1.777E-08	5.318E-09	3.087E-09	1.910E-09	9.236E-10	5.123E-10	3.491E-10
WNW	39	3.149E-08	1.059E-08	3.576E-09	1.887E-09	1.168E-09	5.646E-10	3.789E-10	2.582E-10
NW	61	4.925E-08	1.656E-08	5.593E-09	2.951E-09	1.826E-09	8.831E-10	5.385E-10	3.671E-10
NNW	67	5.409E-08	1.819E-08	6.143E-09	3.242E-09	2.004E-09	9.699E-10	5.918E-10	4.032E-10
AVERAGE	2095	1.079E-07	3.630E-08	1.201E-08	6.353E-09	3.931E-09	1.901E-09	1.159E-09	7.895E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	107	4.712E-10	3.604E-10	2.850E-10	2.290E-10	1.890E-10	9.474E-11	5.826E-11	2.874E-11
NNE	200	8.808E-10	4.737E-10	3.327E-10	4.281E-10	3.532E-10	1.771E-10	1.089E-10	5.373E-11
NE	260	1.145E-09	5.758E-10	4.925E-10	5.565E-10	4.592E-10	2.302E-10	1.416E-10	6.985E-11
ENE	184	8.103E-10	4.198E-10	4.901E-10	3.938E-10	3.249E-10	1.629E-10	1.002E-10	4.943E-11
E	242	1.064E-09	8.152E-10	6.446E-10	5.180E-10	4.274E-10	2.143E-10	1.318E-10	6.501E-11
ESE	194	8.544E-10	6.535E-10	5.167E-10	4.152E-10	3.426E-10	1.718E-10	1.056E-10	5.212E-11
SE	198	8.720E-10	6.670E-10	5.801E-10	4.662E-10	3.846E-10	1.753E-10	1.078E-10	5.194E-11
SSE	104	4.580E-10	3.503E-10	2.770E-10	2.226E-10	1.837E-10	9.209E-11	5.663E-11	2.794E-11
S	91	4.008E-10	3.065E-10	2.424E-10	1.948E-10	1.607E-10	8.058E-11	4.955E-11	2.445E-11
SSW	100	4.404E-10	3.369E-10	2.664E-10	2.140E-10	1.766E-10	8.855E-11	5.445E-11	2.686E-11
SW	97	4.272E-10	3.267E-10	2.584E-10	2.076E-10	1.713E-10	8.589E-11	5.281E-11	2.606E-11
WSW	93	4.096E-10	3.133E-10	2.725E-10	2.190E-10	1.807E-10	8.235E-11	5.064E-11	2.498E-11
W	58	2.574E-10	1.054E-10	1.545E-10	1.241E-10	1.024E-10	5.134E-11	3.158E-11	1.558E-11
WNW	39	1.889E-10	1.445E-10	1.039E-10	8.348E-11	6.887E-11	3.453E-11	2.123E-11	1.048E-11
NW	61	2.386E-10	2.055E-10	1.675E-10	1.306E-10	1.077E-10	5.401E-11	3.321E-11	1.639E-11
NNW	67	2.951E-10	2.257E-10	1.785E-10	1.434E-10	1.183E-10	5.933E-11	3.648E-11	1.800E-11
AVERAGE	2095	5.777E-10	4.419E-10	3.536E-10	2.842E-10	2.344E-10	1.189E-10	7.129E-11	3.518E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	35.00	40.00	45.00	50.00	
N	107	1.767E-11	1.190E-11	8.301E-12	6.254E-12	4.889E-12	3.998E-12	3.320E-12	
NNE	200	3.302E-11	2.223E-11	1.567E-11	1.175E-11	9.138E-12	7.473E-12	6.205E-12	
NE	260	4.293E-11	2.890E-11	2.037E-11	1.527E-11	1.188E-11	9.715E-12	8.067E-12	
ENE	184	3.038E-11	2.046E-11	1.441E-11	1.081E-11	8.407E-12	6.875E-12	5.709E-12	
E	242	3.996E-11	2.690E-11	1.896E-11	1.421E-11	1.106E-11	9.042E-12	7.508E-12	
ESE	194	3.203E-11	2.157E-11	1.520E-11	1.139E-11	8.364E-12	7.249E-12	6.019E-12	
SE	198	3.269E-11	2.201E-11	1.551E-11	1.163E-11	9.046E-12	7.398E-12	6.143E-12	
SSE	104	1.717E-11	1.156E-11	8.142E-12	6.108E-12	4.752E-12	3.886E-12	3.227E-12	
S	91	1.503E-11	1.012E-11	7.128E-12	5.345E-12	4.158E-12	3.400E-12	2.812E-12	
SSW	100	1.651E-11	1.112E-11	7.833E-12	5.873E-12	4.569E-12	3.737E-12	3.103E-12	
SW	97	1.602E-11	1.078E-11	7.598E-12	5.697E-12	4.432E-12	3.624E-12	3.009E-12	
WSW	93	1.536E-11	1.034E-11	7.285E-12	5.462E-12	4.249E-12	3.475E-12	2.885E-12	
W	58	9.577E-12	6.448E-12	4.543E-12	3.407E-12	2.650E-12	2.167E-12	1.799E-12	
WNW	39	6.440E-12	4.336E-12	3.055E-12	2.291E-12	1.782E-12	1.457E-12	1.210E-12	
NW	61	1.007E-11	6.781E-12	4.778E-12	3.583E-12	2.787E-12	2.279E-12	1.893E-12	
NNW	67	1.106E-11	7.448E-12	5.248E-12	3.935E-12	3.061E-12	2.503E-12	2.079E-12	
AVERAGE	2095	2.162E-11	1.456E-11	1.026E-11	7.690E-12	5.982E-12	4.892E-12	4.040E-12	

Table B-4

## Deposition D/Q Factors for Reactor Building Vent

BECs 2nd quarter 1991 w/q tables

SECTOR AVERAGE MODEL

Ground Release: AVERAGE DEPOSITION RATES (REGULATORY GUIDE 1.111 MODEL)  $\times (1/M^2)$ 

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	86	6.801E-08	5.287E-08	7.723E-09	4.076E-09	2.522E-09	1.219E-09	7.439E-10	5.070E-10
NNE	371	2.934E-07	9.666E-08	3.332E-08	1.758E-08	1.088E-08	5.260E-09	3.209E-09	2.187E-09
NE	366	2.894E-07	9.733E-08	3.287E-08	1.734E-08	1.073E-08	5.189E-09	3.166E-09	2.158E-09
ENE	155	1.226E-07	4.122E-08	1.392E-08	7.345E-09	4.545E-09	2.198E-09	1.341E-09	9.137E-10
E	110	8.699E-08	2.925E-08	9.879E-09	5.213E-09	3.225E-09	1.860E-09	9.516E-10	6.484E-10
ESE	102	6.066E-08	2.712E-08	9.160E-09	4.834E-09	2.991E-09	1.446E-09	8.624E-10	6.013E-10
SE	83	6.563E-08	2.207E-08	8.199E-09	4.327E-09	2.677E-09	1.295E-09	7.180E-10	4.893E-10
SSE	90	7.829E-08	2.633E-08	8.891E-09	7.535E-09	2.639E-09	1.276E-09	7.785E-10	5.305E-10
S	73	6.927E-08	2.330E-08	6.556E-09	3.459E-09	2.140E-09	1.035E-09	6.315E-10	4.303E-10
SSW	147	1.279E-07	4.300E-08	1.320E-08	6.966E-09	4.310E-09	2.084E-09	1.272E-09	8.665E-10
SW	186	1.618E-07	5.441E-08	1.670E-08	8.814E-09	5.454E-09	2.637E-09	1.609E-09	1.096E-09
WSW	159	1.383E-07	4.651E-08	1.428E-08	7.535E-09	4.662E-09	2.254E-09	1.375E-09	9.378E-10
W	78	6.753E-08	2.282E-08	7.005E-09	4.066E-09	2.516E-09	1.217E-09	6.747E-10	4.598E-10
WNW	44	3.479E-08	1.170E-08	3.951E-09	2.085E-09	1.290E-09	6.239E-10	4.187E-10	2.853E-10
NW	57	4.507E-08	1.516E-08	5.119E-09	2.701E-09	1.671E-09	8.082E-10	4.931E-10	3.360E-10
NNW	32	2.530E-08	8.510E-09	2.874E-09	1.516E-09	9.383E-10	4.537E-10	2.768E-10	1.886E-10
AVERAGE	2139	1.097E-07	3.689E-08	1.210E-08	6.383E-09	3.949E-09	1.910E-09	1.159E-09	7.897E-10

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	86	3.709E-10	2.837E-10	2.244E-10	1.803E-10	1.488E-10	7.458E-11	4.586E-11	2.263E-11
NNE	371	1.600E-09	1.224E-09	9.678E-10	7.778E-10	6.417E-10	3.217E-10	1.978E-10	9.762E-11
NE	366	1.579E-09	1.208E-09	9.548E-10	7.673E-10	6.331E-10	3.174E-10	1.952E-10	9.630E-11
ENE	155	6.686E-10	5.114E-10	4.044E-10	3.249E-10	2.681E-10	1.344E-10	8.266E-11	4.078E-11
E	110	7.745E-10	3.629E-10	2.870E-10	2.306E-10	1.903E-10	9.540E-11	5.866E-11	2.894E-11
ESE	102	4.400E-10	3.365E-10	2.661E-10	2.138E-10	1.764E-10	8.846E-11	5.439E-11	2.884E-11
SE	83	3.580E-10	2.738E-10	2.382E-10	1.914E-10	1.574E-10	7.918E-11	4.869E-11	2.402E-11
SSE	90	3.887E-10	2.969E-10	2.348E-10	1.887E-10	1.557E-10	7.805E-11	4.800E-11	2.368E-11
S	73	3.149E-10	2.408E-10	1.904E-10	1.530E-10	1.263E-10	6.331E-11	3.893E-11	1.921E-11
SSW	147	6.341E-10	4.850E-10	3.839E-10	3.082E-10	2.543E-10	1.275E-10	7.839E-11	3.868E-11
SW	186	8.023E-10	6.137E-10	4.852E-10	3.899E-10	3.217E-10	1.613E-10	9.919E-11	4.894E-11
WSW	159	6.858E-10	5.246E-10	4.563E-10	3.667E-10	3.025E-10	1.379E-10	8.479E-11	4.184E-11
W	78	3.364E-10	2.573E-10	2.035E-10	1.635E-10	1.349E-10	6.764E-11	4.160E-11	2.052E-11
WNW	44	2.088E-10	1.597E-10	1.148E-10	9.224E-11	7.611E-11	3.816E-11	2.346E-11	1.158E-11
NW	57	2.459E-10	1.881E-10	1.487E-10	1.195E-10	9.859E-11	4.943E-11	3.040E-11	1.500E-11
NNW	32	1.380E-10	1.056E-10	8.348E-11	6.708E-11	5.535E-11	2.775E-11	1.706E-11	8.420E-12
AVERAGE	2139	5.778E-10	4.420E-10	3.527E-10	2.834E-10	2.339E-10	1.164E-10	7.157E-11	3.531E-11

DOWNWIND SECTOR	NO. DBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	86	1.391E-11	9.364E-12	6.598E-12	4.947E-12	3.848E-12	3.147E-12	2.613E-12	
NNE	371	6.000E-11	4.040E-11	2.846E-11	2.134E-11	1.660E-11	1.358E-11	1.127E-11	
NE	366	5.919E-11	3.985E-11	2.808E-11	2.105E-11	1.638E-11	1.339E-11	1.112E-11	
ENE	155	2.507E-11	1.688E-11	1.189E-11	8.916E-12	6.936E-12	5.672E-12	4.710E-12	
E	110	1.779E-11	1.198E-11	8.439E-12	6.328E-12	4.922E-12	4.026E-12	3.343E-12	
ESE	102	1.650E-11	1.111E-11	7.825E-12	5.860E-12	4.564E-12	3.733E-12	3.100E-12	
SE	83	1.477E-11	9.941E-12	7.004E-12	5.252E-12	4.086E-12	3.341E-12	2.774E-12	
SSE	90	1.455E-11	9.799E-12	6.905E-12	5.177E-12	4.027E-12	3.294E-12	2.735E-12	
S	73	1.181E-11	7.948E-12	5.600E-12	4.199E-12	3.267E-12	2.672E-12	2.188E-12	
SSW	147	2.377E-11	1.601E-11	1.128E-11	8.456E-12	6.578E-12	5.390E-12	4.467E-12	
SW	186	3.008E-11	2.025E-11	1.427E-11	1.070E-11	8.323E-12	6.807E-12	5.652E-12	
WSW	159	2.571E-11	1.731E-11	1.220E-11	9.147E-12	7.115E-12	5.819E-12	4.832E-12	
W	78	1.261E-11	8.493E-12	5.984E-12	4.487E-12	3.490E-12	2.855E-12	2.370E-12	
WNW	44	7.116E-12	4.791E-12	3.376E-12	2.531E-12	1.969E-12	1.610E-12	1.337E-12	
NW	57	9.218E-12	6.206E-12	4.373E-12	3.279E-12	2.551E-12	2.086E-12	1.732E-12	
NNW	32	5.175E-12	3.484E-12	2.455E-12	1.841E-12	1.432E-12	1.171E-12	9.724E-13	
AVERAGE	2139	2.170E-11	1.461E-11	1.030E-11	7.720E-12	6.006E-12	4.911E-12	4.078E-12	

Table B-4

## Deposition D/Q Factors for Reactor Building Vent

BECe 3rd quarter 1991 A/G tables

SECTOR AVERAGE MODEL

Ground Release: AVERAGE DEPOSITION RATES (REGULATORY GUIDE 1.111 MODEL) = (1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	156	1.266E-07	4.256E-08	1.437E-08	7.584E-09	4.692E-09	2.269E-09	1.384E-09	9.434E-10
NNE	450	3.651E-07	1.228E-07	4.146E-08	2.188E-08	1.354E-08	6.546E-09	3.994E-09	2.721E-09
NE	322	2.612E-07	8.785E-08	2.967E-08	1.565E-08	9.686E-09	4.684E-09	2.858E-09	1.947E-09
ENE	177	1.636E-07	4.829E-08	1.631E-08	8.605E-09	5.324E-09	2.575E-09	1.371E-09	1.070E-09
E	105	8.518E-08	2.865E-08	9.674E-09	5.105E-09	3.158E-09	1.527E-09	9.318E-10	6.350E-10
ESE	79	6.409E-08	2.155E-08	7.278E-09	3.841E-09	2.376E-09	1.149E-09	7.011E-10	4.778E-10
SE	87	7.058E-08	2.374E-08	8.817E-09	4.653E-09	2.879E-09	1.392E-09	7.721E-10	5.261E-10
SSE	81	7.139E-08	2.401E-08	8.108E-09	3.889E-09	2.406E-09	1.164E-09	7.100E-10	4.838E-10
S	88	8.567E-08	2.881E-08	8.108E-09	4.278E-09	2.647E-09	1.280E-09	7.810E-10	5.322E-10
SSW	95	8.478E-08	2.851E-08	8.793E-09	4.619E-09	2.858E-09	1.382E-09	8.431E-10	5.745E-10
SW	90	8.031E-08	2.701E-08	8.292E-09	4.376E-09	2.707E-09	1.309E-09	7.987E-10	5.443E-10
WSW	94	8.388E-08	2.821E-08	8.660E-09	4.570E-09	2.828E-09	1.367E-09	8.342E-10	5.685E-10
W	67	5.979E-08	2.011E-08	6.173E-09	3.583E-09	2.217E-09	1.072E-09	5.946E-10	4.052E-10
WNW	80	6.490E-08	2.183E-08	7.371E-09	3.889E-09	2.406E-09	1.164E-09	7.810E-10	5.322E-10
NW	47	3.813E-08	1.282E-08	4.330E-09	2.285E-09	1.414E-09	6.371E-10	4.171E-10	2.842E-10
NNW	68	5.517E-08	1.855E-08	6.265E-09	3.306E-09	2.045E-09	9.891E-10	6.035E-10	4.112E-10
AVERAGE	2085	1.088E-07	3.658E-08	1.210E-08	6.382E-09	3.949E-09	1.910E-09	1.161E-09	7.911E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	156	6.903E-10	5.280E-10	4.175E-10	3.355E-10	2.768E-10	1.380E-10	8.531E-11	4.211E-11
NNE	450	1.991E-09	1.823E-09	1.204E-09	9.678E-10	7.985E-10	4.004E-10	2.462E-10	1.275E-10
NE	322	1.425E-09	1.090E-09	8.618E-10	6.925E-10	5.714E-10	2.865E-10	1.762E-10	8.692E-11
ENE	177	7.832E-10	5.991E-10	4.737E-10	3.807E-10	3.141E-10	1.575E-10	9.684E-11	4.778E-11
E	105	4.646E-10	3.554E-10	2.810E-10	2.258E-10	1.863E-10	9.342E-11	5.744E-11	2.834E-11
ESE	79	3.496E-10	2.674E-10	2.114E-10	1.699E-10	1.402E-10	7.029E-11	4.322E-11	2.132E-11
SE	87	3.850E-10	2.945E-10	2.561E-10	2.058E-10	1.698E-10	8.514E-11	5.236E-11	2.583E-11
SSE	80	3.540E-10	2.708E-10	2.141E-10	1.721E-10	1.420E-10	7.118E-11	4.377E-11	2.159E-11
S	88	3.694E-10	2.979E-10	2.355E-10	1.893E-10	1.562E-10	7.829E-11	4.814E-11	2.375E-11
SSW	95	4.204E-10	3.215E-10	2.543E-10	2.043E-10	1.686E-10	8.452E-11	5.197E-11	2.564E-11
SW	90	3.983E-10	3.046E-10	2.409E-10	1.934E-10	1.597E-10	8.007E-11	4.924E-11	2.429E-11
WSW	94	4.160E-10	3.182E-10	2.747E-10	2.224E-10	1.835E-10	8.363E-11	5.143E-11	2.537E-11
W	67	2.965E-10	2.268E-10	1.793E-10	1.441E-10	1.189E-10	5.961E-11	3.666E-11	1.809E-11
WNW	80	3.894E-10	2.979E-10	2.141E-10	1.721E-10	1.420E-10	7.118E-11	4.377E-11	2.159E-11
NW	47	2.080E-10	1.591E-10	1.258E-10	1.011E-10	.340E-11	4.182E-11	2.571E-11	1.269E-11
NNW	68	3.009E-10	2.302E-10	1.820E-10	1.462E-10	1.207E-10	6.050E-11	3.720E-11	1.823E-11
AVERAGE	2085	5.789E-10	4.428E-10	3.518E-10	2.827E-10	2.332E-10	1.164E-10	7.159E-11	3.538E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	156	2.588E-11	1.743E-11	1.228E-11	9.206E-12	7.162E-12	5.857E-12	4.863E-12	
NNE	450	7.466E-11	5.027E-11	3.542E-11	2.656E-11	2.066E-11	1.689E-11	1.403E-11	
NE	322	5.342E-11	3.597E-11	2.534E-11	1.900E-11	1.478E-11	1.209E-11	1.004E-11	
ENE	177	2.937E-11	1.977E-11	1.393E-11	1.045E-11	8.126E-12	6.645E-12	5.518E-12	
E	105	1.742E-11	1.173E-11	8.264E-12	6.197E-12	4.820E-12	3.942E-12	3.273E-12	
ESE	79	1.311E-11	8.824E-12	6.218E-12	4.662E-12	3.627E-12	2.966E-12	2.463E-12	
SE	87	1.588E-11	1.069E-11	7.532E-12	5.648E-12	4.393E-12	3.593E-12	2.983E-12	
SSE	80	1.327E-11	8.956E-12	6.296E-12	4.721E-12	3.673E-12	3.004E-12	2.494E-12	
S	88	1.460E-11	9.830E-12	6.926E-12	5.193E-12	4.071E-12	3.304E-12	2.743E-12	
SSW	95	1.776E-11	1.061E-11	7.477E-12	5.606E-12	4.341E-12	3.567E-12	2.962E-12	
SW	90	1.493E-11	1.005E-11	7.063E-12	5.311E-12	4.132E-12	3.379E-12	2.808E-12	
WSW	94	1.560E-11	1.050E-11	7.398E-12	5.547E-12	4.315E-12	3.529E-12	2.930E-12	
W	67	1.112E-11	7.484E-12	5.273E-12	3.954E-12	3.076E-12	2.515E-12	2.081E-12	
WNW	80	1.327E-11	8.936E-12	6.296E-12	4.721E-12	3.673E-12	3.004E-12	2.494E-12	
NW	47	7.798E-12	5.250E-12	3.699E-12	2.774E-12	2.158E-12	1.765E-12	1.465E-12	
NNW	68	1.128E-11	7.596E-12	5.352E-12	4.013E-12	3.122E-12	2.533E-12	2.120E-12	
AVERAGE	2085	2.171E-11	1.462E-11	1.030E-11	7.723E-12	6.007E-12	4.913E-12	4.079E-12	

Table B-4

## Deposition D/Q Factors for Reactor Building Vent

BECO 4th quarter 1991 x/q tables

Ground Release: AVERAGE DEPOSITION RATES (REGULATORY GUIDE 1.111 MODEL) - (1/M2)

