

**Omaha Public Power District**  
1623 Harney Omaha, Nebraska 68102 2247  
402/536-4000

August 30, 1990  
LIC-90-0743

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

Reference: Docket No. 50-285

Gentlemen:

SUBJECT: Semi-Annual Radioactive Effluent Release Report

Please find enclosed the Semi-Annual "Radioactive Effluent Release Report" for the period of January 1, 1990 through June 30, 1990 as required by Technical Specification 5.9.4.a and 10 CFR 50.36a.

If you should have any questions, please contact me.

Sincerely,

*W. G. Gates*

W. G. Gates  
Division Manager  
Nuclear Operations

WGG/sel

Enclosures:

c: LeBoeuf, Lamb, Leiby & MacRae  
A. Bournia, NRC Project Manager  
R. D. Martin, NRC Regional Administrator, Region IV  
R. P. Mullikin, NRC Senior Resident Inspector  
M. Mehrhoff, University of Iowa

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PDR ADOCK 05000285  
R PDC

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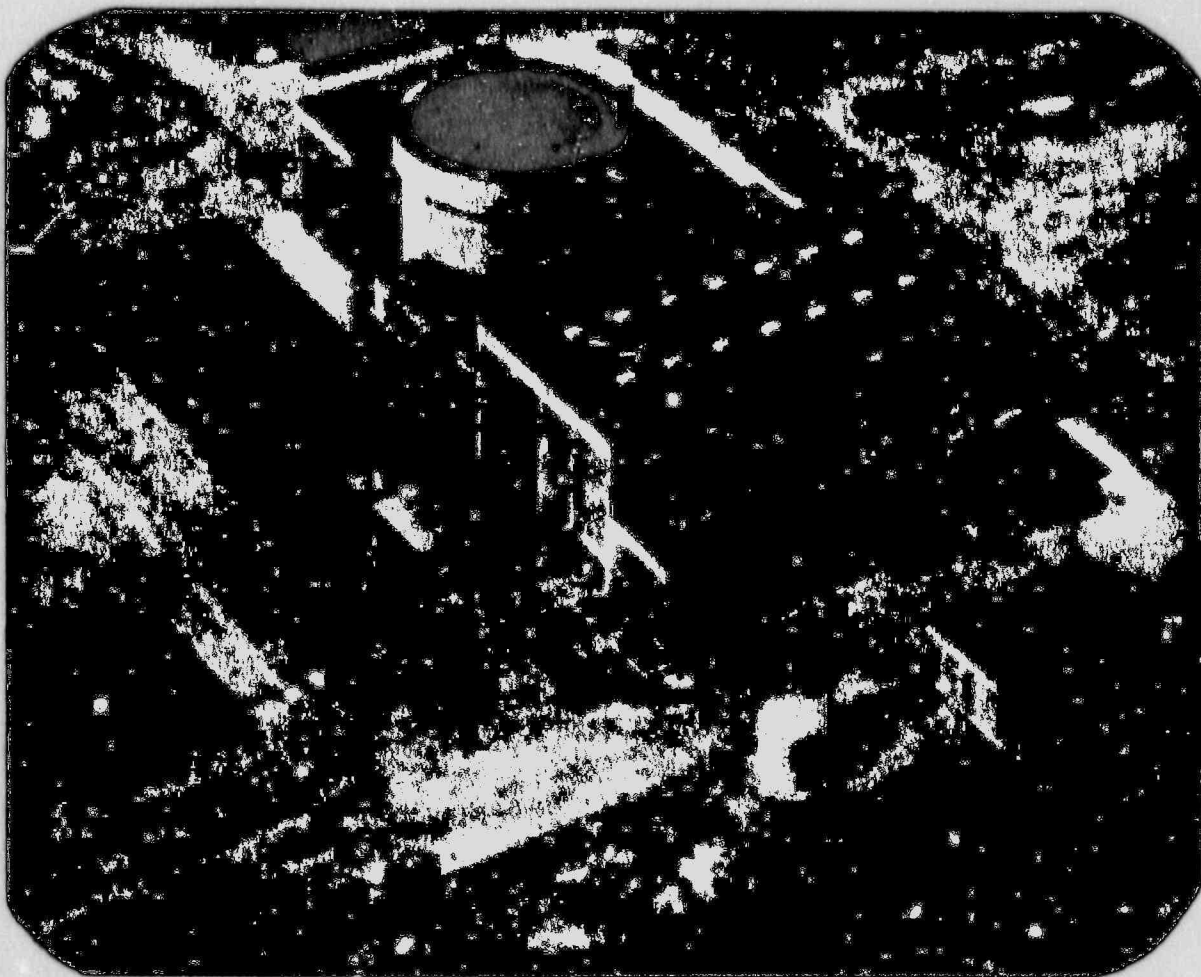