SECTOR AVERAGE MODEL

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	133	1.095E-07	3.683E-08	1.244E-08	6.564E-09	4.061E-09	1.964E-09	1.198E-09	8.165E-10
NNE	201	1.855E-07	5.566E-08	1.880E-08	9.920E-09	6.137E-09	2.968E-09	1.811E-09	1.234E-09
NE	237	1.952E-07	6.563E-08	2.217E-08	1.170E-08	7.237E-09	3.499E-09	2.135E-09	1.455E-09
ENE	232	1.911E-07	6.425E-08	2.170E-08	1.145E-08	7.054E-09	3.426E-09	2.090E-09	1.424E-09
E	223	1.836E-07	6.176E-08	2.086E-08	1.101E-08	6.809E-09	3.293E-09	2.009E-09	1.369E-09
ESE	191	1.573E-07	5.289E-08	1.784E-08	9.426E-09	5.832E-09	2.820E-09	1.721E-09	1.173E-09
SE	178	1.466E-07	4.929E-08	1.665E-08	8.784E-09	5.435E-09	2.628E-09	1.604E-09	1.093E-09
SSE	68	5.600E-08	1.833E-08	6.560E-09	3.356E-09	2.076E-09	1.004E-09	6.126E-10	4.174E-10
S	58	5.234E-08	1.767E-08	5.424E-09	2.842E-09	1.771E-09	8.564E-10	5.225E-10	3.562E-10
SSW	228	2.065E-07	6.946E-08	2.132E-08	1.125E-08	6.962E-09	3.367E-09	2.054E-09	1.400E-09
SW	74	6.703E-08	2.254E-08	6.921E-09	3.652E-09	2.260E-09	1.093E-09	6.666E-10	4.543E-10
WSW	30	2.718E-08	9.159E-09	2.806E-09	1.481E-09	9.160E-10	4.430E-10	2.703E-10	1.842E-10
W	18	1.631E-08	5.483E-09	1.683E-09	9.771E-10	6.046E-10	2.924E-10	1.622E-10	1.105E-10
WNW	35	2.882E-08	9.693E-09	3.273E-09	1.727E-09	1.069E-09	5.168E-10	3.468E-10	2.363E-10
NW	61	5.023E-08	1.689E-08	5.705E-09	3.010E-09	1.863E-09	9.007E-10	5.495E-10	3.745E-10
NNW	87	7.164E-08	2.409E-08	8.137E-09	4.294E-09	2.656E-09	1.285E-09	7.837E-10	5.341E-10
AVERAGE	2054	1.078E-07	3.626E-08	1.201E-08	6.341E-09	3.923E-09	1.897E-09	1.158E-09	7.894E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	133	5.974E-10	4.570E-10	3.613E-10	2.904E-10	2.396E-10	1.201E-10	7.366E-11	3.644E-11
NNE	201	9.029E-10	6.906E-10	5.461E-10	4.388E-10	3.621E-10	1.815E-10	1.116E-10	5.908E-11
NE	237	1.065E-09	8.143E-10	6.439E-10	5.174E-10	4.269E-10	2.140E-10	1.316E-10	6.494E-11
ENE	232	1.042E-09	7.971E-10	6.303E-10	5.065E-10	4.179E-10	2.095E-10	1.288E-10	6.357E-11
E	223	1.002E-09	7.662E-10	6.058E-10	4.868E-10	4.017E-10	2.014E-10	1.238E-10	6.110E-11
ESE	191	8.579E-10	6.562E-10	5.189E-10	4.170E-10	3.440E-10	1.725E-10	1.061E-10	5.234E-11
SE	178	7.995E-10	6.116E-10	5.319E-10	4.275E-10	3.527E-10	1.608E-10	9.885E-11	4.877E-11
SSE	68	3.054E-10	2.336E-10	1.847E-10	1.485E-10	1.225E-10	6.141E-11	3.776E-11	1.863E-11
S	58	2.805E-10	1.993E-10	1.576E-10	1.266E-10	1.045E-10	5.238E-11	3.221E-11	1.589E-11
SSW	228	1.024E-09	7.834E-10	6.194E-10	4.978E-10	4.107E-10	2.059E-10	1.264E-10	6.247E-11
SW	74	3.324E-10	2.542E-10	2.010E-10	1.616E-10	1.333E-10	6.683E-11	4.110E-11	2.028E-11
WSW	30	1.348E-10	1.031E-10	8.965E-11	7.204E-11	5.944E-11	2.709E-11	1.666E-11	8.220E-12
W	18	8.085E-11	6.184E-11	4.890E-11	3.930E-11	3.242E-11	1.478E-11	9.996E-12	4.932E-12
WNW	35	1.729E-10	1.323E-10	9.508E-11	7.641E-11	6.304E-11	3.161E-11	1.945E-11	9.590E-12
NW	61	2.740E-10	2.096E-10	1.657E-10	1.332E-10	1.099E-10	5.309E-11	3.388E-11	1.671E-11
NNW	87	3.908E-10	2.989E-10	2.364E-10	1.899E-10	1.567E-10	7.857E-11	4.832E-11	2.364E-11
AVERAGE	2054	5.776E-10	4.418E-10	3.523E-10	2.831E-10	2.336E-10	1.159E-10	7.129E-11	3.518E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	133	2.240E-11	1.508E-11	1.063E-11	7.967E-12	6.198E-12	5.044E-12	4.209E-12	
NNE	201	3.385E-11	2.279E-11	1.606E-11	1.204E-11	9.367E-12	7.660E-12	6.361E-12	
NE	237	3.991E-11	2.687E-11	1.893E-11	1.420E-11	1.104E-11	9.032E-12	7.500E-12	
ENE	232	3.907E-11	2.631E-11	1.854E-11	1.390E-11	1.081E-11	8.842E-12	7.342E-12	
E	223	3.756E-11	2.529E-11	1.782E-11	1.336E-11	1.039E-11	8.499E-12	7.057E-12	
ESE	191	3.217E-11	2.166E-11	1.526E-11	1.144E-11	8.901E-12	7.279E-12	6.044E-12	
SE	178	3.098E-11	2.018E-11	1.422E-11	1.066E-11	8.295E-12	6.784E-12	5.633E-12	
SSE	68	1.145E-11	7.710E-12	5.411E-12	4.074E-12	3.169E-12	2.592E-12	2.152E-12	
S	58	1.768E-12	6.577E-12	4.634E-12	3.475E-12	2.703E-12	2.210E-12	1.835E-12	
SSW	228	3.840E-11	2.585E-11	1.822E-11	1.366E-11	1.062E-11	8.689E-12	7.215E-12	
SW	74	1.246E-11	8.391E-12	5.912E-12	4.433E-12	3.448E-12	2.820E-12	2.342E-12	
WSW	30	5.052E-12	3.402E-12	2.397E-12	1.797E-12	1.398E-12	1.143E-12	9.493E-13	
W	18	3.031E-12	2.041E-12	1.434E-12	1.078E-12	8.388E-13	6.860E-13	5.696E-13	
WNW	35	5.895E-12	3.969E-12	2.796E-12	2.097E-12	1.631E-12	1.334E-12	1.105E-12	
NW	61	1.027E-11	6.917E-12	4.873E-12	3.654E-12	2.843E-12	2.325E-12	1.930E-12	
NNW	87	1.465E-11	9.865E-12	6.951E-12	5.212E-12	4.054E-12	3.316E-12	2.753E-12	
AVERAGE	2054	2.162E-11	1.456E-11	1.026E-11	7.690E-12	5.981E-12	4.893E-12	4.062E-12	



Table B-4

## Deposition D/Q Factors for Reactor Building Vent

BECo yearly - x/q tables - 1991

SECTOR AVERAGE MODEL

Ground Release: AVERAGE DEPOSITION RATES (REGULATORY GUIDE 1.111 MODEL) - (1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	482	9.737E-08	3.275E-08	1.106E-08	5.835E-09	3.610E-09	1.746E-09	1.065E-09	7.258E-10
NNE	1222	2.469E-07	8.302E-08	2.804E-08	1.479E-08	9.153E-09	4.426E-09	2.700E-09	1.840E-09
NE	1185	2.394E-07	8.050E-08	2.719E-08	1.435E-08	8.876E-09	4.292E-09	2.619E-09	1.785E-09
ENE	748	1.511E-07	5.082E-08	1.716E-08	9.056E-09	5.603E-09	2.709E-09	1.653E-09	1.126E-09
E	680	1.374E-07	4.620E-08	1.560E-08	8.232E-09	5.093E-09	2.463E-09	1.503E-09	1.024E-09
ESE	566	1.143E-07	3.845E-08	1.299E-08	6.852E-09	4.240E-09	2.050E-09	1.251E-09	8.523E-10
SE	546	1.103E-07	3.709E-08	1.378E-08	7.271E-09	4.499E-09	2.175E-09	1.327E-09	8.222E-10
SSE	342	7.800E-08	2.556E-08	8.631E-09	4.140E-09	2.562E-09	1.239E-09	7.558E-10	5.150E-10
S	310	7.515E-08	2.527E-08	7.112E-09	3.753E-09	2.322E-09	1.123E-09	6.851E-10	4.668E-10
SSW	570	1.267E-07	4.260E-08	1.308E-08	6.901E-09	4.270E-09	2.065E-09	1.260E-09	8.584E-10
SW	447	9.933E-08	3.340E-08	1.026E-08	5.412E-09	3.348E-09	1.619E-09	9.878E-10	6.731E-10
WSW	376	8.355E-08	2.810E-08	8.626E-09	4.552E-09	2.816E-09	1.367E-09	8.309E-10	5.662E-10
W	221	4.911E-08	1.652E-08	5.075E-09	2.943E-09	1.821E-09	8.856E-10	5.372E-10	3.328E-10
WNW	198	4.007E-08	1.345E-08	4.543E-09	2.397E-09	1.483E-09	7.172E-10	4.376E-10	2.808E-10
NW	226	4.566E-08	1.535E-08	5.185E-09	2.736E-09	1.693E-09	8.186E-10	4.994E-10	3.403E-10
NNW	254	4.131E-08	1.726E-08	5.827E-09	3.075E-09	1.903E-09	9.200E-10	5.613E-10	3.829E-10
AVERAGE	8373	1.790E-07	5.665E-08	1.213E-08	6.393E-09	3.956E-09	1.913E-09	1.167E-09	7.899E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	482	5.311E-10	4.062E-10	3.212E-10	2.581E-10	2.130E-10	1.068E-10	6.566E-11	3.240E-11
NNE	1222	1.347E-09	1.030E-09	8.144E-10	6.544E-10	5.400E-10	2.707E-10	1.665E-10	8.214E-11
NE	1185	1.306E-09	9.988E-10	7.897E-10	6.346E-10	5.236E-10	2.625E-10	1.614E-10	7.965E-11
ENE	748	8.242E-10	6.304E-10	4.985E-10	4.006E-10	3.305E-10	1.657E-10	1.019E-10	5.028E-11
E	680	7.493E-10	5.731E-10	4.532E-10	3.642E-10	3.005E-10	1.507E-10	9.264E-11	4.571E-11
ESE	566	6.237E-10	4.770E-10	3.772E-10	3.031E-10	2.501E-10	1.254E-10	7.711E-11	3.804E-11
SE	546	6.016E-10	4.602E-10	3.639E-10	2.924E-10	2.454E-10	1.331E-10	8.182E-11	4.037E-11
SSE	342	3.769E-10	2.882E-10	2.279E-10	1.832E-10	1.511E-10	7.577E-11	4.659E-11	2.299E-11
S	310	3.416E-10	2.613E-10	2.066E-10	1.660E-10	1.370E-10	6.868E-11	4.223E-11	2.084E-11
SSW	570	6.281E-10	4.804E-10	3.799E-10	3.053E-10	2.519E-10	1.263E-10	7.765E-11	3.831E-11
SW	447	4.926E-10	3.767E-10	2.979E-10	2.394E-10	1.975E-10	9.903E-11	6.090E-11	3.005E-11
WSW	376	4.143E-10	3.169E-10	2.506E-10	2.014E-10	1.628E-10	8.330E-11	5.122E-11	2.527E-11
W	221	2.425E-10	1.863E-10	1.473E-10	1.184E-10	9.765E-11	4.896E-11	3.011E-11	1.485E-11
WNW	198	2.400E-10	1.836E-10	1.452E-10	1.166E-10	8.749E-11	4.387E-11	2.697E-11	1.331E-11
NW	226	2.490E-10	1.905E-10	1.506E-10	1.210E-10	9.986E-11	5.007E-11	3.079E-11	1.519E-11
NNW	254	2.799E-10	2.141E-10	1.693E-10	1.360E-10	1.122E-10	5.627E-11	3.480E-11	1.707E-11
AVERAGE	8373	5.780E-10	4.421E-10	3.496E-10	2.809E-10	2.338E-10	1.167E-10	7.176E-11	3.540E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	482	1.991E-11	1.341E-11	9.447E-12	7.083E-12	5.510E-12	4.506E-12	3.742E-12	
NNE	1222	5.049E-11	3.399E-11	2.395E-11	1.796E-11	1.397E-11	1.142E-11	9.486E-12	
NE	1185	4.896E-11	3.296E-11	2.322E-11	1.741E-11	1.353E-11	1.108E-11	9.199E-12	
ENE	748	3.090E-11	2.081E-11	1.466E-11	1.099E-11	8.551E-12	6.993E-12	5.807E-12	
E	680	2.809E-11	1.891E-11	1.333E-11	9.993E-12	7.773E-12	6.357E-12	5.279E-12	
ESE	566	2.338E-11	1.574E-11	1.109E-11	8.318E-12	6.470E-12	5.292E-12	4.394E-12	
SE	546	2.481E-11	1.671E-11	1.177E-11	8.826E-12	6.866E-12	5.615E-12	4.662E-12	
SSE	342	1.413E-11	9.513E-12	6.703E-12	5.026E-12	3.910E-12	3.197E-12	2.655E-12	
S	310	1.281E-11	8.623E-12	6.076E-12	4.596E-12	3.544E-12	2.898E-12	2.406E-12	
SSW	570	2.355E-11	1.585E-11	1.117E-11	8.377E-12	6.516E-12	5.329E-12	4.425E-12	
SW	447	1.847E-11	1.243E-11	8.761E-12	6.549E-12	5.110E-12	4.179E-12	3.470E-12	
WSW	376	1.553E-11	1.046E-11	7.369E-12	5.526E-12	4.298E-12	3.515E-12	2.919E-12	
W	221	9.130E-12	6.147E-12	4.331E-12	3.248E-12	2.526E-12	2.066E-12	1.716E-12	
WNW	198	8.180E-12	5.507E-12	3.881E-12	2.910E-12	2.263E-12	1.851E-12	1.537E-12	
NW	226	9.337E-12	6.286E-12	4.429E-12	3.321E-12	2.584E-12	2.113E-12	1.754E-12	
NNW	254	1.049E-11	7.065E-12	4.978E-12	3.733E-12	2.904E-12	2.375E-12	1.972E-12	
AVERAGE	8373	2.176E-11	1.465E-11	1.032E-11	7.741E-12	6.021E-12	4.924E-12	4.089E-12	

Table B-5

## Undepleted X/Q Factors for Main Stack

BECQ 1st quarter 1991 X/Q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CHL/Q BEFORE DEPLETION (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	88	5.163E-11	2.866E-09	6.005E-09	5.182E-09	5.414E-09	7.766E-09	9.306E-09	9.730E-09
NNE	177	1.306E-10	3.811E-09	3.186E-09	4.187E-09	7.589E-09	1.518E-08	1.882E-08	1.963E-08
NE	243	1.144E-10	4.970E-09	1.391E-08	1.538E-08	1.716E-08	2.257E-08	2.489E-08	2.474E-08
ENE	173	1.429E-10	6.470E-09	1.246E-08	1.171E-08	1.181E-08	1.420E-08	1.534E-08	1.517E-08
E	230	4.491E-10	1.614E-08	2.470E-08	2.625E-08	2.407E-08	2.619E-08	2.652E-08	2.526E-08
ESE	243	1.627E-09	5.092E-08	4.293E-08	3.404E-08	3.142E-08	3.205E-08	3.143E-08	2.919E-08
SE	217	2.401E-09	6.852E-08	4.222E-08	3.201E-08	3.244E-08	3.977E-08	3.112E-08	2.943E-08
SSE	131	2.053E-09	5.447E-08	4.032E-08	3.989E-08	6.654E-08	5.524E-08	4.485E-08	3.679E-08
S	75	1.373E-09	2.827E-08	4.864E-08	1.034E-07	9.017E-08	8.989E-08	7.213E-08	5.403E-08
SSW	92	1.486E-09	3.200E-08	6.180E-08	8.437E-08	1.680E-07	1.748E-07	1.117E-07	7.960E-08
SW	77	9.937E-10	1.664E-08	4.791E-08	6.259E-08	5.703E-08	4.827E-08	3.700E-08	2.918E-08
WSW	86	2.614E-09	2.358E-08	3.536E-08	5.031E-08	7.809E-08	7.838E-08	6.024E-08	4.740E-08
W	62	2.912E-09	3.639E-08	2.970E-08	2.817E-08	3.009E-08	2.786E-08	2.177E-08	1.842E-08
WNW	60	1.573E-10	2.188E-09	1.209E-08	1.632E-08	2.007E-08	2.171E-08	1.832E-08	1.655E-08
NW	62	1.117E-10	2.484E-09	5.043E-09	5.627E-09	6.254E-09	7.679E-09	8.082E-09	7.890E-09
NNW	80	9.446E-14	3.580E-10	2.291E-09	2.924E-09	3.799E-09	6.379E-09	6.121E-09	6.866E-09
AVERAGE	2096	1.040E-09	2.188E-08	2.679E-08	3.377E-08	4.068E-08	4.174E-08	3.373E-08	2.825E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	88	9.481E-09	9.068E-09	8.608E-09	8.151E-09	7.693E-09	5.758E-09	4.507E-09	3.095E-09
NNE	177	1.896E-08	1.794E-08	1.683E-08	1.578E-08	1.476E-08	1.069E-08	8.176E-09	5.429E-09
NE	243	2.336E-08	2.180E-08	2.027E-08	1.890E-08	1.760E-08	1.269E-08	9.737E-09	6.331E-09
ENE	173	1.434E-08	1.343E-08	1.255E-08	1.176E-08	1.101E-08	8.119E-09	6.350E-09	4.389E-09
E	230	2.327E-08	2.134E-08	1.960E-08	1.809E-08	1.671E-08	1.178E-08	8.947E-09	5.926E-09
ESE	243	2.643E-08	2.389E-08	2.168E-08	1.979E-08	1.811E-08	1.240E-08	9.252E-09	5.998E-09
SE	217	2.691E-08	2.450E-08	2.235E-08	2.051E-08	1.883E-08	1.298E-08	9.666E-09	6.201E-09
SSE	131	3.074E-08	2.623E-08	2.277E-08	2.002E-08	1.780E-08	1.132E-08	8.148E-09	5.764E-09
S	75	4.185E-08	3.345E-08	2.769E-08	2.341E-08	2.017E-08	1.161E-08	7.889E-09	4.579E-09
SSW	92	6.088E-08	4.867E-08	4.018E-08	3.395E-08	2.925E-08	1.687E-08	1.149E-08	6.703E-09
SW	77	2.371E-08	1.976E-08	1.681E-08	1.432E-08	1.272E-08	7.647E-09	5.325E-09	3.189E-09
WSW	86	3.837E-08	3.188E-08	2.705E-08	2.330E-08	2.036E-08	1.212E-08	8.336E-09	4.882E-09
W	62	1.601E-08	1.395E-08	1.231E-08	1.097E-08	9.850E-09	6.009E-09	4.254E-09	3.721E-09
WNW	60	1.480E-08	1.331E-08	1.204E-08	1.096E-08	1.002E-08	6.934E-09	5.934E-09	3.818E-09
NW	62	7.414E-09	6.919E-09	6.448E-09	6.023E-09	5.625E-09	4.294E-09	4.879E-09	2.565E-09
NNW	80	8.907E-09	8.749E-09	8.491E-09	8.216E-09	7.889E-09	6.222E-09	5.630E-09	5.539E-09
AVERAGE	2096	2.679E-08	2.093E-08	1.848E-08	1.652E-08	1.490E-08	1.015E-08	7.620E-09	5.147E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	88	2.341E-09	1.872E-09	1.553E-09	1.327E-09	1.153E-09	1.588E-09	1.398E-09	
NNE	177	4.019E-09	3.166E-09	2.600E-09	2.203E-09	1.901E-09	1.674E-09	1.492E-09	
NE	243	4.882E-09	3.876E-09	3.200E-09	2.725E-09	2.362E-09	2.089E-09	1.869E-09	
ENE	173	3.346E-09	2.832E-09	2.766E-09	2.356E-09	2.042E-09	1.805E-09	1.614E-09	
E	230	4.394E-09	3.469E-09	3.596E-09	3.021E-09	2.588E-09	2.264E-09	2.007E-09	
ESE	243	4.396E-09	3.907E-09	3.188E-09	2.689E-09	2.313E-09	2.032E-09	1.808E-09	
SE	217	4.499E-09	4.268E-09	3.434E-09	2.841E-09	2.433E-09	2.117E-09	1.867E-09	
SSE	131	4.088E-09	3.137E-09	2.535E-09	2.120E-09	1.808E-09	1.575E-09	1.391E-09	
S	75	3.134E-09	2.348E-09	1.866E-09	1.541E-09	1.299E-09	1.120E-09	9.795E-10	
SSW	92	4.598E-09	3.452E-09	2.753E-09	2.274E-09	1.918E-09	1.653E-09	1.448E-09	
SW	77	2.222E-09	1.684E-09	1.349E-09	1.120E-09	9.721E-10	8.422E-10	7.397E-10	
WSW	86	3.356E-09	2.544E-09	2.130E-09	1.766E-09	1.484E-09	1.296E-09	1.132E-09	
W	62	2.585E-09	1.958E-09	1.565E-09	1.298E-09	1.175E-09	1.012E-09	8.850E-10	
WNW	60	2.779E-09	2.421E-09	2.342E-09	2.078E-09	1.750E-09	1.508E-09	1.316E-09	
NW	62	2.549E-09	2.060E-09	1.699E-09	1.671E-09	1.409E-09	1.215E-09	1.063E-09	
NNW	80	3.972E-09	4.530E-09	3.635E-09	3.019E-09	2.559E-09	2.216E-09	1.946E-09	
AVERAGE	2096	3.698E-09	2.970E-09	2.515E-09	2.129E-09	1.823E-09	1.625E-09	1.435E-09	



Table B-5

## Undepleted X/Q Factors for Main Stack

Deco 2nd quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CHL/Q BEFORE DEPLETION - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	87	2.348E-10	7.609E-09	6.873E-09	7.301E-09	6.555E-09	1.142E-08	1.255E-08	1.247E-08
NNE	353	1.811E-09	5.881E-08	4.519E-08	5.591E-08	3.156E-08	3.492E-08	3.721E-08	3.665E-08
NE	288	2.660E-09	8.206E-08	3.825E-08	2.085E-08	1.807E-08	1.909E-08	2.025E-08	2.014E-08
ENE	128	8.626E-10	2.943E-08	1.752E-08	1.146E-08	9.482E-09	8.560E-09	8.790E-09	8.913E-09
E	141	6.225E-10	2.980E-08	1.663E-08	1.209E-08	1.047E-08	1.070E-08	1.135E-08	1.137E-08
ESE	119	1.295E-09	4.594E-08	2.791E-08	1.879E-08	1.586E-08	1.461E-08	1.424E-08	1.351E-08
SE	92	1.709E-09	5.685E-08	3.762E-08	2.172E-08	1.528E-08	1.460E-08	1.071E-08	1.071E-08
SSE	125	4.254E-09	1.649E-07	9.255E-08	5.514E-08	6.858E-08	6.804E-08	6.148E-08	5.374E-08
S	122	6.101E-09	1.276E-07	7.736E-08	1.420E-07	1.303E-07	1.449E-07	1.311E-07	1.044E-07
SSW	152	1.164E-08	1.936E-07	1.011E-07	1.374E-07	2.638E-07	2.400E-07	1.540E-07	1.103E-07
SW	138	1.780E-08	1.359E-07	9.452E-08	1.269E-07	1.279E-07	1.201E-07	9.789E-08	8.070E-08
WSW	90	1.055E-08	8.950E-08	7.110E-08	6.407E-08	9.108E-08	9.270E-08	7.248E-08	5.763E-08
W	98	4.211E-09	4.934E-08	5.548E-08	6.018E-08	7.154E-08	7.205E-08	5.816E-08	4.978E-08
WNW	85	2.095E-09	2.923E-08	3.989E-08	4.234E-08	4.910E-08	4.910E-08	4.463E-08	4.116E-08
NW	80	9.639E-10	1.941E-08	1.935E-08	1.421E-08	1.252E-08	1.344E-08	1.423E-08	1.396E-08
NNW	41	5.268E-11	2.144E-09	1.491E-09	1.884E-09	2.875E-09	5.031E-09	6.063E-09	6.278E-09
AVERAGE	2139	4.192E-09	7.030E-08	4.655E-08	4.766E-08	5.752E-08	5.751E-08	4.719E-08	3.948E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	87	1.177E-08	1.099E-08	1.022E-08	9.532E-09	8.880E-09	6.407E-09	4.919E-09	3.299E-09
NNE	353	3.444E-08	3.211E-08	2.984E-08	2.782E-08	2.588E-08	1.856E-08	1.418E-08	9.454E-09
NE	288	1.924E-08	1.822E-08	1.720E-08	1.626E-08	1.531E-08	1.146E-08	9.046E-09	6.326E-09
ENE	128	8.740E-09	8.517E-09	8.255E-09	8.001E-09	7.691E-09	6.133E-09	5.008E-09	3.637E-09
E	141	1.094E-08	1.045E-08	9.948E-09	9.483E-09	8.998E-09	6.920E-09	5.553E-09	3.980E-09
ESE	119	1.257E-08	1.166E-08	1.082E-08	1.008E-08	9.376E-09	6.775E-09	5.247E-09	3.577E-09
SE	92	1.037E-08	9.995E-09	9.596E-09	9.215E-09	8.798E-09	6.884E-09	5.567E-09	4.000E-09
SSE	125	4.672E-08	4.096E-08	3.624E-08	3.232E-08	2.904E-08	1.883E-08	1.370E-08	9.536E-09
S	122	8.243E-08	6.736E-08	5.652E-08	4.832E-08	4.201E-08	2.480E-08	1.719E-08	1.032E-08
SSW	152	8.497E-08	6.823E-08	5.649E-08	4.777E-08	4.114E-08	2.368E-08	1.616E-08	9.480E-09
SW	138	6.774E-08	5.796E-08	5.038E-08	4.432E-08	3.940E-08	2.488E-08	1.781E-08	1.102E-08
WSW	90	4.695E-08	3.917E-08	3.334E-08	2.891E-08	2.522E-08	1.511E-08	1.044E-08	6.143E-09
W	98	4.254E-08	3.684E-08	3.227E-08	2.853E-08	2.550E-08	2.133E-08	1.462E-08	8.545E-09
WNW	85	3.696E-08	3.365E-08	2.753E-08	2.501E-08	2.280E-08	1.645E-08	1.236E-08	7.754E-09
NW	80	1.311E-08	1.273E-08	1.140E-08	1.066E-08	9.956E-09	1.083E-08	8.206E-09	6.716E-09
NNW	41	6.048E-09	5.703E-09	5.332E-09	4.984E-09	4.645E-09	3.325E-09	2.720E-09	3.540E-09
AVERAGE	2139	3.347E-08	2.898E-08	2.534E-08	2.257E-08	2.029E-08	1.390E-08	1.017E-08	6.708E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	87	2.464E-09	1.955E-09	1.613E-09	1.373E-09	1.190E-09	1.541E-09	1.356E-09	
NNE	353	7.026E-09	5.556E-09	4.576E-09	3.868E-09	3.364E-09	2.969E-09	2.653E-09	
NE	288	4.854E-09	3.925E-09	3.281E-09	2.823E-09	2.469E-09	2.199E-09	1.980E-09	
ENE	128	2.846E-09	2.454E-09	2.450E-09	2.101E-09	1.831E-09	1.625E-09	1.458E-09	
E	141	3.100E-09	2.531E-09	3.098E-09	2.643E-09	2.294E-09	2.029E-09	1.815E-09	
ESE	119	2.701E-09	2.526E-09	2.081E-09	1.767E-09	1.529E-09	1.348E-09	1.203E-09	
SE	92	3.104E-09	3.628E-09	2.967E-09	2.503E-09	2.150E-09	1.883E-09	1.670E-09	
SSE	125	6.748E-09	5.167E-09	4.171E-09	3.482E-09	2.964E-09	2.577E-09	2.271E-09	
S	122	7.201E-09	5.675E-09	4.406E-09	3.672E-09	3.123E-09	2.715E-09	2.393E-09	
SSW	152	6.535E-09	4.925E-09	3.935E-09	3.259E-09	2.757E-09	2.387E-09	2.096E-09	
SW	138	7.835E-09	6.019E-09	4.866E-09	4.069E-09	3.646E-09	3.170E-09	2.793E-09	
WSW	90	4.240E-09	3.218E-09	2.495E-09	2.218E-09	1.867E-09	1.629E-09	1.425E-09	
W	98	5.874E-09	4.411E-09	3.511E-09	2.899E-09	2.575E-09	2.217E-09	1.936E-09	
WNW	85	5.544E-09	4.556E-09	4.060E-09	3.512E-09	2.958E-09	2.553E-09	2.234E-09	
NW	80	4.946E-09	4.179E-09	3.538E-09	4.291E-09	3.635E-09	3.146E-09	2.733E-09	
NNW	41	2.467E-09	1.872E-09	1.503E-09	1.249E-09	1.060E-09	9.202E-10	8.101E-10	
AVERAGE	2139	4.843E-09	3.900E-09	3.247E-09	2.859E-09	2.463E-09	2.182E-09	1.928E-09	

**Table B-5**  
**Undepleted X/Q Factors for Main Stack**

BECS 3rd quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CHL/O BEFORE DEPLETION = (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	172	8.632E-10	3.071E-08	2.342E-08	1.709E-08	1.852E-08	1.931E-08	2.058E-08	2.016E-08
NNE	410	1.215E-09	3.990E-08	2.457E-08	1.707E-08	1.884E-08	2.825E-08	3.385E-08	3.512E-08
NE	198	1.068E-09	3.742E-08	2.909E-08	2.203E-08	1.753E-08	1.567E-08	1.610E-08	1.587E-08
ENE	165	1.194E-09	4.065E-08	2.352E-08	1.397E-08	1.176E-08	1.231E-08	1.340E-08	1.359E-08
E	136	6.570E-10	2.416E-08	2.371E-08	1.656E-08	1.266E-08	1.098E-08	1.100E-08	1.076E-08
ESE	127	1.098E-09	3.964E-08	2.236E-08	1.527E-08	1.432E-08	1.626E-08	1.750E-08	1.740E-08
SE	124	1.138E-09	5.743E-08	4.712E-08	2.639E-08	1.622E-08	1.652E-08	1.200E-08	1.219E-08
SSE	124	7.305E-09	2.303E-07	1.056E-07	4.542E-08	5.442E-08	5.640E-08	5.401E-08	4.940E-08
S	120	8.805E-09	1.922E-07	7.687E-08	1.070E-07	1.015E-07	1.344E-07	1.346E-07	1.125E-07
SSW	62	4.346E-09	8.794E-08	5.299E-08	7.129E-08	1.434E-07	1.788E-07	1.192E-07	8.732E-08
SW	71	1.071E-08	8.614E-08	5.580E-08	6.990E-08	7.191E-08	6.977E-08	5.721E-08	1.213E-08
WSW	65	1.293E-08	1.120E-07	4.797E-08	3.992E-08	6.460E-08	7.506E-08	6.163E-08	5.050E-08
W	81	5.031E-09	4.470E-08	4.348E-08	3.885E-08	4.971E-08	4.931E-08	4.059E-08	3.527E-08
WNW	103	7.994E-10	1.515E-08	3.325E-08	3.379E-08	4.447E-08	5.356E-08	4.898E-08	4.525E-08
NW	97	2.318E-10	4.583E-09	2.984E-09	3.526E-09	6.525E-09	1.293E-08	1.586E-08	1.642E-08
NNW	68	7.277E-14	4.316E-10	1.544E-09	1.266E-09	1.727E-09	3.876E-09	5.454E-09	6.129E-09
AVERAGE	2123	3.590E-09	6.643E-08	3.844E-08	3.359E-08	4.014E-08	4.709E-08	4.137E-08	3.594E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	172	1.889E-08	1.752E-08	1.621E-08	1.505E-08	1.396E-08	9.937E-09	7.565E-09	5.016E-09
NNE	410	3.396E-08	2.225E-08	3.038E-08	2.862E-08	2.685E-08	1.965E-08	1.515E-08	1.019E-08
NE	198	1.510E-08	1.429E-08	1.349E-08	1.277E-08	1.204E-08	9.064E-09	7.183E-09	5.032E-09
ENE	165	1.314E-08	1.256E-08	1.194E-08	1.136E-08	1.074E-08	8.149E-09	6.467E-09	4.543E-09
E	136	1.022E-08	9.691E-09	9.179E-09	8.718E-09	8.249E-09	6.296E-09	5.040E-09	3.595E-09
ESE	127	1.653E-08	1.553E-08	1.454E-08	1.364E-08	1.275E-08	9.303E-09	7.206E-09	4.897E-09
SE	124	1.184E-08	1.139E-08	1.090E-08	1.042E-08	9.919E-09	7.697E-09	6.224E-09	4.496E-09
SSE	124	4.439E-08	3.996E-08	3.613E-08	3.281E-08	2.993E-08	2.040E-08	1.527E-08	1.150E-08
S	120	9.084E-08	7.562E-08	6.444E-08	5.587E-08	4.914E-08	3.017E-08	2.134E-08	1.309E-08
SSW	62	6.785E-08	5.482E-08	4.562E-08	3.880E-08	3.358E-08	1.953E-08	1.342E-08	7.989E-09
SW	71	3.949E-08	3.373E-08	2.928E-08	2.722E-08	2.284E-08	1.438E-08	1.029E-08	6.352E-09
WSW	65	4.203E-08	3.564E-08	3.072E-08	2.681E-08	2.366E-08	1.453E-08	1.021E-08	6.158E-09
W	81	3.046E-08	2.660E-08	2.347E-08	2.091E-08	1.877E-08	1.773E-08	1.243E-08	7.509E-09
WNW	103	4.067E-08	3.661E-08	3.033E-08	2.757E-08	2.515E-08	1.6. E-08	1.390E-08	8.789E-09
NW	97	1.580E-08	1.493E-08	1.401E-08	1.314E-08	1.229E-08	1.292E-08	9.493E-09	6.973E-09
NNW	68	6.205E-09	6.104E-09	5.914E-09	5.703E-09	5.455E-09	4.233E-09	3.701E-09	6.137E-09
AVERAGE	2123	3.109E-08	2.733E-08	2.416E-08	2.174E-08	1.971E-08	1.390E-08	1.031E-08	7.018E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	172	3.723E-09	2.942E-09	2.422E-09	2.058E-09	1.781E-09	2.496E-09	2.204E-09	
NNE	410	7.610E-09	6.033E-09	4.977E-09	4.233E-09	3.666E-09	3.239E-09	2.895E-09	
NE	198	3.900E-09	3.169E-09	2.658E-09	2.294E-09	2.013E-09	1.799E-09	1.625E-09	
ENE	165	3.496E-09	2.976E-09	2.938E-09	2.513E-09	2.187E-09	1.939E-09	1.739E-09	
E	136	2.793E-09	2.277E-09	2.784E-09	2.376E-09	2.063E-09	1.825E-09	1.634E-09	
ESE	127	3.687E-09	3.481E-09	2.894E-09	2.432E-09	2.102E-09	1.854E-09	1.655E-09	
SE	124	3.517E-09	4.646E-09	3.830E-09	3.254E-09	2.813E-09	2.477E-09	2.208E-09	
SSE	124	8.281E-09	6.414E-09	5.217E-09	4.382E-09	3.750E-09	3.273E-09	2.895E-09	
S	120	9.265E-09	7.110E-09	5.761E-09	4.826E-09	4.123E-09	3.592E-09	3.174E-09	
SSW	62	5.548E-09	4.208E-09	3.582E-09	2.816E-09	2.394E-09	2.080E-09	1.833E-09	
SW	71	4.519E-09	3.473E-09	2.808E-09	2.349E-09	2.119E-09	1.845E-09	1.627E-09	
WSW	65	4.308E-09	3.312E-09	2.856E-09	2.359E-09	1.992E-09	1.749E-09	1.532E-09	
W	81	5.269E-09	4.015E-09	3.230E-09	2.692E-09	2.614E-09	2.264E-09	1.989E-09	
WNW	103	6.320E-09	5.333E-09	5.027E-09	4.482E-09	3.731E-09	3.266E-09	2.861E-09	
NW	97	4.958E-09	3.975E-09	3.266E-09	2.737E-09	2.349E-09	2.361E-09	2.065E-09	
NNW	68	4.305E-09	3.280E-09	2.640E-09	2.199E-09	1.869E-09	1.623E-09	1.427E-09	
AVERAGE	2123	5.094E-09	4.165E-09	3.541E-09	3.032E-09	2.625E-09	2.355E-09	2.085E-09	

**Table B-5**  
**Undepleted X/Q Factors for Main Stack**

BECU 4th Quarter 1991 X/Q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CH1/Q BEFORE DEPLETION \* (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	122	2.074E-10	8.896E-09	1.354E-08	1.163E-08	1.129E-08	1.328E-08	1.434E-08	1.416E-08
NNE	223	1.774E-10	8.143E-09	1.386E-08	1.072E-08	1.086E-08	1.620E-08	2.003E-08	2.123E-08
NE	192	5.463E-11	3.934E-09	1.113E-08	1.077E-08	1.056E-08	1.445E-08	1.716E-08	1.788E-08
ENE	165	2.110E-10	6.884E-09	7.344E-09	8.166E-09	9.783E-09	1.459E-08	1.742E-08	1.813E-08
E	216	9.422E-10	2.807E-08	1.533E-08	1.270E-08	1.557E-08	2.292E-08	2.613E-08	2.633E-08
ESE	223	8.489E-10	2.791E-08	2.414E-08	2.350E-08	2.398E-08	3.131E-08	3.184E-08	2.999E-08
SE	163	1.126E-09	4.716E-08	4.419E-08	3.344E-08	3.028E-08	3.466E-08	2.655E-08	2.470E-08
SSE	83	1.640E-09	4.688E-08	3.220E-08	1.364E-08	4.125E-08	3.850E-08	3.245E-08	2.853E-08
S	160	2.386E-09	4.613E-08	1.006E-07	1.453E-07	1.166E-07	1.090E-07	8.982E-08	6.778E-08
SSW	123	6.083E-10	1.483E-08	6.913E-08	9.60E-08	1.902E-07	1.756E-07	1.099E-07	7.788E-08
SW	28	5.666E-10	5.284E-09	1.049E-08	1.937E-08	2.092E-08	2.542E-08	2.489E-08	2.307E-08
WSW	20	1.370E-09	1.311E-08	1.145E-08	1.348E-08	2.035E-08	2.287E-08	1.898E-08	1.577E-08
W	17	3.603E-10	5.709E-09	1.324E-08	1.133E-08	1.151E-08	1.083E-08	8.760E-09	7.696E-09
WNW	52	1.309E-09	1.515E-08	1.296E-08	1.334E-08	1.805E-08	2.072E-08	1.800E-08	1.622E-08
NW	83	1.154E-10	1.805E-09	1.948E-09	2.643E-09	4.057E-09	7.761E-09	9.907E-09	1.059E-08
NNW	112	1.926E-13	7.593E-10	2.427E-09	1.884E-09	2.490E-09	5.859E-09	8.495E-09	9.709E-09
AVERAGE	1982	7.452E-10	1.794E-08	2.400E-08	2.797E-08	3.374E-08	3.513E-08	2.973E-08	2.560E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	122	1.335E-08	1.247E-08	1.162E-08	1.085E-08	1.013E-08	7.368E-09	5.499E-09	3.870E-09
NNE	223	2.080E-08	1.998E-08	1.902E-08	1.808E-08	1.710E-08	1.285E-08	1.008E-08	6.937E-09
NE	192	1.739E-08	1.644E-08	1.580E-08	1.499E-08	1.417E-08	1.066E-08	8.401E-09	5.837E-09
ENE	165	1.755E-08	1.670E-08	1.577E-08	1.488E-08	1.398E-08	1.026E-08	7.945E-09	5.352E-09
E	216	2.500E-08	2.338E-08	2.176E-08	2.027E-08	1.885E-08	1.347E-08	1.024E-08	6.755E-09
ESE	223	2.734E-08	2.482E-08	2.257E-08	2.065E-08	1.893E-08	1.304E-08	9.754E-09	6.332E-09
SE	163	2.234E-08	2.016E-08	1.825E-08	1.663E-08	1.519E-08	1.034E-08	7.688E-09	4.961E-09
SSE	83	2.441E-08	2.115E-08	1.854E-08	1.641E-08	1.465E-08	9.341E-09	6.723E-09	4.576E-09
S	160	5.203E-08	4.167E-08	3.445E-08	2.914E-08	2.512E-08	1.445E-08	9.848E-09	5.787E-09
SSW	123	5.923E-08	4.714E-08	3.878E-08	3.268E-08	2.809E-08	1.606E-08	1.087E-08	6.284E-09
SW	28	2.083E-08	1.877E-08	1.696E-08	1.538E-08	1.403E-08	9.525E-09	7.113E-09	4.627E-09
WSW	20	1.338E-08	1.161E-08	1.027E-08	9.195E-09	8.329E-09	5.786E-09	4.436E-09	2.989E-09
W	17	6.735E-09	5.951E-09	5.305E-09	4.766E-09	4.312E-09	4.231E-09	2.951E-09	1.769E-09
WNW	52	1.438E-08	1.283E-08	1.152E-08	1.042E-08	9.467E-09	6.233E-09	5.179E-09	3.273E-09
NW	83	1.042E-08	1.004E-08	9.373E-09	9.101E-09	8.603E-09	6.898E-09	7.168E-09	5.270E-09
NNW	112	9.948E-09	9.885E-09	9.659E-09	9.379E-09	9.023E-09	7.135E-09	6.512E-09	1.012E-08
AVERAGE	1982	2.220E-08	1.958E-08	1.749E-08	1.580E-08	1.437E-08	1.003E-08	7.538E-09	5.296E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	122	2.915E-09	2.326E-09	1.927E-09	1.646E-09	1.430E-09	1.283E-09	1.148E-09	
NNE	223	5.251E-09	4.200E-09	3.485E-09	2.978E-09	2.589E-09	2.294E-09	2.054E-09	
NE	192	4.432E-09	3.682E-09	2.983E-09	2.558E-09	2.231E-09	1.983E-09	1.781E-09	
ENE	165	3.995E-09	3.284E-09	3.033E-09	2.560E-09	2.301E-09	1.937E-09	1.717E-09	
E	216	4.986E-09	3.922E-09	4.001E-09	3.354E-09	2.867E-09	2.505E-09	2.217E-09	
ESE	223	4.643E-09	4.160E-09	3.385E-09	2.847E-09	2.441E-09	2.139E-09	1.898E-09	
SE	163	3.628E-09	3.800E-09	3.085E-09	2.590E-09	2.217E-09	1.940E-09	1.720E-09	
SSE	83	3.216E-09	2.452E-09	1.973E-09	1.643E-09	1.396E-09	1.212E-09	1.046E-09	
S	160	3.994E-09	3.015E-09	2.414E-09	2.004E-09	1.699E-09	1.472E-09	1.295E-09	
SSW	123	4.290E-09	3.209E-09	2.552E-09	2.104E-09	1.772E-09	1.521E-09	1.333E-09	
SW	28	3.376E-09	2.634E-09	2.152E-09	1.813E-09	1.606E-09	1.445E-09	1.274E-09	
WSW	20	2.267E-09	1.940E-09	2.609E-09	2.215E-09	1.903E-09	1.687E-09	1.755E-09	
W	17	1.233E-09	9.342E-10	7.489E-10	6.216E-10	5.460E-10	4.876E-10	4.262E-10	
WNW	52	2.354E-09	1.976E-09	1.823E-09	1.597E-09	1.346E-09	1.161E-09	1.016E-09	
NW	83	3.739E-09	2.971E-09	2.408E-09	2.267E-09	1.909E-09	1.645E-09	1.438E-09	
NNW	112	7.060E-09	5.355E-09	4.277E-09	3.769E-09	3.024E-09	2.618E-09	2.298E-09	
AVERAGE	1982	3.837E-09	3.110E-09	2.682E-09	2.273E-09	1.953E-09	1.771E-09	1.565E-09	

Table B-5

## Undepleted X/Q Factors for Main Stack

SECO 1991 X/Q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CHL/O BEYOND DEPLETION (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	469	3.473E-10	1.261E-08	1.243E-08	1.029E-08	1.064E-08	1.295E-08	1.420E-08	1.414E-08
NNE	1163	8.486E-10	2.813E-08	2.194E-08	1.664E-08	1.738E-08	2.381E-08	2.765E-08	2.832E-08
NE	921	1.001E-09	3.276E-08	2.306E-08	1.728E-08	1.592E-08	1.799E-08	1.962E-08	1.967E-08
ENE	631	6.111E-10	2.166E-08	1.536E-08	1.138E-08	1.072E-08	1.236E-08	1.366E-08	1.387E-08
E	723	7.150E-10	2.402E-08	2.066E-08	1.643E-08	1.571E-08	1.757E-08	1.859E-08	1.826E-08
ESE	712	1.222E-09	4.130E-08	2.938E-08	2.284E-08	2.178E-08	2.338E-08	2.357E-08	2.276E-08
SE	596	1.872E-09	6.553E-08	4.433E-08	2.956E-08	2.430E-08	2.730E-08	2.791E-08	1.911E-08
SSE	463	3.790E-09	1.212E-07	6.889E-08	4.875E-08	5.799E-08	5.484E-08	4.874E-08	4.238E-08
S	477	4.717E-09	9.943E-08	7.555E-08	1.242E-07	1.096E-07	1.199E-07	1.073E-07	8.509E-08
SSW	429	4.645E-09	8.495E-08	7.138E-08	9.742E-08	1.916E-07	1.922E-07	1.240E-07	8.904E-08
SW	314	7.707E-09	6.264E-08	5.430E-08	7.067E-08	7.042E-08	6.674E-08	5.487E-08	4.551E-08
WSW	261	6.652E-09	5.757E-08	4.302E-08	4.244E-08	6.426E-08	6.802E-08	5.393E-08	4.330E-08
W	258	3.178E-09	3.963E-08	3.672E-08	3.483E-08	4.028E-08	4.081E-08	3.608E-08	2.825E-08
WNW	320	1.091E-09	1.550E-08	2.532E-08	2.541E-08	3.253E-08	3.747E-08	3.641E-08	3.082E-08
NW	332	3.617E-10	7.197E-09	7.453E-09	6.584E-09	7.410E-09	1.051E-08	1.207E-08	1.226E-08
NNW	301	1.360E-11	9.301E-10	1.928E-09	1.988E-09	2.724E-09	5.272E-09	7.003E-09	7.706E-09
AVERAGE	8340	2.422E-09	4.469E-08	3.452E-08	3.604E-08	4.332E-08	4.570E-08	3.911E-08	3.251E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	469	1.338E-08	1.252E-08	1.167E-08	1.090E-08	1.017E-08	7.371E-09	5.674E-09	3.820E-09
NNE	1163	2.719E-08	2.570E-08	2.414E-08	2.268E-08	2.124E-08	1.550E-08	1.194E-08	8.052E-09
NE	921	1.878E-08	1.774E-08	1.670E-08	1.573E-08	1.478E-08	1.097E-08	8.592E-09	5.937E-09
ENE	631	1.536E-08	1.273E-08	1.206E-08	1.144E-08	1.080E-08	8.131E-09	6.414E-09	4.464E-09
E	723	1.720E-08	1.607E-08	1.498E-08	1.401E-08	1.309E-08	9.539E-09	7.390E-09	5.030E-09
ESE	712	2.057E-08	1.885E-08	1.729E-08	1.594E-08	1.470E-08	1.032E-08	7.823E-09	5.176E-09
SE	596	1.775E-08	1.641E-08	1.519E-08	1.412E-08	1.312E-08	9.444E-09	7.289E-09	4.908E-09
SSE	463	3.681E-08	3.230E-08	2.862E-08	2.557E-08	2.302E-08	1.509E-08	1.105E-08	7.908E-09
S	477	6.710E-08	5.484E-08	4.604E-08	3.943E-08	3.432E-08	2.039E-08	1.416E-08	8.705E-09
SSW	429	6.814E-08	5.489E-08	4.542E-08	3.847E-08	3.313E-08	1.910E-08	1.303E-08	7.643E-09
SW	314	3.833E-08	3.288E-08	2.863E-08	2.522E-08	2.248E-08	1.423E-08	1.021E-08	6.343E-09
WSW	261	3.556E-08	2.989E-08	2.561E-08	2.225E-08	1.959E-08	1.200E-08	8.424E-09	5.079E-09
W	258	2.429E-08	2.114E-08	1.860E-08	1.654E-08	1.482E-08	1.325E-08	9.185E-09	5.458E-09
WNW	300	2.774E-08	2.480E-08	2.241E-08	2.036E-08	1.847E-08	1.243E-08	8.431E-09	5.963E-09
NW	332	1.13E-08	1.106E-08	1.037E-08	9.757E-09	9.141E-09	6.052E-09	7.407E-09	5.646E-09
NNW	301	7.733E-09	7.364E-09	7.302E-09	7.024E-09	6.707E-09	5.189E-09	4.602E-09	7.027E-09
AVERAGE	8340	2.787E-08	2.434E-08	2.157E-08	1.934E-08	1.738E-08	1.206E-08	8.914E-09	6.059E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	469	2.861E-09	2.274E-09	1.879E-09	1.601E-09	1.388E-09	1.901E-09	1.675E-09	
NNE	1163	5.997E-09	4.751E-09	3.922E-09	3.336E-09	2.889E-09	2.552E-09	2.281E-09	
NE	921	4.523E-09	3.638E-09	3.031E-09	2.601E-09	2.270E-09	2.018E-09	1.818E-09	
ENE	631	3.411E-09	2.879E-09	2.792E-09	2.379E-09	2.063E-09	1.823E-09	1.630E-09	
E	723	3.795E-09	3.033E-09	3.358E-09	2.839E-09	2.445E-09	2.150E-09	1.913E-09	
ESE	712	3.840E-09	3.504E-09	2.868E-09	2.425E-09	2.089E-09	1.837E-09	1.635E-09	
SE	596	7.684E-09	4.084E-09	3.326E-09	2.874E-09	2.404E-09	2.107E-09	1.868E-09	
SSE	463	5.630E-09	4.329E-09	3.504E-09	2.932E-09	2.501E-09	2.178E-09	1.922E-09	
S	477	5.742E-09	4.521E-09	3.640E-09	3.034E-09	2.581E-09	2.242E-09	1.976E-09	
SSW	429	5.264E-09	3.964E-09	3.189E-09	2.624E-09	2.219E-09	1.920E-09	1.684E-09	
SW	314	4.520E-09	3.477E-09	2.813E-09	2.334E-09	2.113E-09	1.837E-09	1.619E-09	
WSW	261	3.566E-09	2.769E-09	2.583E-09	2.140E-09	1.811E-09	1.661E-09	1.457E-09	
W	258	3.790E-09	2.867E-09	2.294E-09	1.903E-09	1.755E-09	1.515E-09	1.326E-09	
WNW	300	4.288E-09	3.604E-09	3.343E-09	2.943E-09	2.481E-09	2.141E-09	1.878E-09	
NW	332	4.060E-09	3.308E-09	2.743E-09	2.886E-09	2.437E-09	2.104E-09	1.843E-09	
NNW	301	4.907E-09	3.726E-09	2.992E-09	2.487E-09	2.109E-09	1.828E-09	1.606E-09	
AVERAGE	8340	4.380E-09	3.546E-09	3.016E-09	2.580E-09	2.222E-09	1.988E-09	1.738E-09	