**Omaha Public Power District  
Fort Calhoun Station Unit No. 1**

**Semi Annual Report  
For  
Technical Specification  
Section 5.9.4**

**January 1, 1990 to June 30, 1990 inclusive**





# Memorandum

Date: August 24, 1990

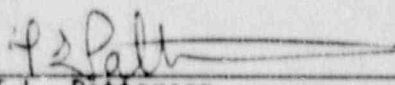
RS-CE-90-056

From: T.L. Patterson

To: Distribution

SUBJECT: Semi-Annual Report for Technical Specification Section 5.9.4.a  
January 1, 1990 to June 30, 1990

Attached you will find a copy of the 1990 Semi-Annual Report for January 1, 1990 thru June 30, 1990.

  
T.L. Patterson  
Manager - Fort Calhoun Station

GRP/KS/cas  
attachment

**PRC RECOMMENDS  
APPROVAL**

**AUG 20 1990**

**PRC MTG. MINUTES**

## Distribution:

S.K. Gambhir (7E/EP1)  
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## INTRODUCTION

This report is submitted in accordance with Sections 5.9.1.b and 5.9.4.a of the Technical Specifications of Fort Calhoun Station Unit No. 1, Facility Operating License DPR-40.

This report covers the period of January 1, 1990 thru June 30, 1990 for the Semi-Annual Effluent Report for Technical Specification 5.9.4.a. The Effluent Report is presented in the format outlined in Regulatory Guide 1.12, Revision 1.

In addition, this report provides the results of quarterly dose calculations performed in accordance with Technical Specification Sections 2.9.1(1)b and 2.9.1(2)b. Results are presented by quarter for the period January 1, 1990 thru June 30, 1990.

Further, description of any changes made during the preceding six months to the Offsite Dose Calculation Manual and/or the Process Control Program for the Fort Calhoun Station are presented.

  
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T. L. Patterson  
Manager - Fort Calhoun Station



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SECTION I

QUARTERLY DOSES FROM EFFLUENTS

Technical Specifications 2.9.1(1)b and 2.9.1(2)b

January 1, 1990 - June 30, 1990

Quarterly Dose Calculation Results  
January 1, 1990 through June 30, 1990

With the implementation of the Fort Calhoun Station Radiological Effluent Technical Specifications (RETS) on October 1, 1985, radiation doses in the unrestricted area from liquid and gaseous effluents must be calculated on a quarterly basis in accordance with Sections 2.9.1(1)b and 2.9.1(2)b. These calculations are performed to ensure the annual dose limits delineated in Appendix I of 10 CFR Part 50 and implemented by the RETS are not exceeded. If the results of the quarterly calculations exceed fifty percent (50%) of the annual limits of Appendix I, actions are taken to reduce effluents so that resultant doses do not exceed the annual limits during the remainder of the year and a special report is submitted to the NRC.

This section presents the results of the quarterly dose calculations performed since January 1, 1990. Details are shown in Tables on Pages I-3 through I-4 as to the types, sources and resultant doses from the effluents, annual limits and a comparison to the annual limits.