Table B-6

## Depleted X/Q Factors for Main Stack

BECQ 1st Quarter 1991 X/Q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CH1/Q AFTER DEPLETION (MET, AND ATOMIC ENERGY 1968 DEPLETION MODEL) - (SEC/MS)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	88	5.163E-11	2.864E-09	5.992E-09	5.163E-09	5.393E-09	7.731E-09	9.237E-09	9.612E-09
NNE	177	1.306E-10	3.809E-09	3.181E-09	4.180E-09	7.578E-09	1.513E-08	1.871E-08	1.963E-08
NE	243	1.144E-10	4.969E-09	1.389E-08	1.533E-08	1.709E-08	2.245E-08	2.468E-08	2.445E-08
ENE	173	1.429E-10	6.462E-09	1.244E-08	1.166E-08	1.175E-08	1.411E-08	1.521E-08	1.500E-08
E	230	4.491E-10	1.613E-08	2.465E-08	2.616E-08	2.396E-08	2.603E-08	2.630E-08	2.497E-08
ESE	243	1.627E-09	5.089E-08	4.282E-08	3.866E-08	3.120E-08	3.173E-08	3.102E-08	2.871E-08
SE	217	2.401E-09	6.848E-08	4.211E-08	3.189E-08	3.232E-08	3.958E-08	3.089E-08	2.906E-08
SSE	131	2.083E-09	5.443E-08	4.021E-08	5.979E-08	6.638E-08	5.493E-08	4.440E-08	3.623E-08
S	75	1.373E-09	2.824E-08	4.858E-08	1.033E-07	8.991E-08	8.906E-08	7.072E-08	5.232E-08
SSW	92	1.486E-09	3.196E-08	6.166E-08	8.418E-08	1.675E-07	1.730E-07	1.094E-07	7.701E-08
SW	77	9.937E-10	1.663E-08	4.781E-08	6.244E-08	5.684E-08	4.793E-08	3.649E-08	2.854E-08
WSW	86	2.614E-09	2.355E-08	3.530E-08	5.025E-08	7.791E-08	7.767E-08	5.904E-08	4.581E-08
W	62	2.912E-09	3.635E-08	2.962E-08	2.810E-08	3.000E-08	2.769E-08	2.133E-08	1.831E-08
WNW	60	1.573E-10	2.187E-09	1.208E-08	1.628E-08	2.090E-08	2.155E-08	1.808E-08	1.623E-08
NW	62	1.117E-10	2.483E-09	5.034E-09	5.604E-09	6.220E-09	7.819E-09	7.986E-09	7.755E-09
NNW	80	1.446E-14	3.580E-10	2.288E-09	2.915E-09	3.785E-09	6.349E-09	8.053E-09	8.724E-09
AVERAGE	2096	1.040E-09	2.186E-08	2.673E-08	3.369E-08	4.055E-08	4.141E-08	3.324E-08	2.763E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	88	9.311E-09	8.846E-09	8.329E-09	7.833E-09	7.333E-09	5.255E-09	3.938E-09	2.489E-09
NNE	177	1.868E-08	1.759E-08	1.642E-08	1.532E-08	1.424E-08	1.003E-08	7.463E-09	4.694E-09
NE	243	2.298E-08	2.135E-08	1.974E-08	1.832E-08	1.698E-08	1.192E-08	8.908E-09	5.680E-09
ENE	173	1.412E-08	1.318E-08	1.227E-08	1.145E-08	1.068E-08	7.699E-09	5.863E-09	3.869E-09
E	230	2.892E-08	2.693E-08	1.913E-08	1.757E-08	1.615E-08	1.109E-08	8.189E-09	5.140E-09
ESE	243	2.588E-08	2.330E-08	2.105E-08	1.913E-08	1.742E-08	1.163E-08	8.457E-09	5.214E-09
SE	217	2.639E-08	2.361E-08	2.148E-08	1.966E-08	1.762E-08	1.19E-08	7.882E-09	4.605E-09
SSE	131	3.010E-08	2.554E-08	2.204E-08	1.924E-08	1.702E-08	1.050E-08	7.329E-09	4.763E-09
S	75	3.983E-08	3.135E-08	2.576E-08	2.147E-08	1.823E-08	9.737E-09	6.155E-09	3.128E-09
SSW	92	5.805E-08	4.567E-08	3.708E-08	3.080E-08	2.607E-08	1.374E-08	8.568E-09	4.279E-09
SW	77	2.296E-08	1.893E-08	1.553E-08	1.360E-08	1.178E-08	6.681E-09	4.403E-09	2.388E-09
WSW	86	3.649E-08	2.980E-08	2.484E-08	2.102E-08	1.803E-08	9.847E-09	6.266E-09	3.215E-09
W	32	1.564E-08	1.354E-08	1.185E-08	1.048E-08	9.333E-09	7.591E-09	4.840E-09	2.450E-09
WNW	60	1.443E-08	1.289E-08	1.159E-08	1.048E-08	9.525E-09	6.357E-09	5.230E-09	3.105E-09
NW	62	7.241E-09	6.713E-09	6.213E-09	5.764E-09	5.345E-09	5.734E-09	4.110E-09	2.886E-09
NNW	80	8.662E-09	8.379E-09	7.984E-09	7.568E-09	7.103E-09	5.002E-09	4.108E-09	4.900E-09
AVERAGE	2096	2.335E-08	2.013E-08	1.761E-08	1.559E-08	1.393E-08	9.006E-09	6.359E-09	3.925E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	88	1.742E-09	1.294E-09	1.001E-09	8.008E-10	6.535E-10	6.997E-10	5.754E-10	
NNE	177	3.294E-09	2.461E-09	1.918E-09	1.544E-09	1.265E-09	1.059E-09	8.985E-10	
NE	243	4.041E-09	3.055E-09	2.402E-09	1.951E-09	1.613E-09	1.362E-09	1.164E-09	
ENE	173	2.800E-09	2.229E-09	2.002E-09	1.618E-09	1.332E-09	1.121E-09	9.555E-10	
E	230	3.616E-09	2.714E-09	2.521E-09	2.001E-09	1.620E-09	1.344E-09	1.131E-09	
ESE	243	3.639E-09	3.010E-09	2.333E-09	1.872E-09	1.531E-09	1.282E-09	1.088E-09	
SE	217	3.125E-09	2.641E-09	2.003E-09	1.576E-09	1.270E-09	1.049E-09	8.795E-10	
SSE	131	3.122E-09	2.206E-09	1.642E-09	1.267E-09	9.981E-10	8.060E-10	6.618E-10	
S	75	1.907E-09	1.290E-09	9.364E-10	7.116E-10	5.552E-10	4.465E-10	3.659E-10	
SSW	92	2.569E-09	1.720E-09	1.241E-09	9.391E-10	7.307E-10	5.861E-10	4.797E-10	
SW	77	1.527E-09	1.072E-09	8.016E-10	6.253E-10	4.994E-10	4.098E-10	3.423E-10	
WSW	86	1.986E-09	1.366E-09	9.992E-10	7.622E-10	5.971E-10	4.611E-10	3.767E-10	
W	62	1.482E-09	9.982E-10	7.238E-10	5.513E-10	3.940E-10	2.922E-10	2.421E-10	
WNW	60	2.079E-09	1.398E-09	1.235E-09	7.003E-10	4.869E-10	3.772E-10	2.990E-10	
NW	62	1.922E-09	1.436E-09	1.098E-09	6.010E-10	4.586E-10	3.599E-10	2.879E-10	
NNW	80	2.989E-09	2.013E-09	1.451E-09	1.094E-09	8.464E-10	6.739E-10	5.466E-10	
AVERAGE	2096	2.615E-09	1.944E-09	1.519E-09	1.164E-09	9.283E-10	7.705E-10	6.435E-10	

Table B-6  
Depleted X/Q Factors for Main Stack

Deco 2nd quarter 1991 X/Q tables  
Stack Release: GROUND-LL % AVERAGE CHL/Q AFTER DEPLETION (MET. AND ATOMIC ENERGY 1968 DEPLETION MODEL) \* (SgJ/K3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	87	2.348E-10	7.604E-09	6.861E-09	7.282E-09	8.325E-09	1.136E-08	1.244E-08	1.231E-08
NNE	353	1.811E-09	5.877E-08	4.509E-08	3.378E-08	3.140E-08	3.470E-08	3.891E-08	3.625E-08
NE	288	2.660E-09	8.200E-08	3.814E-08	2.076E-08	1.799E-08	1.900E-08	2.013E-08	1.997E-08
ENE	128	4.626E-10	2.941E-08	1.747E-08	1.141E-08	9.422E-09	8.492E-09	8.701E-09	8.774E-09
E	141	8.225E-10	2.978E-08	1.858E-08	1.204E-08	1.041E-08	1.063E-08	1.126E-08	1.125E-08
ESE	119	1.295E-09	4.591E-08	2.781E-08	1.867E-08	1.573E-08	1.446E-08	1.406E-08	1.329E-08
SE	92	1.709E-09	5.681E-08	3.747E-08	2.156E-08	1.515E-08	1.446E-08	1.057E-08	1.040E-08
SSE	125	4.254E-09	1.648E-07	9.204E-08	5.485E-08	6.823E-08	6.750E-08	6.060E-08	5.252E-08
S	122	6.101E-09	1.275E-07	7.703E-08	1.417E-07	1.099E-07	1.436E-07	1.285E-07	1.011E-07
SSW	152	1.164E-08	1.960E-07	1.007E-07	1.371E-07	2.629E-07	2.361E-07	1.494E-07	1.052E-07
SW	138	1.780E-08	1.358E-07	9.419E-08	1.266E-07	1.274E-07	1.189E-07	9.585E-08	7.809E-08
WSW	90	1.055E-08	8.942E-08	7.083E-08	6.385E-08	9.071E-08	9.157E-08	7.062E-08	5.199E-08
W	98	4.211E-09	4.929E-08	5.535E-08	6.004E-08	7.130E-08	7.222E-08	5.714E-08	4.838E-08
WNW	85	2.095E-09	2.921E-08	3.978E-08	3.450E-08	4.217E-08	4.873E-08	4.380E-08	3.983E-08
NW	80	9.639E-10	1.939E-08	1.931E-08	1.415E-08	1.245E-08	1.334E-08	1.409E-08	1.375E-08
NNW	41	5.268E-11	2.142E-09	1.487E-09	1.878E-09	2.865E-09	5.005E-09	6.008E-09	6.184E-09
AVERAGE	2139	4.192E-09	7.024E-08	4.638E-08	4.751E-08	5.729E-08	5.688E-08	4.425E-08	3.829E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	87	1.156E-08	1.073E-08	9.915E-09	9.184E-09	8.495E-09	5.898E-09	4.349E-09	2.682E-09
NNE	353	3.395E-08	3.150E-08	2.913E-08	2.702E-08	2.500E-08	1.736E-08	1.281E-08	7.915E-09
NE	288	1.901E-08	1.794E-08	1.687E-08	1.589E-08	1.489E-08	1.090E-08	8.403E-09	5.606E-09
ENE	128	8.527E-09	8.205E-09	7.830E-09	7.451E-09	7.021E-09	5.060E-09	3.826E-09	2.550E-09
E	141	1.078E-08	1.025E-08	9.700E-09	9.191E-09	8.663E-09	6.428E-09	4.978E-09	3.320E-09
ESE	119	1.230E-08	1.134E-08	1.045E-08	9.658E-09	8.911E-09	6.180E-09	4.597E-09	2.908E-09
SE	92	1.001E-08	9.478E-09	8.915E-09	8.368E-09	7.799E-09	5.445E-09	4.049E-09	2.611E-09
SSE	125	4.520E-08	3.919E-08	3.427E-08	3.018E-08	2.677E-08	1.626E-08	1.109E-08	6.751E-09
S	122	7.881E-08	6.358E-08	5.265E-08	4.443E-08	3.811E-08	2.099E-08	1.352E-08	7.14E-09
SSW	152	7.964E-08	6.262E-08	5.110E-08	4.246E-08	3.594E-08	1.903E-08	1.202E-08	6.147E-09
SW	138	6.463E-08	5.443E-08	4.648E-08	4.011E-08	3.492E-08	1.943E-08	1.248E-08	6.264E-09
WSW	90	4.410E-08	3.606E-08	3.006E-08	2.544E-08	2.181E-08	1.181E-08	7.448E-09	3.754E-09
W	98	4.087E-08	3.493E-08	3.020E-08	2.637E-08	2.323E-08	1.718E-08	1.079E-08	5.343E-09
WNW	85	3.503E-08	3.077E-08	2.483E-08	2.194E-08	1.945E-08	1.218E-08	8.203E-09	4.385E-09
NW	80	1.283E-08	1.188E-08	1.099E-08	1.019E-08	9.429E-09	9.285E-09	6.417E-09	4.110E-09
NNW	41	5.916E-09	5.535E-09	5.132E-09	4.755E-09	4.393E-09	3.000E-09	2.328E-09	2.685E-09
AVERAGE	2139	3.207E-08	2.742E-08	2.366E-08	2.079E-08	1.843E-08	1.167E-08	7.957E-09	4.617E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	87	1.837E-09	1.335E-09	1.011E-09	7.919E-10	6.325E-10	5.551E-10	4.516E-10	
NNE	353	5.457E-09	4.032E-09	3.129E-09	2.520E-09	2.071E-09	1.743E-09	1.488E-09	
NE	288	4.103E-09	3.164E-09	2.524E-09	2.075E-09	1.735E-09	1.479E-09	1.276E-09	
ENE	128	1.904E-09	1.582E-09	1.321E-09	1.248E-09	1.040E-09	8.829E-10	7.579E-10	
E	141	2.415E-09	1.843E-09	1.957E-09	1.532E-09	1.254E-09	1.036E-09	8.677E-10	
ESE	119	2.043E-09	1.700E-09	1.301E-09	1.033E-09	8.377E-10	6.961E-10	5.876E-10	
SE	92	1.868E-09	1.795E-09	1.320E-09	1.009E-09	7.876E-10	6.308E-10	5.142E-10	
SSE	125	4.143E-09	2.853E-09	2.089E-09	1.594E-09	1.245E-09	9.975E-10	8.133E-10	
S	122	4.225E-09	2.792E-09	1.971E-09	1.458E-09	1.109E-09	8.721E-10	7.017E-10	
SSW	152	3.785E-09	2.581E-09	1.886E-09	1.444E-09	1.137E-09	9.223E-10	7.633E-10	
SW	138	3.786E-09	2.542E-09	1.827E-09	1.377E-09	1.052E-09	8.385E-10	6.831E-10	
WSW	90	2.279E-09	1.534E-09	1.070E-09	8.084E-10	6.290E-10	4.851E-10	3.988E-10	
W	98	3.147E-09	2.048E-09	1.428E-09	1.045E-09	6.775E-10	4.670E-10	3.767E-10	
WNW	85	2.742E-09	1.894E-09	1.295E-09	7.712E-10	5.608E-10	4.444E-10	3.604E-10	
NW	80	2.622E-09	1.901E-09	1.395E-09	5.618E-10	4.329E-10	3.454E-10	2.817E-10	
NNW	41	1.693E-09	1.172E-09	8.595E-10	6.546E-10	5.083E-10	4.044E-10	3.267E-10	
AVERAGE	2139	3.003E-09	2.173E-09	1.662E-09	1.246E-09	9.818E-10	8.000E-10	6.656E-10	



Table B-6

## Depleted X/Q Factors for Main Stack

BECO 3rd quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CH19 AFTER DEPLETION (NET, AND ATOMIC ENERGY 1960 DEPLETION MODEL) \* (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	172	8.832E-10	3.069E-08	2.336E-08	1.703E-08	1.646E-08	1.921E-08	2.043E-08	1.994E-08
NNE	410	1.215E-09	3.968E-08	2.451E-08	1.701E-08	1.878E-08	2.815E-08	3.365E-08	3.483E-08
NE	198	1.088E-09	3.740E-08	2.980E-08	2.181E-08	1.728E-08	1.547E-08	1.588E-08	1.562E-08
ENE	165	1.194E-09	4.062E-08	2.345E-08	1.390E-08	1.149E-08	1.223E-08	1.329E-08	1.344E-08
E	136	6.570E-10	2.415E-08	2.366E-08	1.668E-08	1.276E-08	1.087E-08	1.087E-08	1.062E-08
ESE	127	1.098E-09	3.961E-08	2.228E-08	1.517E-08	1.420E-08	1.608E-08	1.725E-08	1.706E-08
SE	124	1.138E-09	5.738E-08	4.11E-08	2.418E-08	1.605E-08	1.635E-08	1.185E-08	1.199E-08
SSE	124	7.305E-09	2.301E-07	1.051E-07	4.524E-08	5.419E-08	5.595E-08	4.308E-08	4.786E-08
S	120	8.805E-09	1.920E-07	7.668E-08	1.067E-07	1.010E-07	1.332E-07	1.324E-07	1.096E-07
SSW	62	4.346E-09	6.742E-08	5.275E-08	7.102E-08	1.427E-07	1.756E-07	1.152E-07	8.281E-08
SW	71	1.071E-08	8.601E-08	5.537E-08	6.969E-08	7.161E-08	6.900E-08	5.594E-08	4.544E-08
WSW	65	1.293E-08	1.118E-07	4.771E-08	3.971E-08	6.431E-08	7.472E-08	6.021E-08	4.859E-08
W	81	5.031E-09	6.463E-08	4.330E-08	3.872E-08	4.553E-08	4.095E-08	3.999E-08	3.441E-08
WNW	103	7.994E-10	1.514E-08	3.315E-08	3.368E-08	4.431E-08	5.323E-08	4.835E-08	4.418E-08
NW	97	2.318E-10	4.579E-09	2.975E-09	3.516E-09	6.524E-09	1.289E-08	1.573E-08	1.621E-08
NNW	68	7.277E-14	4.316E-10	1.540E-09	1.260E-09	1.722E-09	3.865E-09	5.424E-09	6.069E-09
AVERAGE	2123	3.590E-09	6.636E-08	3.809E-08	3.344E-08	3.995E-08	4.658E-08	4.059E-08	3.491E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	172	1.860E-08	1.717E-08	1.581E-08	1.460E-08	1.347E-08	9.309E-09	6.860E-09	4.308E-09
NNE	410	3.356E-08	3.175E-08	2.979E-08	2.794E-08	2.609E-08	1.863E-08	1.402E-08	8.982E-09
NE	198	1.481E-08	1.396E-08	1.311E-08	1.234E-08	1.157E-08	8.446E-09	6.485E-09	4.296E-09
ENE	165	1.293E-08	1.228E-08	1.160E-08	1.095E-08	1.028E-08	7.490E-09	5.712E-09	3.758E-09
E	136	1.006E-08	9.498E-09	8.958E-09	8.469E-09	7.975E-09	5.923E-09	4.610E-09	3.110E-09
ESE	127	1.610E-08	1.502E-08	1.395E-08	1.297E-08	1.203E-08	8.405E-09	6.240E-09	3.923E-09
SE	124	1.159E-08	1.110E-08	1.056E-08	1.004E-08	9.503E-09	7.149E-09	5.600E-09	3.788E-09
SSE	124	4.225E-08	3.726E-08	3.293E-08	2.920E-08	2.598E-08	1.566E-08	1.050E-08	6.317E-09
S	120	8.760E-08	7.211E-08	6.068E-08	5.190E-08	4.497E-08	2.514E-08	1.578E-08	7.507E-09
SSW	62	6.311E-08	5.001E-08	4.079E-08	3.401E-08	2.885E-08	1.510E-08	9.262E-09	4.387E-09
SW	71	3.749E-08	3.150E-08	2.688E-08	2.321E-08	2.025E-08	1.167E-08	7.463E-09	3.991E-09
WSW	65	3.975E-08	3.311E-08	2.801E-08	2.398E-08	2.077E-08	1.159E-08	7.437E-09	3.799E-09
W	81	2.938E-08	2.534E-08	2.208E-08	1.942E-08	1.719E-08	1.470E-08	9.592E-09	5.051E-09
WNW	103	3.914E-08	3.463E-08	2.816E-08	2.507E-08	2.239E-08	1.460E-08	1.012E-08	5.599E-09
NW	97	1.550E-08	1.455E-08	1.355E-08	1.262E-08	1.171E-08	1.159E-08	8.104E-09	5.242E-09
NNW	68	6.113E-09	5.979E-09	5.757E-09	5.515E-09	5.239E-09	3.916E-09	3.352E-09	4.521E-09
AVERAGE	2123	2.987E-08	2.595E-08	2.266E-08	2.014E-08	1.802E-08	1.183E-08	8.208E-09	4.910E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	172	3.024E-09	2.262E-09	1.764E-09	1.422E-09	1.168E-09	1.247E-09	1.025E-09	
NNE	410	6.401E-09	4.850E-09	3.826E-09	3.117E-09	2.586E-09	2.191E-09	1.880E-09	
NE	198	3.111E-09	2.411E-09	1.917E-09	1.572E-09	1.311E-09	1.115E-09	9.591E-10	
ENE	165	2.702E-09	2.160E-09	1.982E-09	1.604E-09	1.327E-09	1.113E-09	9.494E-10	
E	136	2.286E-09	1.764E-09	1.951E-09	1.570E-09	1.285E-09	1.074E-09	9.097E-10	
ESE	127	2.750E-09	2.372E-09	1.818E-09	1.442E-09	1.165E-09	9.616E-10	8.047E-10	
SE	124	2.766E-09	3.128E-09	2.361E-09	1.842E-09	1.463E-09	1.188E-09	9.785E-10	
SSE	124	3.966E-09	2.725E-09	1.985E-09	1.505E-09	1.167E-09	9.306E-10	7.561E-10	
S	120	4.274E-09	2.788E-09	1.999E-09	1.517E-09	1.186E-09	9.553E-10	7.854E-10	
SSW	62	2.463E-09	1.853E-09	1.068E-09	7.805E-10	5.912E-10	4.648E-10	3.746E-10	
SW	71	2.421E-09	1.600E-09	1.123E-09	8.260E-10	6.066E-10	4.720E-10	3.769E-10	
WSW	65	2.286E-09	1.512E-09	1.010E-09	7.409E-10	5.609E-10	4.116E-10	3.311E-10	
W	81	3.106E-09	2.083E-09	1.482E-09	1.100E-09	8.652E-10	4.422E-10	3.600E-10	
WNW	103	3.602E-09	2.656E-09	2.013E-09	1.124E-09	7.898E-10	4.174E-10	4.936E-10	
NW	97	3.351E-09	3.376E-09	1.742E-09	8.193E-10	6.200E-10	4.850E-10	3.872E-10	
NNW	68	2.826E-09	1.924E-09	1.390E-09	1.044E-09	8.010E-10	6.317E-10	5.066E-10	
AVERAGE	2123	3.710E-09	2.385E-09	1.839E-09	1.377E-09	1.081E-09	8.938E-10	7.424E-10	

Table B-6

## Depleted X/Q Factors for Main Stack

BECO 4th Quarter 1991 X/Q tables

SECTOR AVERAGE MODEL

Stack Release: GROUND-LEVEL AVERAGE CH1/Q AFTER DEPLETION (NET, AND ATOMIC ENERGY 1968 DEPLETION MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	122	2.074E-10	8.891E-09	1.352E-08	1.159E-08	1.123E-08	1.321E-08	1.423E-08	1.401E-08
NNE	223	1.774E-10	8.140E-09	1.384E-08	1.068E-08	1.083E-08	1.615E-08	1.993E-08	2.105E-08
NE	192	5.463E-11	3.932E-09	1.110E-08	1.033E-08	1.050E-08	1.435E-08	1.701E-08	1.767E-08
ENE	165	2.110E-10	6.880E-09	7.333E-09	8.148E-09	9.756E-09	1.454E-08	1.732E-08	1.796E-08
E	216	9.422E-10	2.809E-08	1.529E-08	1.266E-08	1.952E-08	2.282E-08	2.596E-08	2.606E-08
ESE	223	8.489E-10	2.790E-08	2.479E-08	2.341E-08	2.585E-08	3.111E-08	3.156E-08	2.962E-08
SE	163	1.126E-09	4.712E-08	4.403E-08	3.327E-08	3.011E-08	3.443E-08	2.630E-08	2.436E-08
SSE	83	1.640E-09	4.685E-08	3.207E-08	3.355E-08	4.125E-08	3.832E-08	3.315E-08	2.813E-08
S	160	2.386E-09	4.609E-08	1.005E-07	1.449E-07	1.161E-07	1.081E-07	8.849E-08	6.631E-08
SSW	123	6.083E-10	1.482E-08	6.906E-08	9.587E-08	1.896E-07	1.716E-07	1.076E-07	7.540E-08
SW	28	5.666E-10	5.274E-09	1.047E-08	1.929E-08	2.081E-08	2.521E-08	2.458E-08	2.262E-08
WSW	20	1.370E-09	1.309E-09	1.141E-08	1.343E-08	2.024E-08	2.258E-08	1.852E-08	1.518E-08
W	17	3.603E-10	5.744E-09	1.0E-08	1.129E-08	1.146E-08	1.0E-08	8.628E-09	7.525E-09
WNW	52	1.309E-09	1.514E-08	1.293E-08	1.331E-08	1.800E-08	2.063E-08	1.783E-08	1.596E-08
NW	83	1.154E-10	1.804E-09	1.746E-09	2.637E-09	4.047E-09	7.734E-09	9.845E-09	1.048E-08
NNW	112	1.926E-13	7.593E-10	2.442E-09	1.877E-09	2.484E-09	5.845E-09	8.452E-09	9.620E-09
AVERAGE	1982	7.452E-10	1.753E-08	2.395E-08	2.789E-08	3.361E-08	3.484E-08	2.974E-08	2.912E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	122	1.316E-10	1.224E-08	1.135E-08	1.056E-08	9.809E-09	6.960E-09	5.247E-09	3.380E-09
NNE	223	2.055E-08	1.966E-08	1.862E-08	1.761E-08	1.656E-08	1.208E-08	9.181E-09	5.938E-09
NE	192	1.712E-08	1.630E-08	1.541E-08	1.455E-08	1.368E-08	1.033E-08	7.694E-09	5.069E-09
ENE	165	1.733E-08	1.641E-08	1.541E-08	1.447E-08	1.352E-08	9.648E-09	7.226E-09	4.576E-09
E	216	2.463E-08	2.292E-08	2.122E-08	1.967E-08	1.819E-08	1.261E-08	9.302E-09	5.782E-09
ESE	223	2.689E-08	2.430E-08	2.200E-08	2.003E-08	1.827E-08	1.226E-08	8.931E-09	5.505E-09
SE	163	2.193E-08	1.969E-08	1.774E-08	1.607E-08	1.460E-08	9.678E-09	7.012E-09	4.305E-09
SSE	83	2.393E-08	2.061E-08	1.795E-08	1.577E-08	1.399E-08	8.585E-09	5.941E-09	3.639E-09
S	160	5.055E-08	4.021E-08	3.301E-08	2.774E-08	2.375E-08	1.322E-08	8.737E-09	4.846E-09
SSW	123	5.688E-08	4.458E-08	3.626E-08	3.020E-08	2.567E-08	1.392E-08	8.968E-09	4.739E-09
SW	28	2.019E-08	1.791E-08	1.584E-08	1.400E-08	1.239E-08	7.007E-09	4.303E-09	2.022E-09
WSW	20	1.270E-08	1.088E-08	9.506E-09	8.407E-09	7.530E-09	4.971E-09	3.608E-09	2.098E-09
W	17	6.533E-09	5.723E-09	5.046E-09	4.500E-09	4.031E-09	3.556E-09	2.285E-09	1.160E-09
WNW	52	1.405E-08	1.243E-08	1.107E-08	9.912E-09	8.917E-09	5.503E-09	4.268E-09	2.331E-09
NW	83	1.025E-08	9.815E-09	9.292E-09	8.768E-09	8.224E-09	8.759E-09	6.192E-09	4.096E-09
NNW	112	9.808E-09	9.653E-09	9.417E-09	9.089E-09	8.691E-09	6.650E-09	5.847E-09	7.477E-09
AVERAGE	1982	2.164E-08	1.896E-08	1.682E-08	1.508E-08	1.361E-08	9.090E-09	6.546E-09	4.186E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	122	2.409E-09	1.816E-09	1.421E-09	1.147E-09	9.416E-10	9.805E-10	8.066E-10	
NNE	223	4.224E-09	3.177E-09	2.481E-09	2.000E-09	1.641E-09	1.375E-09	1.166E-09	
NE	192	3.662E-09	2.787E-09	2.195E-09	1.781E-09	1.469E-09	1.236E-09	1.052E-09	
ENE	165	3.212E-09	2.469E-09	2.083E-09	1.652E-09	1.336E-09	1.107E-09	9.295E-10	
E	216	4.023E-09	2.986E-09	2.676E-09	2.105E-09	1.691E-09	1.392E-09	1.164E-09	
ESE	223	3.834E-09	3.173E-09	2.440E-09	1.944E-09	1.579E-09	1.313E-09	1.107E-09	
SE	163	2.999E-09	2.800E-09	2.124E-09	1.668E-09	1.335E-09	1.094E-09	9.103E-10	
SSE	83	2.347E-09	1.647E-09	1.224E-09	9.455E-10	7.464E-10	6.045E-10	4.979E-10	
S	160	3.170E-09	2.275E-09	1.737E-09	1.377E-09	1.116E-09	9.270E-10	7.820E-10	
SSW	123	2.987E-09	2.078E-09	1.545E-09	1.197E-09	9.487E-10	7.716E-10	6.389E-10	
SW	28	1.182E-09	7.814E-10	5.556E-10	4.136E-10	3.121E-10	2.437E-10	1.940E-10	
WSW	20	1.302E-09	8.355E-10	3.986E-10	2.768E-10	2.031E-10	1.414E-10	1.111E-10	
W	17	6.878E-10	4.468E-10	3.097E-10	2.246E-10	1.369E-10	8.900E-11	7.125E-11	
WNW	52	1.483E-09	1.043E-09	7.566E-10	4.825E-10	3.584E-10	2.883E-10	2.364E-10	
NW	83	2.667E-09	1.925E-09	1.439E-09	7.925E-10	6.075E-10	4.797E-10	3.860E-10	
NNW	112	4.674E-09	3.197E-09	2.325E-09	1.759E-09	1.360E-09	1.078E-09	8.692E-10	
AVERAGE	1982	2.804E-09	2.090E-09	1.607E-09	1.235E-09	9.864E-10	8.201E-10	6.827E-10	

Table B-6  
Depleted X/Q Factors for Main Stack

BECo 1991 X/Q tables  
Stack Release: GROUND-LEVEL AVERAGE CH1/Q AFTER DEPLETION (MET. AND ATOMIC ENERGY 1968 DEPLETION MODEL) \* (SEC/M3)

SECTION AVERAGE MODEL

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	469	3.473E-10	1.260E-08	1.242E-08	1.025E-08	1.040E-08	1.289E-08	1.410E-08	1.398E-08
NNE	1163	8.486E-10	2.812E-08	2.189E-08	1.658E-08	1.731E-08	2.371E-08	2.747E-08	2.805E-08
NE	921	1.001E-09	3.273E-08	2.350E-08	1.718E-08	1.808E-08	1.786E-08	1.945E-08	1.944E-08
ENE	631	6.111E-10	2.114E-08	1.532E-08	1.133E-08	1.066E-08	1.229E-08	1.355E-08	1.371E-08
E	723	7.150E-10	2.450E-08	2.062E-08	1.636E-08	1.563E-08	1.746E-08	1.843E-08	1.807E-08
ESE	712	1.222E-09	4.128E-08	2.929E-08	2.271E-08	2.163E-08	2.317E-08	2.329E-08	2.277E-08
SE	596	1.872E-09	6.548E-08	4.418E-08	2.909E-08	2.415E-08	2.712E-08	2.764E-08	1.733E-08
SSE	463	3.790E-09	1.211E-07	6.039E-08	4.858E-08	5.778E-08	5.447E-08	4.809E-08	4.164E-08
S	477	4.717E-09	9.932E-08	7.931E-08	1.239E-07	1.092E-07	1.188E-07	1.054E-07	8.272E-08
SSW	429	4.645E-09	8.485E-08	7.116E-08	9.719E-08	1.909E-07	1.895E-07	1.207E-07	8.534E-08
SW	314	7.707E-09	6.257E-08	5.413E-08	7.048E-08	7.014E-08	6.608E-08	5.384E-08	4.414E-08
WSW	261	6.631E-09	5.750E-08	4.286E-08	4.230E-08	6.403E-08	6.727E-08	5.268E-08	4.164E-08
W	258	3.178E-09	3.958E-08	3.011E-08	3.474E-08	4.014E-08	4.049E-08	5.553E-08	2.756E-08
WNW	300	1.091E-09	1.549E-08	2.526E-08	2.534E-08	3.242E-08	3.722E-08	3.590E-08	3.005E-08
NW	322	3.617E-10	7.192E-09	7.436E-09	6.559E-09	7.379E-09	1.046E-08	1.196E-08	1.209E-08
NNW	301	1.360E-11	9.296E-10	1.924E-09	1.961E-09	2.715E-09	5.252E-09	6.954E-09	7.610E-09
AVERAGE	8340	2.422E-09	4.465E-08	3.441E-08	3.593E-08	4.315E-08	4.525E-08	3.844E-08	3.167E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	469	1.317E-08	1.225E-08	1.136E-08	1.055E-08	9.781E-09	6.857E-09	5.103E-09	3.213E-09
NNE	1163	2.683E-08	2.525E-08	2.361E-08	2.208E-08	2.057E-08	1.459E-08	1.091E-08	6.907E-09
NE	921	1.849E-08	1.739E-08	1.629E-08	1.528E-08	1.428E-08	1.032E-08	7.873E-09	5.164E-09
ENE	631	1.314E-08	1.244E-08	1.171E-08	1.102E-08	1.032E-08	7.432E-09	5.631E-09	3.665E-09
E	723	1.694E-08	1.575E-08	1.462E-08	1.360E-08	1.263E-08	8.940E-09	6.719E-09	4.309E-09
ESE	712	2.015E-08	1.836E-08	1.675E-08	1.533E-08	1.407E-08	9.562E-09	7.015E-09	4.363E-09
SE	596	1.736E-08	1.592E-08	1.459E-08	1.341E-08	1.232E-08	8.353E-09	6.111E-09	3.815E-09
SSE	463	3.560E-08	3.085E-08	2.698E-08	2.376E-08	2.108E-08	1.283E-08	8.770E-09	5.360E-09
S	477	6.453E-08	5.215E-08	4.327E-08	3.659E-08	3.145E-08	1.737E-08	1.111E-08	5.645E-09
SSW	429	6.455E-08	5.091E-08	4.143E-08	3.447E-08	2.921E-08	1.548E-08	9.731E-09	4.899E-09
SW	314	3.669E-08	3.099E-08	2.653E-08	2.294E-08	2.002E-08	1.135E-08	7.275E-09	3.703E-09
WSW	261	3.362E-08	2.775E-08	2.334E-08	1.991E-08	1.720E-08	9.637E-09	6.236E-09	3.236E-09
W	258	2.345E-08	2.017E-08	1.755E-08	1.541E-08	1.364E-08	1.090E-08	6.970E-09	3.548E-09
WNW	300	2.655E-08	2.347E-08	2.081E-08	1.854E-08	1.617E-08	1.004E-08	7.009E-09	3.889E-09
NW	322	1.149E-08	1.077E-08	1.004E-08	9.337E-09	8.690E-09	5.854E-09	4.213E-09	4.087E-09
NNW	301	7.581E-09	7.351E-09	7.026E-09	6.685E-09	6.310E-09	4.604E-09	3.872E-09	4.843E-09
AVERAGE	8340	2.688E-08	2.324E-08	2.037E-08	1.806E-08	1.596E-08	1.045E-08	7.284E-09	4.415E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	469	2.251E-09	1.675E-09	1.298E-09	1.039E-09	8.475E-10	8.687E-10	7.131E-10	
NNE	1163	4.861E-09	3.642E-09	2.848E-09	2.303E-09	1.897E-09	1.598E-09	1.363E-09	
NE	921	3.736E-09	2.855E-09	2.261E-09	1.846E-09	1.533E-09	1.299E-09	1.114E-09	
ENE	631	2.643E-09	2.103E-09	1.893E-09	1.528E-09	1.256E-09	1.054E-09	8.971E-10	
E	723	3.067E-09	2.314E-09	2.268E-09	1.801E-09	1.458E-09	1.208E-09	1.015E-09	
ESE	712	3.050E-09	2.550E-09	1.963E-09	1.564E-09	1.271E-09	1.057E-09	8.920E-10	
SE	596	2.681E-09	2.586E-09	1.947E-09	1.520E-09	1.211E-09	9.878E-10	8.183E-10	
SSE	463	3.414E-09	2.371E-09	1.745E-09	1.335E-09	1.045E-09	8.389E-10	6.857E-10	
S	477	3.404E-09	2.291E-09	1.663E-09	1.266E-09	9.912E-10	7.993E-10	6.577E-10	
SSW	429	2.953E-09	1.983E-09	1.433E-09	1.089E-09	8.511E-10	6.855E-10	5.635E-10	
SW	314	2.252E-09	1.514E-09	1.088E-09	8.188E-10	6.238E-10	4.961E-10	4.033E-10	
WSW	261	1.975E-09	1.321E-09	8.774E-10	6.533E-10	5.024E-10	3.786E-10	3.081E-10	
W	258	2.134E-09	1.412E-09	9.989E-10	7.397E-10	4.746E-10	3.269E-10	2.606E-10	
WNW	300	2.195E-09	1.811E-09	1.335E-09	7.745E-10	5.524E-10	4.344E-10	3.494E-10	
NW	322	2.642E-09	1.911E-09	1.419E-09	6.926E-10	5.285E-10	4.165E-10	3.349E-10	
NNW	301	3.016E-09	2.056E-09	1.491E-09	1.127E-09	8.703E-10	6.902E-10	5.567E-10	
AVERAGE	8340	2.911E-09	2.150E-09	1.658E-09	1.256E-09	9.946E-10	8.212E-10	6.836E-10	

Table B-7

## Gamma X/Q Factors for Main Stack

BECO 1st quarter 1991 x/q tables

Stack Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	88	2.921E-07	1.484E-07	7.609E-08	5.147E-08	3.933E-07	2.735E-08	2.128E-08	1.753E-08
NNE	177	4.810E-07	2.477E-07	1.240E-07	8.463E-08	6.559E-08	4.662E-08	3.665E-08	3.027E-08
NE	243	6.587E-07	3.345E-07	1.725E-07	1.178E-07	9.050E-08	6.304E-08	4.882E-08	3.995E-08
ENE	173	4.675E-07	2.382E-07	1.222E-07	8.255E-08	6.294E-08	4.335E-08	3.338E-08	2.728E-08
E	230	6.047E-07	3.117E-07	1.599E-07	1.075E-07	8.223E-08	5.649E-08	4.350E-08	3.539E-08
ESE	243	6.642E-07	3.527E-07	1.733E-07	1.149E-07	8.675E-08	5.884E-08	4.474E-08	3.627E-08
SE	217	8.843E-07	4.679E-07	2.691E-07	1.541E-07	1.031E-07	7.239E-08	4.314E-08	3.541E-08
SSE	131	6.574E-07	3.484E-07	1.969E-07	9.672E-08	7.616E-08	5.064E-08	3.746E-08	2.948E-08
S	75	3.660E-07	1.928E-07	1.160E-07	9.015E-08	6.736E-08	4.872E-08	3.656E-08	2.809E-08
SSW	92	5.011E-07	2.623E-07	1.456E-07	1.036E-07	9.759E-08	7.144E-08	4.965E-08	3.752E-08
SW	77	3.396E-07	1.765E-07	1.060E-07	7.161E-08	5.334E-08	3.565E-08	2.578E-08	1.997E-08
WSW	86	6.193E-07	3.186E-07	1.617E-07	1.012E-07	7.970E-08	5.691E-08	4.170E-08	3.246E-08
W	62	3.750E-07	1.984E-07	1.094E-07	5.945E-08	4.537E-08	3.074E-08	2.096E-08	1.670E-08
WNW	60	2.389E-07	1.213E-07	9.601E-08	6.036E-08	5.069E-08	3.490E-08	2.433E-08	1.954E-08
NW	62	2.127E-07	1.082E-07	5.555E-08	3.784E-08	2.906E-08	2.018E-08	1.557E-08	1.270E-08
	80	3.325E-07	1.676E-07	8.560E-08	5.840E-08	4.483E-08	3.133E-08	2.446E-08	2.019E-08
	196	4.809E-07	2.494E-07	1.356E-07	8.702E-08	6.716E-08	4.680E-08	3.425E-08	2.741E-08
DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
	3	1.488E-08	1.293E-08	1.142E-08	1.023E-08	9.246E-09	6.193E-09	4.609E-09	3.002E-09
	7	2.571E-08	2.231E-08	1.969E-08	1.759E-08	1.587E-08	1.054E-08	7.782E-09	4.999E-09
	13	3.372E-08	2.914E-08	2.562E-08	2.283E-08	2.056E-08	1.359E-08	1.003E-08	6.450E-09
	173	2.302E-08	1.990E-08	1.752E-08	1.563E-08	1.410E-08	9.380E-09	6.967E-09	4.539E-09
	230	2.973E-08	2.557E-08	2.240E-08	1.990E-08	1.787E-08	1.169E-08	8.565E-09	5.460E-09
ESE	243	3.038E-08	2.607E-08	2.278E-08	2.019E-08	1.810E-08	1.176E-08	8.583E-09	5.443E-09
SE	217	2.961E-08	2.548E-08	2.232E-08	1.982E-08	1.778E-08	1.159E-08	8.452E-09	5.331E-09
SSE	131	2.411E-08	2.036E-08	1.753E-08	1.534E-08	1.361E-08	8.587E-09	6.167E-09	4.057E-09
S	75	2.241E-08	1.850E-08	1.567E-08	1.351E-08	1.184E-08	7.196E-09	5.051E-09	3.054E-09
SSW	92	2.990E-08	2.468E-08	2.092E-08	1.806E-08	1.585E-08	9.684E-09	6.829E-09	4.161E-09
SW	77	1.616E-08	1.348E-08	1.151E-08	9.987E-09	8.793E-09	5.394E-09	3.805E-09	2.317E-09
WSW	86	2.631E-08	2.197E-08	1.876E-08	1.628E-08	1.433E-08	8.783E-09	6.171E-09	3.718E-09
W	62	1.378E-08	1.167E-08	1.010E-08	8.867E-09	7.887E-09	5.086E-09	4.166E-09	2.544E-09
WNW	60	1.624E-08	1.386E-08	1.206E-08	1.064E-08	9.513E-09	5.838E-09	4.756E-09	2.995E-09
NW	62	1.070E-08	9.234E-09	8.111E-09	7.223E-09	6.502E-09	5.244E-09	3.811E-09	2.612E-09
NNW	80	1.719E-08	1.498E-08	1.328E-08	1.193E-08	1.082E-08	7.343E-09	5.850E-09	5.620E-09
AVERAGE	2096	2.274E-08	1.938E-08	1.685E-08	1.488E-08	1.329E-08	8.669E-09	6.350E-09	4.144E-09
DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	88	2.107E-09	1.735E-09	1.424E-09	1.209E-09	1.044E-09	1.170E-09	1.035E-09	
NNE	177	3.638E-09	2.839E-09	2.319E-09	1.957E-09	1.682E-09	1.475E-09	1.311E-09	
NE	243	4.717E-09	3.693E-09	3.027E-09	2.562E-09	2.208E-09	1.942E-09	1.729E-09	
ENE	173	3.344E-09	2.708E-09	2.431E-09	2.059E-09	1.776E-09	1.562E-09	1.391E-09	
E	230	3.963E-09	3.088E-09	2.888E-09	2.425E-09	2.077E-09	1.816E-09	1.609E-09	
ESE	243	3.939E-09	3.320E-09	2.705E-09	2.278E-09	1.955E-09	1.714E-09	1.521E-09	
SE	217	3.837E-09	3.352E-09	2.708E-09	2.263E-09	1.929E-09	1.681E-09	1.485E-09	
SSE	131	2.891E-09	2.231E-09	1.810E-09	1.518E-09	1.299E-09	1.134E-09	1.004E-09	
S	75	2.145E-09	1.635E-09	1.316E-09	1.096E-09	9.318E-10	8.094E-10	7.127E-10	
SSW	92	2.937E-09	2.247E-09	1.815E-09	1.516E-09	1.292E-09	1.123E-09	9.904E-10	
SW	77	1.633E-09	1.248E-09	1.008E-09	8.416E-10	7.279E-10	6.337E-10	5.590E-10	
WSW	86	2.602E-09	1.987E-09	1.648E-09	1.366E-09	1.156E-09	1.009E-09	8.861E-10	
W	62	1.798E-09	1.377E-09	1.111E-09	9.280E-10	8.205E-10	7.126E-10	6.274E-10	
WNW	60	2.159E-09	1.773E-09	1.573E-09	1.360E-09	1.158E-09	1.007E-09	8.871E-10	
NW	62	1.873E-09	1.481E-09	1.215E-09	1.106E-09	9.425E-10	8.200E-10	7.232E-10	
NNW	80	4.007E-09	3.087E-09	2.504E-09	2.099E-09	1.794E-09	1.566E-09	1.384E-09	
AVERAGE	2096	2.981E-09	2.363E-09	1.969E-09	1.661E-09	1.425E-09	1.267E-09	1.118E-09	