As can be seen by review of the quarterly calculational results, OPPD is in compliance with the referenced Technical Specifications. The quarterly totals are well below the 50% annual dose acceptance criteria. In addition, the summation of the quarterly totals shows OPPD to be less than the annual limits and in compliance with the regulations and Technical Specifications.

# QUARTERLY CUMULATIVE DOSE CONTRIBUTIONS FROM RADIOACTIVE EFFLUENTS

FIRST QUARTER, 1990

<u>I. LIQUID EFFLUENTS:</u>	<u>TOTAL BODY DOSE (mREM)</u>	<u>CRITICAL ORGAN DOSE (mREM)</u>
Monitor/Hotel Tank:	4.41E-01	6.42E-01
Steam Generator:	9.83E-05	0.00E-01
Totals:	4.41E-01	6.42E-01
T.S. 2.9.1.A. Annual Objective:	3.00E+00	1.00E+01
<u>Percent of TS Annual Objective:</u>		
This Quarter:	14.70%	6.42%
Year to Date:	14.70%	6.42%
<u>II GASEOUS EFFLUENTS:</u>	<u>TOTAL BODY GAMMA DOSE (mREM)</u>	<u>TOTAL BODY BETA DOSE (mREM)</u>
A. Noble Gas Air Dose:	1.48E-02	4.28E-02
T.S. 2.9.1.A. Annual Objective:	1.00E+01	2.00E+01
<u>Percent of TS Annual Objective:</u>		
This Quarter:	0.15%	0.21%
Year to Date:	0.15%	0.21%
<u>B. I-131, H-3, and Particulates with Half-Lives &gt; 8 Days</u>	<u>TOTAL BODY DOSE (mREM)</u>	<u>CRITICAL ORGAN DOSE (Thyroid, mREM)</u>
*Inhalation:	5.09E-05	4.35E-04
*Ground and Food:	3.77E-04	8.18E-02
Totals:	4.28E-04	8.22E-02
T.S. 2.9.1.B. Annual Objective:	1.50E+01	1.50E+01
<u>Percent of TS Annual Objective:</u>		
This Quarter:	0.00%	0.55%
Year to Date:	0.00%	0.55%

\* Highest of Infant or Child Dose Factors

# QUARTERLY CUMULATIVE DOSE CONTRIBUTIONS FROM RADIOACTIVE EFFLUENTS

SECOND QUARTER, 1990

<u>I. LIQUID EFFLUENTS:</u>	<u>TOTAL BODY DOSE (mREM)</u>	<u>CRITICAL ORGAN DOSE (mREM)</u>
Monitor/Hotel Tank:	6.96E-02	1.02E-01
Steam Generator:	<u>1.33E-01</u>	<u>0.00E-01</u>
Totals:	6.97E-02	1.02E-01
T.S. 2.9.1.A. Annual Objective:	3.00E+00	1.00E+01
<u>Percent of TS Annual Objective:</u>		
This Quarter:	2.32%	1.02%
Year to Date:	17.02%	7.44%
<u>II. GASEOUS EFFLUENTS:</u>	<u>TOTAL BODY GAMMA DOSE (mREM)</u>	<u>TOTAL BODY BETA DOSE (mREM)</u>
A. Noble Gas Air Dose:	4.95E-04	1.15E-03
T.S. 2.9.1.B. Annual Objective:	1.00E+01	2.00E+01
<u>Percent of TS Annual Objective:</u>		
This Quarter:	0.00%	0.01%
Year to Date:	0.15%	0.22%
<u>B. I-131, H-3, and Particulates with Half-Lives &gt; 8 Days</u>	<u>TOTAL BODY DOSE (mREM)</u>	<u>CRITICAL ORGAN DOSE (Thyroid, mREM)</u>
*Inhalation:	1.99E-05	7.92E-05
*Ground and Food:	<u>1.31E-04</u>	<u>1.27E-02</u>
Totals:	1.51E-04	1.28E-02
T.S. 2.9.1.B. Annual Objective:	1.50E+01	1.50E+01
<u>Percent of TS Annual Objective:</u>		
This Quarter:	0.00%	0.09%
Year to Date:	0.00%	0.63%