Table B-7

## Gamma X/Q Factors for Main Stack

beco 2nd quarter 1991 x/q tables

Stack Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) \* (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	87	3.212E-07	1.646E-07	8.304E-08	5.585E-08	4.310E-08	3.024E-08	2.351E-08	1.927E-08
NNE	353	9.576E-07	5.023E-07	2.469E-07	1.587E-07	1.207E-07	8.314E-08	6.408E-08	5.242E-08
NE	128	7.392E-07	3.973E-07	1.824E-07	1.088E-07	8.235E-08	5.651E-08	4.358E-08	3.572E-08
ENE	128	4.176E-07	2.196E-07	1.053E-07	6.602E-08	4.988E-08	3.395E-08	2.505E-08	2.132E-08
E	141	4.720E-07	2.472E-07	1.195E-07	7.562E-08	5.720E-08	3.903E-08	2.998E-08	2.451E-08
ESE	119	3.961E-07	2.148E-07	1.002E-07	6.225E-08	4.681E-08	3.168E-08	2.419E-08	1.972E-08
SE	92	8.345E-07	4.390E-07	2.122E-07	1.113E-07	6.922E-08	4.711E-08	2.584E-08	2.116E-08
SSE	125	1.520E-06	8.207E-07	4.059E-07	1.333E-07	1.055E-07	7.138E-08	5.370E-08	4.286E-08
S	122	8.658E-07	4.726E-07	2.121E-07	1.528E-07	1.142E-07	8.461E-08	6.543E-08	5.125E-08
SSW	152	1.065E-06	5.890E-07	2.427E-07	1.567E-07	1.460E-07	1.044E-07	7.269E-08	5.505E-08
SW	138	1.216E-06	6.425E-07	3.417E-07	2.032E-07	1.541E-07	1.064E-07	7.883E-08	6.216E-08
WSW	90	1.027E-06	5.391E-07	2.336E-07	1.287E-07	9.898E-08	6.979E-08	5.099E-08	3.976E-08
W	98	8.698E-07	4.515E-07	2.813E-07	1.477E-07	1.140E-07	7.846E-08	5.384E-08	4.286E-08
WNW	85	5.179E-07	2.690E-07	2.151E-07	1.306E-07	1.084E-07	7.497E-08	5.300E-08	4.286E-08
NW	80	4.526E-07	2.338E-07	1.169E-07	7.648E-08	5.776E-08	3.931E-08	3.009E-08	2.453E-08
NNW	41	1.612E-07	8.198E-08	4.146E-08	2.812E-08	2.179E-08	1.545E-08	1.211E-08	9.982E-09
AVERAGE	2139	7.396E-07	3.928E-07	1.963E-07	1.123E-07	8.687E-08	6.041E-08	4.424E-08	3.534E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	87	1.627E-08	1.407E-08	1.237E-08	1.103E-08	9.936E-09	6.568E-09	4.843E-09	3.112E-09
NNE	353	4.424E-08	3.824E-08	3.363E-08	2.999E-08	2.702E-08	1.787E-08	1.318E-08	8.488E-09
NE	288	3.026E-08	2.625E-08	2.319E-08	2.075E-08	1.877E-08	1.262E-08	9.449E-09	6.225E-09
ENE	128	1.806E-08	1.569E-08	1.389E-08	1.246E-08	1.130E-08	7.678E-09	5.792E-09	3.862E-09
E	141	2.073E-08	1.798E-08	1.588E-08	1.422E-08	1.287E-08	8.681E-09	6.520E-09	4.322E-09
ESE	119	1.664E-08	1.439E-08	1.266E-08	1.129E-08	1.017E-08	6.745E-09	4.995E-09	3.237E-09
SE	92	1.792E-08	1.556E-08	1.375E-08	1.233E-08	1.116E-08	7.537E-09	5.658E-09	3.745E-09
SSE	125	3.549E-08	3.018E-08	2.618E-08	2.304E-08	2.053E-08	1.313E-08	9.535E-09	6.348E-09
S	122	4.133E-08	3.442E-08	2.937E-08	2.549E-08	2.246E-08	1.389E-08	9.899E-09	6.149E-09
SSW	152	4.401E-08	3.640E-08	3.087E-08	2.665E-08	2.339E-08	1.426E-08	1.006E-08	6.150E-09
SW	138	5.097E-08	4.299E-08	3.702E-08	3.239E-08	2.872E-08	1.809E-08	1.297E-08	8.059E-09
WSW	90	3.229E-08	2.699E-08	2.307E-08	2.003E-08	1.765E-08	1.084E-08	7.628E-09	4.600E-09
W	98	3.531E-08	2.987E-08	2.578E-08	2.258E-08	2.004E-08	1.445E-08	1.014E-08	6.105E-09
WNW	85	3.580E-08	3.065E-08	2.450E-08	2.167E-08	1.938E-08	1.296E-08	9.516E-09	5.964E-09
NW	80	2.069E-08	1.788E-08	1.573E-08	1.404E-08	1.266E-08	1.039E-08	7.631E-09	5.406E-09
NNW	41	8.465E-09	7.337E-09	6.465E-09	5.771E-09	5.203E-09	3.445E-09	2.658E-09	2.356E-09
AVERAGE	2139	2.928E-08	2.493E-08	2.152E-08	1.898E-08	1.695E-08	1.120E-08	8.155E-09	5.258E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	87	2.270E-09	1.774E-09	1.453E-09	1.228E-09	1.058E-09	1.152E-09	1.018E-09	
NNE	353	6.194E-09	4.845E-09	3.970E-09	3.358E-09	2.893E-09	2.543E-09	2.264E-09	
NE	288	4.617E-09	3.655E-09	3.018E-09	2.571E-09	2.229E-09	1.969E-09	1.761E-09	
ENE	128	2.885E-09	2.366E-09	2.153E-09	1.833E-09	1.588E-09	1.401E-09	1.252E-09	
E	141	3.221E-09	2.559E-09	2.583E-09	2.193E-09	1.895E-09	1.669E-09	1.489E-09	
ESE	119	2.375E-09	2.040E-09	1.670E-09	1.412E-09	1.216E-09	1.068E-09	9.503E-10	
SE	92	2.783E-09	2.678E-09	2.193E-09	1.852E-09	1.594E-09	1.399E-09	1.243E-09	
SSE	125	4.559E-09	3.530E-09	2.875E-09	2.418E-09	2.073E-09	1.813E-09	1.607E-09	
S	122	4.390E-09	3.388E-09	2.754E-09	2.313E-09	1.982E-09	1.734E-09	1.536E-09	
SSW	152	4.347E-09	3.331E-09	2.691E-09	2.249E-09	1.918E-09	1.672E-09	1.476E-09	
SW	138	5.758E-09	4.440E-09	3.603E-09	3.022E-09	2.650E-09	2.312E-09	2.044E-09	
WSW	90	3.222E-09	2.462E-09	2.038E-09	1.690E-09	1.431E-09	1.250E-09	1.097E-09	
W	98	4.277E-09	3.252E-09	2.613E-09	2.173E-09	1.899E-09	1.646E-09	1.447E-09	
WNW	85	4.275E-09	3.432E-09	2.948E-09	2.528E-09	2.151E-09	1.871E-09	1.649E-09	
NW	80	3.928E-09	3.167E-09	2.629E-09	2.594E-09	2.219E-09	1.937E-09	1.714E-09	
NNW	41	1.667E-09	1.278E-09	1.033E-09	8.637E-10	7.368E-10	6.424E-10	5.675E-10	
AVERAGE	2139	3.798E-09	3.012E-09	2.514E-09	2.144E-09	1.846E-09	1.630E-09	1.445E-09	

Table B-7

## Gamma X/Q Factors for Main Stack

BECs 3rd quarter 1991 x/q tables

Stack Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) - (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	172	5.587E-07	2.903E-07	1.425E-07	9.165E-08	6.955E-08	4.768E-08	3.660E-08	2.984E-08
NNE	410	1.035E-06	5.318E-07	2.622E-07	1.714E-07	1.309E-07	9.078E-08	7.035E-08	5.768E-08
NE	198	6.863E-07	3.562E-07	1.750E-07	1.120E-07	8.378E-08	5.581E-08	4.220E-08	3.428E-08
ENE	165	5.508E-07	2.883E-07	1.375E-07	8.566E-08	6.456E-08	4.388E-08	3.363E-08	2.747E-08
E	136	4.501E-07	2.538E-07	1.155E-07	7.378E-08	5.504E-08	3.664E-08	2.770E-08	2.248E-08
ESE	127	5.305E-07	2.783E-07	1.330E-07	8.684E-08	6.509E-08	4.518E-08	3.471E-08	2.832E-08
SE	124	1.282E-06	6.629E-07	3.019E-07	1.558E-07	9.736E-08	6.553E-08	3.329E-08	2.712E-08
SSE	124	2.085E-06	1.111E-06	5.295E-07	1.449E-07	1.139E-07	7.740E-08	5.867E-08	4.716E-08
S	120	1.076E-06	5.885E-07	2.232E-07	1.512E-07	1.133E-07	8.575E-08	6.811E-08	5.421E-08
SSW	62	6.000E-07	3.540E-07	1.526E-07	1.014E-07	9.433E-08	7.174E-08	5.065E-08	3.869E-08
SW	71	7.316E-07	3.848E-07	1.981E-07	1.152E-07	8.718E-08	6.009E-08	4.448E-08	3.505E-08
WSW	65	1.009E-06	5.303E-07	2.025E-07	1.083E-07	8.314E-08	5.961E-08	4.413E-08	3.476E-08
W	81	7.250E-07	3.791E-07	2.184E-07	1.132E-07	8.428E-08	5.758E-08	3.954E-08	3.111E-08
WNW	103	5.801E-07	2.961E-07	1.419E-07	1.497E-07	1.239E-07	8.517E-08	5.999E-08	4.842E-08
NW	97	4.276E-07	2.163E-07	1.092E-07	7.392E-08	5.689E-08	3.989E-08	3.105E-08	2.568E-08
NNW	68	2.395E-07	1.205E-07	6.174E-08	4.146E-08	3.162E-08	2.190E-08	1.699E-08	1.397E-08
AVERAGE	2123	7.892E-07	4.139E-07	2.003E-07	1.110E-07	8.473E-08	5.904E-08	4.325E-08	3.478E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	172	2.513E-08	2.167E-08	1.902E-08	1.693E-08	1.523E-08	1.004E-08	7.394E-09	4.747E-09
NNE	410	4.880E-08	4.227E-08	3.725E-08	3.327E-08	3.002E-08	1.999E-08	1.482E-08	9.607E-09
NE	198	2.889E-08	2.498E-08	2.200E-08	1.965E-08	1.775E-08	1.191E-08	8.716E-09	5.894E-09
ENE	165	2.323E-08	2.013E-08	1.776E-08	1.588E-08	1.436E-08	9.651E-09	7.223E-09	4.760E-09
E	136	1.873E-08	1.635E-08	1.440E-08	1.286E-08	1.161E-08	7.781E-09	5.823E-09	3.848E-09
ESE	127	2.387E-08	2.064E-08	1.816E-08	1.619E-08	1.460E-08	9.688E-09	7.180E-09	4.660E-09
SE	124	2.290E-08	1.983E-08	1.749E-08	1.564E-08	1.414E-08	9.511E-09	7.138E-09	4.733E-09
SSE	124	3.931E-08	3.362E-08	2.932E-08	2.594E-08	2.322E-08	1.511E-08	1.109E-08	7.591E-09
S	120	4.409E-08	3.700E-08	3.178E-08	2.778E-08	2.463E-08	1.557E-08	1.124E-08	7.091E-09
SSW	62	3.109E-08	2.577E-08	2.193E-08	1.900E-08	1.671E-08	1.027E-08	7.288E-09	4.494E-09
SW	71	2.873E-08	2.423E-08	2.087E-08	1.826E-08	1.619E-08	1.020E-08	7.315E-09	4.550E-09
WSW	65	2.847E-08	2.398E-08	2.062E-08	1.801E-08	1.594E-08	9.957E-09	7.099E-09	4.375E-09
W	81	2.618E-08	2.226E-08	1.931E-08	1.699E-08	1.514E-08	1.137E-08	8.097E-09	5.000E-09
WNW	103	4.042E-08	3.460E-08	2.766E-08	2.447E-08	2.190E-08	1.449E-08	1.084E-08	6.828E-09
NW	97	2.155E-08	1.865E-08	1.642E-08	1.466E-08	1.321E-08	1.046E-08	7.603E-09	5.150E-09
NNW	68	1.186E-08	1.031E-08	9.123E-09	8.179E-09	7.406E-09	4.997E-09	3.959E-09	3.796E-09
AVERAGE	2123	2.896E-08	2.477E-08	2.144E-08	1.898E-08	1.700E-08	1.132E-08	8.314E-09	5.445E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	172	3.460E-09	2.706E-09	2.216E-09	1.873E-09	1.613E-09	1.790E-09	1.584E-09	
NNE	410	7.039E-09	5.522E-09	4.531E-09	3.836E-09	3.309E-09	2.911E-09	2.593E-09	
NE	198	4.385E-09	3.482E-09	2.884E-09	2.462E-09	2.139E-09	1.893E-09	1.697E-09	
ENE	165	3.531E-09	2.874E-09	2.387E-09	2.197E-09	1.900E-09	1.676E-09	1.496E-09	
E	136	2.862E-09	2.271E-09	2.270E-09	1.928E-09	1.667E-09	1.469E-09	1.311E-09	
ESE	127	3.421E-09	2.949E-09	2.417E-09	2.044E-09	1.762E-09	1.549E-09	1.378E-09	
SE	124	3.526E-09	3.511E-09	2.866E-09	2.447E-09	2.113E-09	1.859E-09	1.657E-09	
SSE	124	5.504E-09	4.290E-09	3.508E-09	2.962E-09	2.547E-09	2.233E-09	1.984E-09	
S	120	5.118E-09	3.982E-09	3.253E-09	2.747E-09	2.363E-09	2.072E-09	1.841E-09	
SSW	62	3.197E-09	2.462E-09	1.998E-09	1.677E-09	1.436E-09	1.255E-09	1.112E-09	
SW	71	3.253E-09	2.510E-09	2.038E-09	1.710E-09	1.500E-09	1.310E-09	1.159E-09	
WSW	65	3.105E-09	2.399E-09	2.018E-09	1.683E-09	1.432E-09	1.257E-09	1.108E-09	
W	81	3.558E-09	2.738E-09	2.218E-09	1.859E-09	1.671E-09	1.457E-09	1.288E-09	
WNW	103	4.914E-09	3.977E-09	3.466E-09	2.997E-09	2.554E-09	2.225E-09	1.964E-09	
NW	97	3.690E-09	2.911E-09	2.382E-09	2.162E-09	1.842E-09	1.603E-09	1.414E-09	
NNW	68	2.720E-09	2.104E-09	1.711E-09	1.437E-09	1.231E-09	1.077E-09	9.536E-10	
AVERAGE	2123	3.955E-09	3.168E-09	2.649E-09	2.251E-09	1.942E-09	1.727E-09	1.534E-09	



Table B-7

## Gamma X/Q Factors for Main Stack

BECO 4th quarter 1991 x/q tables

Stack Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) \* (SEC/MS)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	122	4.068E-07	2.080E-07	1.058E-07	7.064E-08	5.360E-08	3.667E-08	2.812E-08	2.293E-08
NNE	223	6.664E-07	3.381E-07	1.721E-07	1.156E-07	8.790E-08	6.059E-08	4.689E-08	3.850E-08
NE	192	5.966E-07	3.019E-07	1.544E-07	1.045E-07	7.951E-08	5.471E-08	4.219E-08	3.452E-08
ENE	165	5.052E-07	2.566E-07	1.298E-07	8.763E-08	6.735E-08	4.702E-08	3.651E-08	2.992E-08
E	216	6.705E-07	3.456E-07	1.700E-07	1.115E-07	8.581E-08	6.011E-08	4.672E-08	3.829E-08
ESE	223	6.554E-07	3.389E-07	1.690E-07	1.163E-07	8.889E-08	6.132E-08	4.700E-08	3.814E-08
SE	163	8.101E-07	4.234E-07	2.495E-07	1.436E-07	9.476E-08	6.500E-08	5.017E-08	3.090E-08
SSE	83	5.051E-07	2.673E-07	1.451E-07	6.779E-08	5.316E-08	3.552E-08	2.650E-08	2.105E-08
S	160	5.051E-07	2.668E-07	1.528E-07	1.114E-07	8.132E-08	5.645E-08	4.176E-08	3.196E-08
SSW	123	4.974E-07	2.547E-07	1.457E-07	1.052E-07	9.687E-08	6.810E-08	4.723E-08	3.566E-08
SW	28	3.249E-07	1.645E-07	9.458E-08	6.486E-08	4.942E-08	3.492E-08	2.646E-08	2.124E-08
WSW	20	3.710E-07	1.894E-07	9.079E-08	5.544E-08	4.275E-08	3.087E-08	2.306E-08	1.830E-08
W	17	1.592E-07	8.177E-08	4.807E-08	2.705E-08	2.045E-08	1.372E-08	9.337E-09	7.431E-09
WNW	52	2.298E-07	1.190E-07	6.528E-08	5.104E-08	4.271E-08	2.944E-08	2.056E-08	1.655E-08
NW	83	3.004E-07	1.516E-07	7.683E-08	5.220E-08	4.015E-08	2.811E-08	2.190E-08	1.799E-08
NNW	112	3.966E-07	1.996E-07	1.014E-07	6.862E-08	5.234E-08	3.628E-08	2.820E-08	2.322E-08
AVERAGE	1982	4.750E-07	2.442E-07	1.307E-07	8.450E-08	6.481E-08	4.493E-08	3.314E-08	2.666E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	122	1.931E-08	1.667E-08	1.465E-08	1.305E-08	1.175E-08	7.775E-09	5.746E-09	3.714E-09
NNE	223	3.262E-08	2.831E-08	2.499E-08	2.236E-08	2.021E-08	1.353E-08	1.008E-08	6.579E-09
NE	192	2.919E-08	2.528E-08	2.229E-08	1.992E-08	1.799E-08	1.202E-08	8.953E-09	5.853E-09
ENE	165	2.529E-08	2.189E-08	1.929E-08	1.722E-08	1.554E-08	1.032E-08	7.642E-09	4.944E-09
E	216	3.233E-08	2.794E-08	2.456E-08	2.189E-08	1.971E-08	1.300E-08	9.562E-09	6.120E-09
ESE	223	3.196E-08	2.742E-08	2.396E-08	2.123E-08	1.902E-08	1.236E-08	9.004E-09	5.690E-09
SE	163	2.585E-08	2.216E-08	1.934E-08	1.712E-08	1.533E-08	9.947E-09	7.248E-09	4.585E-09
SSE	83	1.738E-08	1.474E-08	1.275E-08	1.120E-08	9.968E-09	6.344E-09	4.588E-09	3.017E-09
S	160	2.544E-08	2.098E-08	1.775E-08	1.531E-08	1.342E-08	8.138E-09	5.711E-09	3.462E-09
SSW	123	2.838E-08	2.340E-08	1.981E-08	1.709E-08	1.499E-08	9.124E-09	6.412E-09	3.881E-09
SW	28	1.767E-08	1.510E-08	1.315E-08	1.163E-08	1.041E-08	6.767E-09	4.967E-09	3.194E-09
WSW	20	1.512E-08	1.285E-08	1.115E-08	9.830E-09	8.779E-09	5.692E-09	4.170E-09	2.672E-09
W	17	6.138E-09	5.208E-09	4.511E-09	3.967E-09	3.533E-09	2.672E-09	1.898E-09	1.166E-09
WNW	52	1.378E-08	1.177E-08	1.025E-08	9.049E-09	8.088E-09	4.911E-09	3.977E-09	2.501E-09
NW	83	1.524E-08	1.321E-08	1.166E-08	1.043E-08	9.418E-09	7.581E-09	5.530E-09	3.767E-09
NNW	112	1.974E-08	1.719E-08	1.522E-08	1.366E-08	1.239E-08	8.386E-09	6.671E-09	4.335E-09
AVERAGE	1982	2.222E-08	1.901E-08	1.658E-08	1.469E-08	1.316E-08	8.660E-09	6.385E-09	4.218E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	122	2.720E-09	2.133E-09	1.751E-09	1.484E-09	1.280E-09	1.423E-09	1.259E-09	
NNE	223	4.842E-09	3.810E-09	3.133E-09	2.658E-09	2.296E-09	2.022E-09	1.803E-09	
NE	192	4.317E-09	3.403E-09	2.803E-09	2.381E-09	2.060E-09	1.816E-09	1.622E-09	
ENE	165	3.816E-09	2.893E-09	2.530E-09	2.133E-09	1.833E-09	1.608E-09	1.428E-09	
E	216	4.447E-09	3.467E-09	3.198E-09	2.684E-09	2.297E-09	2.008E-09	1.778E-09	
ESE	223	4.107E-09	3.434E-09	2.790E-09	2.343E-09	2.006E-09	1.754E-09	1.553E-09	
SE	163	3.314E-09	3.005E-09	2.440E-09	2.049E-09	1.754E-09	1.533E-09	1.358E-09	
SSE	83	2.160E-09	1.669E-09	1.356E-09	1.139E-09	9.746E-10	8.516E-10	7.538E-10	
S	160	2.439E-09	1.865E-09	1.507E-09	1.260E-09	1.075E-09	9.367E-10	8.274E-10	
SSW	123	2.729E-09	2.083E-09	1.678E-09	1.399E-09	1.190E-09	1.034E-09	9.103E-10	
SW	28	2.329E-09	1.822E-09	1.494E-09	1.264E-09	1.127E-09	9.876E-10	8.764E-10	
WSW	20	1.954E-09	1.568E-09	1.334E-09	1.296E-09	1.116E-09	1.047E-09	9.304E-10	
W	17	8.277E-10	6.355E-10	5.146E-10	4.308E-10	3.824E-10	3.326E-10	2.933E-10	
WNW	52	1.799E-09	1.453E-09	1.261E-09	1.084E-09	9.238E-10	8.041E-10	7.093E-10	
NW	83	2.704E-09	2.132E-09	1.745E-09	1.559E-09	1.329E-09	1.158E-09	1.021E-09	
NNW	112	4.531E-09	3.498E-09	2.842E-09	2.385E-09	2.041E-09	1.782E-09	1.577E-09	
AVERAGE	1982	3.052E-09	2.429E-09	2.036E-09	1.722E-09	1.480E-09	1.319E-09	1.169E-09	

Table B-7

## Gamma X/Q Factors for Main Stack

BECO 1991 X/Q tables

Stack Release: AVERAGE GAMMA DILUTION FACTORS (MET. AND ATOMIC ENERGY 1968 FINITE CLOUD SECTOR AVERAGE MODEL) \* (SEC/M3)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	469	3.975E-07	2.042E-07	1.024E-07	6.773E-08	5.161E-08	3.558E-08	2.741E-08	2.240E-08
NNE	1163	7.952E-07	4.088E-07	2.034E-07	1.338E-07	1.021E-07	7.072E-08	5.474E-08	4.487E-08
NE	921	6.789E-07	3.513E-07	1.727E-07	1.116E-07	8.459E-08	5.775E-08	4.429E-08	3.615E-08
ENE	631	4.894E-07	2.526E-07	1.244E-07	8.083E-08	6.139E-08	4.211E-08	3.239E-08	2.647E-08
E	723	5.526E-07	2.858E-07	1.417E-07	9.228E-08	7.010E-08	4.801E-08	3.682E-08	3.000E-08
ESE	712	5.647E-07	2.970E-07	1.440E-07	9.493E-08	7.190E-08	4.903E-08	3.744E-08	3.042E-08
SE	596	1.060E-06	5.535E-07	2.692E-07	1.493E-07	9.340E-08	6.397E-08	4.900E-08	2.848E-08
SSE	463	1.201E-06	6.393E-07	3.244E-07	1.708E-07	8.712E-08	5.865E-08	4.401E-08	3.508E-08
S	477	7.271E-07	3.917E-07	1.757E-07	1.254E-07	9.332E-08	6.826E-08	5.251E-08	4.105E-08
SSW	429	7.084E-07	3.778E-07	1.710E-07	1.157E-07	1.071E-07	7.763E-08	5.423E-08	4.115E-08
SW	314	6.790E-07	3.546E-07	1.910E-07	1.139E-07	8.604E-08	5.918E-08	4.381E-08	3.454E-08
WSW	261	7.613E-07	3.956E-07	1.783E-07	9.863E-08	7.598E-08	5.402E-08	3.917E-08	3.117E-08
W	258	5.452E-07	2.838E-07	1.695E-07	8.703E-08	6.664E-08	4.546E-08	3.423E-08	2.480E-08
WNW	300	3.984E-07	2.045E-07	1.651E-07	1.014E-07	8.408E-08	5.764E-08	4.411E-08	3.283E-08
NW	322	3.528E-07	1.796E-07	9.055E-08	6.067E-08	4.634E-08	3.208E-08	2.478E-08	2.026E-08
NNW	301	2.829E-07	1.426E-07	7.245E-08	4.912E-08	3.758E-08	2.614E-08	2.033E-08	1.673E-08
AVERAGE	8340	6.371E-07	3.327E-07	1.685E-07	9.958E-08	7.620E-08	5.290E-08	3.999E-08	3.102E-08

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	469	1.849E-08	1.632E-08	1.435E-08	1.279E-08	1.152E-08	7.625E-09	5.632E-09	3.632E-09
NNE	1163	3.795E-08	3.285E-08	2.894E-08	2.584E-08	2.331E-08	1.549E-08	1.146E-08	7.416E-09
NE	921	3.051E-08	2.639E-08	2.324E-08	2.076E-08	1.873E-08	1.250E-08	9.309E-09	6.087E-09
ENE	631	2.236E-08	1.936E-08	1.707E-08	1.525E-08	1.378E-08	9.220E-09	6.876E-09	4.505E-09
E	723	2.528E-08	2.182E-08	1.917E-08	1.709E-08	1.540E-08	1.020E-08	7.554E-09	4.897E-09
ESE	712	2.553E-08	2.196E-08	1.924E-08	1.709E-08	1.535E-08	1.005E-08	7.379E-09	4.720E-09
SE	596	2.396E-08	2.065E-08	1.813E-08	1.613E-08	1.452E-08	9.589E-09	7.082E-09	4.675E-09
SSE	463	2.904E-08	2.469E-08	2.142E-08	1.886E-08	1.682E-08	1.079E-08	7.847E-09	5.254E-09
S	477	3.308E-08	2.755E-08	2.350E-08	2.041E-08	1.800E-08	1.116E-08	7.955E-09	4.933E-09
SSW	429	3.290E-08	2.723E-08	2.311E-08	1.998E-08	1.754E-08	1.073E-08	7.583E-09	4.638E-09
SW	314	2.833E-08	2.391E-08	2.060E-08	1.804E-08	1.601E-08	1.010E-08	7.258E-09	4.528E-09
WSW	261	2.543E-08	2.136E-08	1.832E-08	1.598E-08	1.412E-08	8.794E-09	6.252E-09	3.834E-09
W	258	2.047E-08	1.735E-08	1.501E-08	1.318E-08	1.172E-08	8.624E-09	6.099E-09	3.723E-09
WNW	300	2.737E-08	2.340E-08	2.039E-08	1.803E-08	1.544E-08	9.900E-09	7.294E-09	4.587E-09
NW	322	1.711E-08	1.479E-08	1.302E-08	1.161E-08	1.047E-08	8.402E-09	6.133E-09	4.220E-09
NNW	301	1.421E-08	1.235E-08	1.092E-08	9.793E-09	8.867E-09	5.977E-09	4.725E-09	4.443E-09
AVERAGE	8340	2.578E-08	2.200E-08	1.915E-08	1.693E-08	1.497E-08	9.948E-09	7.278E-09	4.749E-09

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	469	2.655E-09	2.080E-09	1.705E-09	1.443E-09	1.244E-09	1.375E-09	1.216E-09	
NNE	1163	5.426E-09	4.252E-09	3.487E-09	2.951E-09	2.543E-09	2.237E-09	1.992E-09	
NE	921	4.493E-09	3.546E-09	2.923E-09	2.485E-09	2.151E-09	1.899E-09	1.696E-09	
ENE	631	3.328E-09	2.697E-09	2.410E-09	2.043E-09	1.764E-09	1.552E-09	1.384E-09	
E	723	3.593E-09	2.823E-09	2.708E-09	2.285E-09	1.965E-09	1.725E-09	1.533E-09	
ESE	712	3.434E-09	2.912E-09	2.375E-09	2.003E-09	1.721E-09	1.509E-09	1.340E-09	
SE	596	3.348E-09	3.118E-09	2.542E-09	2.141E-09	1.838E-09	1.610E-09	1.428E-09	
SSE	463	3.782E-09	2.933E-09	2.390E-09	2.012E-09	1.726E-09	1.511E-09	1.340E-09	
S	477	3.521E-09	2.718E-09	2.209E-09	1.856E-09	1.589E-09	1.390E-09	1.231E-09	
SSW	429	3.282E-09	2.516E-09	2.035E-09	1.702E-09	1.452E-09	1.265E-09	1.118E-09	
SW	314	3.242E-09	2.505E-09	2.036E-09	1.710E-09	1.501E-09	1.311E-09	1.159E-09	
WSW	261	2.716E-09	2.101E-09	1.804E-09	1.504E-09	1.280E-09	1.137E-09	1.002E-09	
W	258	2.630E-09	2.013E-09	1.624E-09	1.356E-09	1.201E-09	1.044E-09	9.200E-10	
WNW	300	3.298E-09	2.666E-09	2.317E-09	1.996E-09	1.700E-09	1.480E-09	1.305E-09	
NW	322	3.039E-09	2.414E-09	1.986E-09	1.845E-09	1.574E-09	1.372E-09	1.212E-09	
NNW	301	3.173E-09	2.447E-09	1.987E-09	1.667E-09	1.426E-09	1.245E-09	1.102E-09	
AVERAGE	8340	3.435E-09	2.734E-09	2.284E-09	1.937E-09	1.667E-09	1.479E-09	1.311E-09	

Table B-8

## Deposition D/Q Factors for Main Stack

BECO 1st Quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Stack Release: AVERAGE DEPOSITION RATES (DEPLETED CH1/Q \* DEP. VELOCITY MODEL \* MET. AND ATOMIC ENERGY 1968)/(1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	88	5.163E-13	2.884E-11	5.992E-11	5.163E-11	5.393E-11	7.731E-11	9.237E-11	9.612E-11
NNE	177	1.306E-12	3.809E-11	3.181E-11	4.180E-11	7.578E-11	1.513E-10	1.871E-10	1.943E-10
NE	243	1.144E-12	4.968E-11	1.389E-10	1.533E-10	1.709E-10	2.245E-10	2.468E-10	2.445E-10
ENE	173	1.429E-12	6.468E-11	1.244E-10	1.166E-10	1.175E-10	1.411E-10	1.521E-10	1.500E-10
E	230	4.491E-12	1.613E-10	2.465E-10	2.416E-10	2.396E-10	2.603E-10	2.630E-10	2.497E-10
ESE	243	1.627E-11	5.089E-10	4.282E-10	3.386E-10	3.120E-10	3.173E-10	3.102E-10	2.871E-10
SE	217	2.401E-11	6.848E-10	4.211E-10	3.189E-10	3.232E-10	3.958E-10	3.089E-10	2.906E-10
SSE	131	2.083E-11	5.443E-10	4.021E-10	5.979E-10	6.638E-10	5.493E-10	4.440E-10	3.623E-10
S	75	1.373E-11	2.824E-10	4.858E-10	1.033E-09	8.991E-10	8.906E-10	7.072E-10	5.232E-10
SSW	92	1.486E-11	3.196E-10	6.166E-10	8.418E-10	1.675E-09	1.730E-09	1.094E-09	7.701E-10
SW	77	9.937E-12	1.663E-10	4.781E-10	6.244E-10	5.684E-10	4.793E-10	3.649E-10	2.854E-10
WSW	86	2.614E-11	2.355E-10	3.530E-10	5.025E-10	7.791E-10	7.767E-10	5.904E-10	4.581E-10
W	62	2.912E-11	3.635E-10	2.962E-10	2.810E-10	3.000E-10	2.769E-10	2.153E-10	1.831E-10
WNW	60	1.573E-12	2.187E-11	1.208E-10	1.628E-10	2.090E-10	2.155E-10	1.808E-10	1.623E-10
NW	62	1.117E-12	2.483E-11	5.034E-11	5.604E-11	6.220E-11	7.619E-11	7.986E-11	7.755E-11
NNW	80	9.446E-16	3.580E-12	2.888E-11	2.915E-11	3.785E-11	6.349E-11	8.053E-11	8.724E-11
AVERAGE	2096	1.040E-11	2.186E-10	4.673E-10	3.369E-10	4.055E-10	4.141E-10	3.324E-10	2.763E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	88	9.311E-11	8.846E-11	8.329E-11	7.833E-11	7.333E-11	5.255E-11	3.938E-11	2.489E-11
NNE	177	1.868E-10	1.759E-10	1.642E-10	1.532E-10	1.424E-10	1.003E-10	7.463E-11	4.694E-11
NE	243	2.298E-10	2.135E-10	1.976E-10	1.832E-10	1.698E-10	1.192E-10	8.908E-11	5.680E-11
ENE	173	1.412E-10	1.318E-10	1.227E-10	1.145E-10	1.068E-10	7.699E-11	5.883E-11	3.869E-11
E	230	2.292E-10	2.093E-10	1.913E-10	1.757E-10	1.615E-10	1.109E-10	8.189E-11	5.140E-11
ESE	243	2.588E-10	2.330E-10	2.105E-10	1.913E-10	1.742E-10	1.163E-10	8.457E-11	5.214E-11
SE	217	2.639E-10	2.381E-10	2.148E-10	1.946E-10	1.762E-10	1.129E-10	7.882E-11	4.605E-11
SSE	131	3.010E-10	2.554E-10	2.204E-10	1.926E-10	1.702E-10	1.050E-10	7.329E-11	4.763E-11
S	75	3.983E-10	3.155E-10	2.576E-10	2.147E-10	1.823E-10	9.737E-11	6.155E-11	3.128E-11
SSW	92	5.805E-10	4.567E-10	3.708E-10	3.080E-10	2.607E-10	1.374E-10	8.586E-11	4.279E-11
SW	77	2.296E-10	1.893E-10	1.593E-10	1.360E-10	1.178E-10	6.681E-11	4.403E-11	2.388E-11
WSW	86	3.649E-10	2.980E-10	2.484E-10	2.102E-10	1.803E-10	9.847E-11	6.266E-11	3.215E-11
W	62	1.564E-10	1.354E-10	1.185E-10	1.048E-10	9.333E-11	7.591E-11	4.840E-11	2.450E-11
WNW	60	1.443E-10	1.289E-10	1.159E-10	1.048E-10	9.525E-11	6.357E-11	5.230E-11	3.105E-11
NW	62	7.241E-11	6.713E-11	6.213E-11	5.764E-11	5.345E-11	5.734E-11	4.110E-11	2.886E-11
NNW	80	8.662E-11	8.379E-11	7.984E-11	7.566E-11	7.103E-11	5.002E-11	4.108E-11	4.900E-11
AVERAGE	2096	2.335E-10	2.013E-10	1.761E-10	1.559E-10	1.393E-10	9.006E-11	6.359E-11	3.925E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	88	1.742E-11	1.294E-11	1.001E-11	8.008E-12	6.935E-12	6.997E-12	5.754E-12	
NNE	177	3.294E-11	2.461E-11	1.918E-11	1.544E-11	1.263E-11	1.059E-11	8.985E-12	
NE	243	4.041E-11	3.055E-11	2.402E-11	1.951E-11	1.613E-11	1.362E-11	1.164E-11	
ENE	173	2.800E-11	2.229E-11	2.002E-11	1.618E-11	1.332E-11	1.121E-11	9.555E-12	
E	230	3.618E-11	2.714E-11	2.521E-11	2.001E-11	1.620E-11	1.344E-11	1.131E-11	
ESE	243	3.639E-11	3.010E-11	2.333E-11	1.872E-11	1.531E-11	1.282E-11	1.088E-11	
SE	217	3.125E-11	2.641E-11	2.003E-11	1.578E-11	1.270E-11	1.049E-11	8.795E-12	
SSE	131	3.122E-11	2.206E-11	1.642E-11	1.267E-11	9.981E-12	8.060E-12	6.618E-12	
S	75	1.907E-11	1.290E-11	9.364E-12	7.116E-12	5.552E-12	4.465E-12	3.659E-12	
SSW	92	2.569E-11	1.720E-11	1.241E-11	9.391E-12	7.307E-12	5.861E-12	4.797E-12	
SW	77	1.527E-11	1.072E-11	8.016E-12	6.253E-12	4.994E-12	4.098E-12	3.423E-12	
WSW	86	1.986E-11	1.366E-11	9.992E-12	7.622E-12	5.971E-12	4.611E-12	3.787E-12	
W	62	1.482E-11	9.982E-12	7.238E-12	5.513E-12	3.940E-12	2.922E-12	2.421E-12	
WNW	60	2.079E-11	1.598E-11	1.235E-11	7.003E-12	4.869E-12	3.772E-12	2.990E-12	
NW	62	1.922E-11	1.436E-11	1.098E-11	6.010E-12	4.586E-12	3.599E-12	2.879E-12	
NNW	80	2.989E-11	2.013E-11	1.451E-11	1.094E-11	8.464E-12	6.739E-12	5.466E-12	
AVERAGE	2096	2.615E-11	1.944E-11	1.519E-11	1.164E-11	9.283E-12	7.705E-12	6.435E-12	



Table B-8

## Deposition D/Q Factors for Main Stack

BECO 2nd quarter 1991 A/Q tables

SECTOR AVERAGE MODEL

Stack Release: AVERAGE DEPOSITION RATES (DEPLETED CH1/Q \* DEP. VELOCITY MODEL - MET. AND ATOMIC ENERGY 1968) \* (1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	87	2.348E-12	7.604E-11	6.861E-11	7.282E-11	8.525E-11	1.136E-10	1.244E-10	1.231E-10
NNE	353	1.811E-11	5.877E-10	4.509E-10	3.378E-10	3.140E-10	3.470E-10	3.691E-10	3.625E-10
NE	288	2.660E-11	8.200E-10	3.814E-10	2.076E-10	1.799E-10	1.900E-10	2.013E-10	1.997E-10
ENE	128	8.626E-12	2.941E-10	1.747E-10	1.141E-10	9.422E-11	8.492E-11	8.701E-11	8.776E-11
E	141	8.225E-12	2.978E-10	1.858E-10	1.204E-10	1.041E-10	1.063E-10	1.126E-10	1.125E-10
ESE	119	1.295E-11	4.591E-10	2.781E-10	1.867E-10	1.573E-10	1.446E-10	1.406E-10	1.329E-10
SE	92	1.709E-11	5.681E-10	3.747E-10	2.156E-10	1.515E-10	1.446E-10	1.057E-10	1.048E-10
SSE	125	4.254E-11	1.648E-09	9.204E-10	5.485E-10	6.823E-10	6.750E-10	6.060E-10	5.252E-10
S	122	6.101E-11	1.275E-09	7.703E-10	1.417E-09	1.299E-09	1.436E-09	1.285E-09	1.011E-09
SSW	152	1.164E-10	1.960E-09	1.007E-09	1.371E-09	2.629E-09	2.361E-09	1.494E-09	1.052E-09
SW	138	1.780E-10	1.358E-09	9.419E-10	1.266E-09	1.274E-09	1.189E-09	9.585E-10	7.809E-10
WSW	90	1.055E-10	8.942E-10	7.083E-10	6.383E-10	9.071E-10	9.157E-10	7.062E-10	5.190E-10
W	98	4.211E-11	4.929E-10	5.535E-10	6.004E-10	7.130E-10	7.222E-10	5.714E-10	4.838E-10
WNW	85	2.095E-11	2.921E-10	3.978E-10	3.650E-10	4.217E-10	4.873E-10	4.388E-10	3.983E-10
NW	80	9.639E-12	1.939E-10	1.931E-10	1.415E-10	1.245E-10	1.334E-10	1.409E-10	1.375E-10
NNW	41	5.268E-13	2.142E-11	1.487E-11	1.878E-11	2.865E-11	5.005E-11	6.008E-11	6.184E-11
AVERAGE	2139	4.192E-11	7.024E-10	4.638E-10	4.751E-10	5.729E-10	5.688E-10	4.625E-10	3.829E-10
DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	87	1.156E-10	1.073E-10	9.915E-11	9.184E-11	8.495E-11	5.898E-11	4.349E-11	2.682E-11
NNE	353	3.395E-10	3.150E-10	2.916E-10	2.702E-10	2.500E-10	1.736E-10	1.281E-10	7.915E-11
NE	288	1.901E-10	1.794E-10	1.687E-10	1.589E-10	1.489E-10	1.090E-10	8.403E-11	5.606E-11
ENE	128	8.527E-11	8.205E-11	7.830E-11	7.451E-11	7.021E-11	5.060E-11	3.826E-11	2.550E-11
E	141	1.078E-10	1.025E-10	9.700E-11	9.191E-11	8.663E-11	6.428E-11	4.978E-11	3.320E-11
ESE	119	1.230E-10	1.134E-10	1.045E-10	9.658E-11	8.911E-11	6.180E-11	4.597E-11	2.908E-11
SE	92	1.001E-10	9.478E-11	8.915E-11	8.368E-11	7.799E-11	5.445E-11	4.049E-11	2.613E-11
SSE	125	4.520E-10	3.919E-10	3.427E-10	3.018E-10	2.677E-10	1.626E-10	1.109E-10	6.588E-11
S	122	7.881E-10	6.358E-10	5.265E-10	4.443E-10	3.811E-10	2.077E-10	1.352E-10	7.006E-11
SSW	152	7.964E-10	6.282E-10	5.110E-10	4.246E-10	3.594E-10	1.033E-10	1.202E-10	6.162E-11
SW	138	6.463E-10	5.443E-10	4.648E-10	4.011E-10	3.492E-10	9.03E-11	1.248E-10	6.264E-11
WSW	90	4.410E-10	3.606E-10	3.006E-10	2.544E-10	2.181E-10	5.1E-11	7.448E-11	3.754E-11
W	98	4.087E-10	3.493E-10	3.020E-10	2.637E-10	2.323E-10	1.718E-10	1.079E-10	5.343E-11
WNW	85	3.503E-10	3.077E-10	2.483E-10	2.194E-10	1.945E-10	1.218E-10	8.203E-11	4.385E-11
NW	80	1.283E-10	1.188E-10	1.099E-10	1.019E-10	9.429E-11	9.285E-11	6.417E-11	4.110E-11
NNW	41	5.916E-11	5.535E-11	5.132E-11	4.755E-11	4.393E-11	3.000E-11	2.328E-11	2.665E-11
AVERAGE	2139	3.207E-10	2.742E-10	2.366E-10	2.079E-10	1.843E-10	1.167E-10	7.957E-11	4.617E-11
DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	87	1.837E-11	1.335E-11	1.011E-11	7.919E-12	6.325E-12	5.551E-12	4.516E-12	
NNE	353	5.457E-11	4.032E-11	3.129E-11	2.520E-11	2.071E-11	1.743E-11	1.488E-11	
NE	288	4.103E-11	3.164E-11	2.524E-11	2.075E-11	1.735E-11	1.479E-11	1.276E-11	
ENE	128	1.904E-11	1.582E-11	1.521E-11	1.248E-11	1.040E-11	8.829E-12	7.579E-12	
E	141	2.415E-11	1.843E-11	1.957E-11	1.552E-11	1.254E-11	1.036E-11	8.677E-12	
ESE	119	2.043E-11	1.700E-11	1.301E-11	1.033E-11	8.377E-12	6.961E-12	5.876E-12	
SE	92	1.868E-11	1.795E-11	1.320E-11	1.009E-11	7.876E-12	6.308E-12	5.142E-12	
SSE	125	4.143E-11	2.853E-11	2.089E-11	1.594E-11	1.245E-11	9.975E-12	8.133E-12	
S	122	4.225E-11	2.792E-11	1.971E-11	1.458E-11	1.109E-11	8.721E-12	7.017E-12	
SSW	152	3.785E-11	2.581E-11	1.886E-11	1.444E-11	1.137E-11	9.223E-12	7.633E-12	
SW	138	3.786E-11	2.542E-11	1.827E-11	1.377E-11	1.052E-11	8.385E-12	6.831E-12	
WSW	90	2.279E-11	1.536E-11	1.070E-11	8.084E-12	6.290E-12	4.850E-12	3.988E-12	
W	98	3.147E-11	2.048E-11	1.428E-11	1.045E-11	6.775E-12	4.670E-12	3.767E-12	
WNW	85	2.742E-11	1.894E-11	1.295E-11	7.712E-12	5.608E-12	4.444E-12	3.604E-12	
NW	80	2.622E-11	1.901E-11	1.395E-11	5.618E-12	4.329E-12	3.454E-12	2.817E-12	
NNW	41	1.693E-11	1.172E-11	8.595E-12	6.544E-12	5.083E-12	4.044E-12	3.267E-12	
AVERAGE	2139	3.003E-11	2.173E-11	1.662E-11	1.246E-11	9.818E-12	8.000E-12	6.656E-12	