\* Highest of infant of child dose factors

SECTION II  
ANNUAL OCCUPATIONAL EXPOSURE REPORT

Technical Specifications 5.9.1.b

Not Applicable to this Report



SECTION III

RADIOACTIVE EFFLUENT RELEASES - GASEOUS EFFLUENTS

Technical Specifications (5.9.4.a)

Table 1A	Gaseous Effluents - Summation of All Releases
Table 1B	Not Applicable
Table 1C	Gaseous Effluents - Summation of All Releases

January 1, 1990 - June 30, 1990

## Radioactive Effluent Releases - First and Second Quarters

### GASEOUS EFFLUENTS

Radioactive gaseous releases for the reporting period totaled 259 Curies of inert gases. Over the first and second quarters of the reporting period, the gross gaseous activity release rates were  $3.26\text{E}+01$   $\mu\text{Ci}/\text{Sec.}$  and  $7.74\text{E}-01$   $\mu\text{Ci}/\text{Sec.}$ , respectively.

Radioactive halogens and particulates with half-lives greater than eight days released during the reporting period totaled  $3.50\text{E}-04$  Curies. Over the first and second quarters of the reporting period, the halogen release rates were  $3.90\text{E}-05$   $\mu\text{Ci}/\text{Sec.}$  and  $5.96\text{E}-06$   $\mu\text{Ci}/\text{Sec.}$ , respectively. Over the first quarter, the particulate release rate for isotopes with half lives greater than 8 days fell below the analytical Lower Limit of Detection (LLD) and is reported as "0". The release rate for particulates with half lives greater than 8 days for the second quarter was  $6.64\text{E}-09$   $\mu\text{Ci}/\text{Sec.}$

Radioactive tritium released during the reporting period totaled  $3.14\text{E}+00$  Curies. Gross alpha radioactivity released during the reporting period totaled  $3.56\text{E}-06$  Curies.

TABLE 1A  
EFFLUENT AND WASTE DISPOSAL REPORT  
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

SEMIANNUAL FOR JAN THRU JUN 90									
1 QUARTER					2 QUARTER				
NUCLIDES IN CURIES	CONT	DECAY	RM060	TOTAL	CONT	DECAY	RM060	TOTAL	
A. FISSION/ACTIVATION GASES									
TOTAL RELEASE	CI	2.53E+02	0.00E+00	0.00E+00	2.53E+02	5.36E+00	7.24E-01	0.00E+00	6.01E+00
AVG RELEASE RATE FOR PERIOD	UCI/SEC	3.26E+01	0.00E+00	0.00E+00	3.26E+01	6.82E-01	9.21E-02	0.00E+00	7.74E-01
PERCENT OF LIMIT	%								
TECH SPEC = NONE									
B. IODINES									
TOTAL RELEASE	CI	0.00E+00	0.00E+00	3.03E-04	3.03E-04	0.00E+00	0.00E+00	4.69E-05	4.69E-05
IODINE - 131									
AVG RELEASE RATE FOR PERIOD	UCI/SEC	0.00E+00	0.00E+00	3.90E-05	3.90E-05	0.00E+00	0.00E+00	5.96E-06	5.96E-06
PERCENT OF LIMIT	%								
TECH SPEC = NONE									
C. PARTICULATES									
PARTICULATES WITH HALF LIVES .GT. 8 DAYS	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.22E-08	5.22E-08
AVG RELEASE RATE FOR PERIOD	UCI/SEC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.64E-09	6.64E-09
PERCENT OF LIMIT	%								
TECH SPEC = NONE									
GROSS ALPHA RADIOACTIVITY	CI	0.00E+00	0.00E+00	1.30E-06	1.30E-06	0.00E+00	0.00E+00	2.26E-06	2.26E-06
D. TRITIUM									
TOTAL RELEASE	CI	2.25E+00	0.00E+00	0.00E+00	2.25E+00	8.87E-01	0.00E+00	0.00E+00	8.87E-01
AVG RELEASE RATE FOR PERIOD	UCI/SEC	2.89E-01	0.00E+00	0.00E+00	2.89E-01	1.13E-01	0.00E+00	0.00E+00	1.13E-01
PERCENT OF LIMIT	%								
TECH SPEC = NONE									