**Table B-8**  
**Deposition D/Q Factors for Main Stack**

BECO 3rd quarter 1991 x/q tables  
Stack Release: AVERAGE DEPOSITION RATES (DEPLETED CH<sub>2</sub>O \* DEP. VELOCITY MODEL - MET. AND ATOMIC ENERGY 1968) \* (1/M<sup>2</sup>)

SECTOR AVERAGE MODEL

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	172	8.832E-12	3.069E-10	2.336E-10	1.703E-10	1.646E-10	1.921E-10	2.043E-10	1.994E-10
NNE	410	1.215E-11	3.988E-10	2.451E-10	1.701E-10	1.878E-10	2.815E-10	3.365E-10	3.483E-10
NE	198	1.088E-11	3.740E-10	2.980E-10	2.181E-10	1.728E-10	1.547E-10	1.588E-10	1.562E-10
ENE	165	1.194E-11	4.062E-10	2.345E-10	1.390E-10	1.169E-10	1.223E-10	1.329E-10	1.344E-10
E	136	6.570E-12	2.415E-10	2.366E-10	1.648E-10	1.276E-10	1.087E-10	1.087E-10	1.062E-10
ESE	127	1.098E-11	3.961E-10	2.228E-10	1.517E-10	1.420E-10	1.608E-10	1.725E-10	1.706E-10
SE	124	1.138E-11	5.738E-10	4.691E-10	2.418E-10	1.605E-10	1.635E-10	1.185E-10	1.199E-10
SSE	124	7.305E-11	2.301E-09	1.051E-09	4.524E-10	5.419E-10	5.595E-10	5.308E-10	4.786E-10
S	120	8.805E-11	1.920E-09	7.648E-10	1.067E-09	1.010E-09	1.332E-09	1.324E-09	1.096E-09
SSW	62	4.346E-11	8.742E-10	5.275E-10	7.102E-10	1.427E-09	1.756E-09	1.152E-09	8.281E-10
SW	71	1.071E-10	8.601E-10	5.557E-10	6.969E-10	7.161E-10	6.900E-10	5.594E-10	4.544E-10
WSW	65	1.293E-10	1.118E-09	4.771E-10	3.971E-10	6.431E-10	7.422E-10	6.021E-10	4.859E-10
W	81	5.031E-11	6.483E-10	4.330E-10	3.872E-10	4.555E-10	4.895E-10	3.999E-10	3.441E-10
WNW	103	7.994E-12	1.514E-10	3.315E-10	3.368E-10	4.431E-10	5.323E-10	4.835E-10	4.418E-10
NW	97	2.318E-12	4.579E-11	2.975E-11	3.516E-11	6.524E-11	1.289E-10	1.573E-10	1.621E-10
NNW	68	7.277E-16	4.316E-12	1.540E-11	1.260E-11	1.722E-11	3.865E-11	5.424E-11	6.069E-11
AVERAGE	2123	3.590E-11	6.636E-10	3.829E-10	3.344E-10	3.995E-10	4.658E-10	4.059E-10	3.491E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	172	1.860E-10	1.717E-10	1.581E-10	1.460E-10	1.347E-10	9.309E-11	6.880E-11	4.308E-11
NNE	410	3.356E-10	3.175E-10	2.979E-10	2.794E-10	2.609E-10	1.863E-10	1.402E-10	8.982E-11
NE	198	1.481E-10	1.396E-10	1.311E-10	1.234E-10	1.157E-10	8.446E-11	6.485E-11	4.296E-11
ENE	165	1.293E-10	1.228E-10	1.160E-10	1.095E-10	1.028E-10	7.490E-11	5.712E-11	3.738E-11
E	136	1.006E-10	9.498E-11	8.958E-11	8.469E-11	7.975E-11	5.923E-11	4.610E-11	3.110E-11
ESE	127	1.610E-10	1.502E-10	1.395E-10	1.297E-10	1.203E-10	8.405E-11	6.240E-11	3.923E-11
SE	124	1.159E-10	1.110E-10	1.056E-10	1.004E-10	9.503E-11	7.149E-11	5.600E-11	3.788E-11
SSE	124	4.225E-10	3.726E-10	3.293E-10	2.920E-10	2.598E-10	1.566E-10	1.050E-10	6.317E-11
S	120	8.760E-10	7.211E-10	6.068E-10	5.190E-10	4.497E-10	2.514E-10	1.578E-10	7.507E-11
SSW	62	6.311E-10	5.001E-10	4.079E-10	3.401E-10	2.885E-10	1.510E-10	9.263E-11	4.387E-11
SW	71	3.749E-10	3.150E-10	2.688E-10	2.321E-10	2.025E-10	1.167E-10	7.645E-11	3.991E-11
WSW	65	3.975E-10	3.311E-10	2.801E-10	2.398E-10	2.077E-10	1.159E-10	7.437E-11	3.799E-11
W	81	2.938E-10	2.534E-10	2.208E-10	1.942E-10	1.719E-10	1.470E-10	9.592E-11	5.051E-11
WNW	103	3.914E-10	3.463E-10	2.816E-10	2.507E-10	2.239E-10	1.460E-10	1.012E-10	5.599E-11
NW	97	1.550E-10	1.455E-10	1.355E-10	1.262E-10	1.171E-10	1.159E-10	8.104E-11	5.242E-11
NNW	68	6.113E-11	5.979E-11	5.757E-11	5.515E-11	5.239E-11	3.916E-11	3.352E-11	4.521E-11
AVERAGE	2123	2.987E-10	2.595E-10	2.266E-10	2.014E-10	1.802E-10	1.183E-10	8.208E-11	4.910E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	172	3.024E-11	2.262E-11	1.764E-11	1.422E-11	1.168E-11	1.247E-11	1.025E-11	
NNE	410	6.401E-11	4.850E-11	3.826E-11	3.117E-11	2.586E-11	2.191E-11	1.880E-11	
NE	198	3.134E-11	2.411E-11	1.917E-11	1.572E-11	1.311E-11	1.115E-11	9.591E-12	
ENE	165	2.702E-11	2.160E-11	1.982E-11	1.604E-11	1.322E-11	1.113E-11	9.494E-12	
E	136	2.286E-11	1.764E-11	1.951E-11	1.570E-11	1.285E-11	1.074E-11	9.097E-12	
ESE	127	2.750E-11	2.372E-11	1.818E-11	1.442E-11	1.165E-11	9.616E-12	8.047E-12	
SE	124	2.766E-11	3.128E-11	2.361E-11	1.842E-11	1.463E-11	1.188E-11	9.785E-12	
SSE	124	3.966E-11	2.725E-11	1.985E-11	1.505E-11	1.167E-11	9.306E-12	7.561E-12	
S	120	4.274E-11	2.788E-11	1.999E-11	1.517E-11	1.186E-11	9.553E-12	7.854E-12	
SSW	62	2.463E-11	1.553E-11	1.068E-11	7.805E-12	5.912E-12	4.648E-12	3.746E-12	
SW	71	2.421E-11	1.600E-11	1.123E-11	8.260E-12	6.066E-12	4.720E-12	3.769E-12	
WSW	65	2.286E-11	1.512E-11	1.010E-11	7.409E-12	5.609E-12	4.116E-12	3.311E-12	
W	81	3.106E-11	2.083E-11	1.482E-11	1.100E-11	6.652E-12	4.422E-12	3.600E-12	
WNW	103	3.602E-11	2.656E-11	2.013E-11	1.124E-11	7.898E-12	6.174E-12	4.936E-12	
NW	97	3.351E-11	2.376E-11	1.742E-11	8.193E-12	6.200E-12	4.850E-12	3.872E-12	
NNW	68	2.826E-11	1.924E-11	1.390E-11	1.044E-11	8.015E-12	6.317E-12	5.066E-12	
AVERAGE	2123	3.210E-11	2.385E-11	1.839E-11	1.377E-11	1.081E-11	8.938E-12	7.424E-12	

Table B-8

## Deposition D/Q Factors for Main Stack

BECO 4th quarter 1991 x/q tables

SECTOR AVERAGE MODEL

Stack Release: AVERAGE DEPOSITION RATES (DEPLETED CH1/O \* DEP. VELOCITY MODEL - MET. AND ATOMIC ENERGY 1968) \* (1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	122	2.074E-12	8.891E-11	1.352E-10	1.159E-10	1.123E-10	1.321E-10	1.423E-10	1.401E-10
NNE	223	1.774E-12	8.140E-11	1.384E-10	1.068E-10	1.083E-10	1.615E-10	1.993E-10	2.105E-10
NE	192	5.463E-13	3.932E-11	1.110E-10	1.033E-10	1.050E-10	1.435E-10	1.701E-10	1.767E-10
ENE	165	2.110E-12	6.880E-11	7.333E-11	8.148E-11	9.756E-11	1.454E-10	1.732E-10	1.796E-10
E	216	9.422E-12	2.805E-10	1.529E-10	1.266E-10	1.552E-10	2.282E-10	2.596E-10	2.606E-10
ESE	223	8.489E-12	2.790E-10	2.409E-10	2.341E-10	2.585E-10	3.111E-10	3.156E-10	2.962E-10
SE	163	1.126E-11	4.712E-10	4.403E-10	3.327E-10	3.011E-10	3.443E-10	2.630E-10	2.436E-10
SSE	83	1.640E-11	4.685E-10	3.207E-10	3.355E-10	4.125E-10	3.832E-10	3.315E-10	2.813E-10
S	160	2.386E-11	4.609E-10	1.005E-09	1.449E-09	1.161E-09	1.061E-09	8.849E-10	6.631E-10
SSW	123	6.083E-12	1.482E-10	6.906E-10	9.587E-10	1.896E-09	1.716E-09	1.076E-09	7.540E-10
SW	28	5.666E-12	5.276E-11	1.047E-10	1.929E-10	2.081E-10	2.521E-10	2.458E-10	2.262E-10
WSW	20	1.370E-11	1.309E-10	1.141E-10	1.343E-10	2.024E-10	2.258E-10	1.852E-10	1.518E-10
W	17	3.603E-12	5.704E-11	1.320E-10	1.129E-10	1.146E-10	1.073E-10	8.628E-11	7.525E-11
WNW	52	1.309E-11	1.514E-10	1.293E-10	1.331E-10	1.800E-10	2.062E-10	1.783E-10	1.596E-10
NW	83	1.154E-12	1.804E-11	1.946E-11	2.637E-11	4.047E-11	7.734E-11	9.845E-11	1.048E-10
NNW	112	1.926E-15	7.593E-12	2.422E-11	1.877E-11	2.484E-11	5.845E-11	8.452E-11	9.620E-11
AVERAGE	1982	7.452E-12	1.753E-10	2.395E-10	2.789E-10	3.361E-10	3.484E-10	2.934E-10	2.512E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	122	1.316E-10	1.224E-10	1.135E-10	1.056E-10	9.809E-11	6.960E-11	5.247E-11	3.380E-11
NNE	223	2.055E-10	1.966E-10	1.862E-10	1.761E-10	1.656E-10	1.208E-10	9.181E-11	5.938E-11
NE	192	1.712E-10	1.630E-10	1.541E-10	1.455E-10	1.368E-10	7.694E-11	5.069E-11	3.069E-11
ENE	165	1.733E-10	1.641E-10	1.541E-10	1.447E-10	1.352E-10	9.648E-11	7.226E-11	4.576E-11
E	216	2.463E-10	2.292E-10	2.122E-10	1.967E-10	1.819E-10	1.261E-10	9.302E-11	5.782E-11
ESE	223	2.689E-10	2.430E-10	2.200E-10	2.003E-10	1.827E-10	1.226E-10	8.931E-11	5.505E-11
SE	163	2.193E-10	1.969E-10	1.774E-10	1.607E-10	1.460E-10	9.678E-11	7.012E-11	4.305E-11
SSE	83	2.393E-10	2.061E-10	1.795E-10	1.577E-10	1.399E-10	8.585E-11	5.941E-11	3.639E-11
S	160	5.055E-10	4.021E-10	3.301E-10	2.774E-10	2.375E-10	1.322E-10	8.737E-11	4.846E-11
SSW	123	5.668E-10	4.458E-10	3.626E-10	3.020E-10	2.567E-10	1.392E-10	8.968E-11	4.739E-11
SW	28	2.019E-10	1.791E-10	1.584E-10	1.400E-10	1.239E-10	7.007E-11	4.303E-11	2.022E-11
WSW	20	1.270E-10	1.088E-10	9.506E-11	8.407E-11	7.530E-11	4.971E-11	3.608E-11	2.098E-11
W	17	6.533E-11	5.723E-11	5.056E-11	4.500E-11	4.031E-11	3.556E-11	2.285E-11	1.160E-11
WNW	52	1.405E-10	1.243E-10	1.107E-10	9.912E-11	8.917E-11	5.503E-11	4.268E-11	2.351E-11
NW	83	1.025E-10	9.815E-11	9.292E-11	8.768E-11	8.224E-11	6.759E-11	6.192E-11	4.096E-11
NNW	112	7.808E-11	9.693E-11	9.417E-11	9.089E-11	8.691E-11	6.650E-11	5.847E-11	7.477E-11
AVERAGE	1982	2.164E-10	1.896E-10	1.682E-10	1.508E-10	1.361E-10	9.090E-11	6.546E-11	4.186E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	122	2.409E-11	1.816E-11	1.421E-11	1.147E-11	9.416E-12	9.805E-12	8.066E-12	
NNE	223	4.224E-11	3.177E-11	2.481E-11	2.000E-11	1.641E-11	1.375E-11	1.166E-11	
NE	192	3.662E-11	2.787E-11	2.195E-11	1.781E-11	1.469E-11	1.236E-11	1.052E-11	
ENE	165	3.212E-11	2.469E-11	2.083E-11	1.652E-11	1.336E-11	1.107E-11	9.295E-12	
E	216	4.023E-11	2.986E-11	2.674E-11	2.105E-11	1.691E-11	1.392E-11	1.164E-11	
ESE	223	3.834E-11	3.173E-11	2.440E-11	1.944E-11	1.579E-11	1.313E-11	1.107E-11	
SE	163	2.999E-11	2.800E-11	2.124E-11	1.668E-11	1.335E-11	1.094E-11	9.103E-12	
SSE	83	2.347E-11	1.647E-11	1.224E-11	9.455E-12	7.464E-12	6.045E-12	4.979E-12	
S	160	3.170E-11	2.275E-11	1.737E-11	1.377E-11	1.116E-11	9.270E-12	7.820E-12	
SSW	123	2.987E-11	2.078E-11	1.545E-11	1.197E-11	9.487E-12	7.716E-12	6.389E-12	
SW	28	1.182E-11	7.814E-12	5.556E-12	4.136E-12	3.121E-12	2.437E-12	1.940E-12	
WSW	20	1.302E-11	8.355E-12	3.986E-12	2.768E-12	2.031E-12	1.414E-12	1.111E-12	
W	17	6.878E-12	4.468E-12	3.097E-12	2.246E-12	1.369E-12	8.900E-13	7.125E-13	
WNW	52	1.483E-11	1.043E-11	7.566E-12	4.825E-12	3.584E-12	2.883E-12	2.366E-12	
NW	83	2.667E-11	1.925E-11	1.439E-11	7.925E-12	6.075E-12	4.797E-12	3.860E-12	
NNW	112	4.674E-11	3.197E-11	2.325E-11	1.759E-11	1.360E-11	1.078E-11	8.692E-12	
AVERAGE	1982	2.804E-11	2.090E-11	1.607E-11	1.235E-11	9.864E-12	8.200E-12	6.827E-12	



Table B-8

## Deposition D/Q Factors for Main Stack

BECO 1991 x/q tables

SECTOR AVERAGE MODEL

Stack Release: AVERAGE DEPOSITION RATES (DEPLETED CH1/Q \* DEP. VELOCITY MODEL - MET. AND ATOMIC ENERGY 1968) - (1/M2)

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		.12	.25	.50	.75	1.00	1.50	2.00	2.50
N	469	3.473E-12	1.260E-10	1.242E-10	1.025E-10	1.040E-10	1.289E-10	1.410E-10	1.398E-10
NNE	1163	8.486E-12	2.812E-10	2.189E-10	1.658E-10	1.731E-10	2.371E-10	2.747E-10	2.805E-10
NE	921	1.001E-11	3.273E-10	2.350E-10	1.718E-10	1.580E-10	1.786E-10	1.945E-10	1.944E-10
ENE	631	6.111E-12	2.114E-10	1.532E-10	1.133E-10	1.066E-10	1.229E-10	1.355E-10	1.371E-10
E	723	7.190E-12	2.450E-10	2.062E-10	1.636E-10	1.563E-10	1.746E-10	1.843E-10	1.806E-10
ESE	712	1.222E-11	4.128E-10	2.929E-10	2.273E-10	2.163E-10	2.317E-10	2.329E-10	2.200E-10
SE	596	1.872E-11	6.548E-10	4.418E-10	2.939E-10	2.415E-10	2.712E-10	2.704E-10	1.883E-10
SSE	463	3.790E-11	1.211E-09	6.859E-10	4.858E-10	5.778E-10	5.447E-10	4.809E-10	4.144E-10
S	477	4.717E-11	9.932E-10	7.531E-10	1.239E-09	1.092E-09	1.108E-09	1.054E-09	8.272E-10
SSW	429	4.645E-11	8.485E-10	7.116E-10	9.719E-10	1.909E-09	1.895E-09	1.207E-09	8.534E-10
SW	314	7.707E-11	6.257E-10	5.413E-10	7.048E-10	7.014E-10	6.608E-10	5.384E-10	4.414E-10
WSW	261	6.631E-11	5.750E-10	4.286E-10	4.230E-10	6.403E-10	6.727E-10	5.268E-10	4.164E-10
W	258	3.178E-11	3.958E-10	3.661E-10	3.474E-10	4.014E-10	4.049E-10	3.553E-10	2.756E-10
WNW	300	1.091E-11	1.549E-10	2.526E-10	2.534E-10	3.242E-10	3.722E-10	3.590E-10	3.005E-10
NW	322	3.617E-12	7.192E-11	7.436E-11	6.559E-11	7.379E-11	1.046E-10	1.196E-10	1.209E-10
NNW	301	1.360E-13	9.296E-12	1.924E-11	1.981E-11	2.715E-11	5.252E-11	6.954E-11	7.610E-11
AVERAGE	8340	2.422E-11	4.465E-10	3.441E-10	3.593E-10	4.315E-10	4.525E-10	3.844E-10	3.167E-10

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		3.00	3.50	4.00	4.50	5.00	7.50	10.00	15.00
N	469	1.317E-10	1.225E-10	1.136E-10	1.055E-10	9.781E-11	6.857E-11	5.103E-11	3.213E-11
NNE	1163	2.683E-10	2.525E-10	2.361E-10	2.208E-10	2.057E-10	1.459E-10	1.091E-10	6.907E-11
NE	921	1.849E-10	1.739E-10	1.629E-10	1.528E-10	1.428E-10	1.032E-10	7.873E-11	5.164E-11
ENE	631	1.314E-10	1.244E-10	1.171E-10	1.102E-10	1.032E-10	7.432E-11	5.631E-11	3.665E-11
E	723	1.694E-10	1.575E-10	1.462E-10	1.367E-10	1.263E-10	8.940E-11	6.719E-11	4.309E-11
ESE	712	2.015E-10	1.836E-10	1.675E-10	1.535E-10	1.407E-10	9.560E-11	7.015E-11	4.363E-11
SE	596	1.736E-10	1.592E-10	1.459E-10	1.341E-10	1.232E-10	8.353E-11	6.111E-11	3.815E-11
SSE	463	3.560E-10	3.085E-10	2.698E-10	2.376E-10	2.108E-10	1.283E-10	8.770E-11	5.360E-11
S	477	6.453E-10	5.215E-10	4.327E-10	3.659E-10	3.145E-10	1.737E-10	1.111E-10	5.645E-11
SSW	429	6.455E-10	5.091E-10	4.143E-10	3.447E-10	2.921E-10	1.548E-10	9.731E-11	4.899E-11
SW	314	3.669E-10	3.099E-10	2.653E-10	2.294E-10	2.002E-10	1.135E-10	7.275E-11	3.703E-11
WSW	261	3.362E-10	2.775E-10	2.334E-10	1.991E-10	1.720E-10	9.637E-11	6.236E-11	3.266E-11
W	258	2.345E-10	2.017E-10	1.755E-10	1.541E-10	1.364E-10	1.090E-10	6.970E-11	3.548E-11
WNW	300	2.655E-10	2.347E-10	2.081E-10	1.854E-10	1.682E-10	1.004E-10	7.009E-11	3.889E-11
NW	322	1.149E-10	1.077E-10	1.004E-10	9.357E-11	8.696E-11	8.854E-11	6.213E-11	4.087E-11
NNW	301	7.581E-11	7.351E-11	7.026E-11	6.685E-11	6.310E-11	4.604E-11	3.872E-11	4.843E-11
AVERAGE	8340	2.688E-10	2.324E-10	2.037E-10	1.806E-10	1.596E-10	1.045E-10	7.284E-11	4.415E-11

DOWNWIND SECTOR	NO. OBS	DISTANCE FROM RELEASE POINT (MILES)							
		20.00	25.00	30.00	34.95	40.00	45.00	50.00	
N	469	2.251E-11	1.675E-11	1.298E-11	1.039E-11	8.475E-12	6.687E-12	7.131E-12	
NNE	1163	4.861E-11	3.642E-11	2.848E-11	2.303E-11	1.897E-11	1.598E-11	1.363E-11	
NE	921	3.736E-11	2.855E-11	2.261E-11	1.846E-11	1.533E-11	1.299E-11	1.114E-11	
ENE	631	2.643E-11	2.103E-11	1.693E-11	1.528E-11	1.256E-11	1.054E-11	8.971E-12	
E	723	3.067E-11	2.314E-11	2.268E-11	1.801E-11	1.458E-11	1.208E-11	1.015E-11	
ESE	712	3.050E-11	2.550E-11	1.963E-11	1.564E-11	1.271E-11	1.057E-11	8.920E-12	
SE	596	2.681E-11	2.586E-11	1.947E-11	1.520E-11	1.211E-11	9.878E-12	8.183E-12	
SSE	463	3.414E-11	2.371E-11	1.745E-11	1.335E-11	1.045E-11	8.389E-12	6.857E-12	
S	477	3.404E-11	2.291E-11	1.663E-11	1.266E-11	9.912E-12	7.993E-12	6.577E-12	
SSW	429	2.953E-11	1.983E-11	1.435E-11	1.089E-11	8.511E-12	6.855E-12	5.633E-12	
SW	314	2.252E-11	1.514E-11	1.088E-11	8.188E-12	6.238E-12	4.961E-12	4.033E-12	
WSW	261	1.975E-11	1.321E-11	8.774E-12	6.533E-12	5.024E-12	3.786E-12	3.081E-12	
W	258	2.134E-11	1.412E-11	9.989E-12	7.397E-12	4.746E-12	3.269E-12	2.660E-12	
WNW	300	2.495E-11	1.811E-11	1.335E-11	7.745E-12	5.524E-12	4.344E-12	3.494E-12	
NW	322	2.642E-11	1.911E-11	1.419E-11	6.920E-12	5.285E-12	4.165E-12	3.349E-12	
NNW	301	3.016E-11	2.056E-11	1.491E-11	1.127E-11	8.703E-12	6.902E-12	5.567E-12	
AVERAGE	8340	2.911E-11	2.150E-11	1.658E-11	1.256E-11	9.946E-12	8.412E-12	6.836E-12	