TABLE 1C

## EFFLUENT AND WASTE DISPOSAL REPORT

## GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

SEMIANNUAL FOR JAN THRU JUN 90

NUCLIDES IN Curies	1 QUARTER				2 QUARTER			
	CONT	DECAY	RM060	TOTAL	CONT	DECAY	RM060	TOTAL
<b>FISSION GASES</b>								
XENON-133	2.50E+02	0.00E+00	0.00E+00	2.50E+02	5.06E+00	2.02E-01	0.00E+00	5.26E+00
KRYPTON-85M	4.24E-03	0.00E+00	0.00E+00	4.24E-03	6.02E-03	0.00E+00	0.00E+00	6.02E-03
XENON-131M	9.96E-01	0.00E+00	0.00E+00	9.96E-01	0.00E+00	4.16E-02	0.00E+00	4.16E-02
KRYPTON-88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XENON-133M	1.42E+00	0.00E+00	0.00E+00	1.42E+00	4.99E-02	0.00E+00	0.00E+00	4.99E-02
XENON-135	8.22E-01	0.00E+00	0.00E+00	8.22E-01	1.46E-01	0.00E+00	0.00E+00	1.46E-01
KRYPTON-87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XENON-138	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
KRYPTON-85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-01	0.00E+00	4.80E-01
XENON-135M	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ARGON-41	3.39E-01	0.00E+00	0.00E+00	3.39E-01	1.07E-01	0.00E+00	0.00E+00	1.07E-01
TOTAL FOR PERIOD	2.53E+02	0.00E+00	0.00E+00	2.53E+02	5.36E+00	7.24E-01	0.00E+00	6.09E+00
<b>IODINES</b>								
IODINE-131 CTD.	0.00E+00	0.00E+00	3.03E-04	3.03E-04	0.00E+00	0.00E+00	4.69E-05	4.69E-05
IODINE-133 CTD.	0.00E+00	0.00E+00	1.59E-04	1.59E-04	0.00E+00	0.00E+00	6.84E-05	6.84E-05
IODINE-135 CTD.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	0.00E+00	0.00E+00	4.62E-04	4.62E-04	0.00E+00	0.00E+00	1.15E-04	1.15E-04
<b>PARTICULATES</b>								
STRONTIUM-89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
STRONTIUM-90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.22E-08	5.22E-08
IODINE-131 PRF.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINE-133 PRF.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BARIUM-140	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CESIUM-137	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CESIUM-134	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
COBALT-58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MANGANESE-54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
COBALT-50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINE-135 PRF.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
LANTHANUM-140	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CERIUM-144	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CERIUM-141	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MOLYBDENUM-99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IRON-59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ZINC-65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.22E-08	5.22E-08
<b>TRITIUM &amp; GROSS ALPHA</b>								
TRITIUM	2.25E+00	0.00E+00	0.00E+00	2.25E+00	8.87E-01	0.00E+00	0.00E+00	8.87E-01
GROSS ALPHA	2.00E+00	0.00E+00	1.30E-06	1.30E-06	0.00E+00	0.00E+00	2.26E-06	2.26E-06



SECTION IV  
RADIOACTIVE EFFLUENT RELEASES - LIQUID EFFLUENTS  
Technical Specifications (5.9.4.a)

Table 2A    Liquid Effluents - Summation of All Releases  
Table 2B    Liquid Effluents - Summation of All Releases

January 1, 1990 - June 30, 1990



## Radioactive Effluent Releases - First and Second Quarters

### LIQUID EFFLUENTS

During the reporting period, a total of  $4.02\text{E-}01$  Curies of radioactive liquid materials less tritium and dissolved noble gases were released to the Missouri River at an average concentration of  $2.23\text{E-}09$   $\mu\text{Ci/ml}$ . This represents 2.2% of the limits specified in Appendix B to 10 CFR Part 20 ( $1.0\text{E-}07$   $\mu\text{Ci/ml}$ ) for unrestricted areas.

Dilution water during the period amounted to  $1.83\text{E+}11$  liters, while radioactive liquid waste volume was  $4.45\text{E+}07$  liters.

Additionally, 53.9 Curies of tritium were discharged at an average concentration  $2.88\text{E-}07$   $\mu\text{Ci/ml}$  or  $9.6\text{E-}03\%$  of MPC ( $3.0\text{E-}03$   $\mu\text{Ci/ml}$ ).

Gross alpha radioactivity released during the reporting period totaled  $7.05\text{E-}04$  Curies.

TABLE 2A

## EFFLUENT AND WASTE DISPOSAL REPORT

## LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

SEMIANNUAL FOR JAN THRU JUN 90

1 QUARTER 2 QUARTER

## A. FISSION/ACTIVATION PRODUCTS

TOTAL RELEASE (NO TRITIUM, GAS, ALPHA) CI 1.41E-01 2.61E-01

AVG DILUTED CONCENTRATION UCI/ML 1.49E-09 2.96E-09

PERCENT OF -INIT 10 CFR 20, APP B = 1.0E-07 % 1.49E+00 2.96E+00

## B. TRITIUM

TOTAL RELEASE CI 4.45E+01 9.35E+00

AVG DILUTED CONCENTRATION UCI/ML 4.70E-07 1.06E-07

PERCENT OF LIMIT 10 CFR 20, APP. B = 3.0E-03 % 1.57E-02 3.54E-03

## C. DISSOLVED/ENTRAINED GASES

TOTAL RELEASE CI 4.30E-01 1.34E-02

AVG DILUTED CONCENTRATION UCI/ML 4.55E-09 1.53E-10

PERCENT OF LIMIT TECH SPEC = 2.0E-04 UCI/ML % 2.28E-03 7.63E-05

## D. GROSS ALPHA RADIOACTIVITY

TOTAL RELEASE CI 4.60E-05 2.45E-04

## E. VOLUME OF WASTE RELEASE

PRIOR TO DIL. LITERS 2.39E+07 2.06E+07

## F. VOLUME OF DILUTION WATER

THIS PERIOD LITERS 9.45E+10 8.81E+10

TABLE 2B

## EFFLUENT AND WASTE DISPOSAL REPORT

## LIQUID EFFLUENT: 5-SUMMATION OF ALL RELEASES

SEMIANNUAL FOR JAN THRU JUN 90

NUCLIDES IN CURIES	1 QUARTER		2 QUARTER	
	CONT	BATCH	CONT	BATCH
STRONTIUM-89	2.60E-04	1.51E-05	0.00E+00	8.15E-04
STRONTIUM-90	4.71E-05	4.73E-06	6.52E-05	4.21E-05
COBALT-57	0.00E+00	0.00E+00	0.00E+00	9.09E-05
MOLYBDENUM-99	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TECHNETIUM-99M	0.00E+00	2.48E-05	0.00E+00	0.00E+00
CESIUM-141	0.50E+00	0.00E+00	0.00E+00	0.00E+00
TIN-117M	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CHROMIUM-51	0.00E+00	1.17E-04	0.00E+00	3.81E-03
IODINE-131	0.00E+00	4.91E-03	0.00E+00	1.72E-04
IODINE-133	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BARIUM-140	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RUTHENIUM-103	0.00E+00	1.38E-05	0.00E+00	2.09E-04
CESIUM-137	0.00E+00	6.88E-02	0.00E+00	4.69E-02
ZIRCONIUM-95	0.00E+00	0.00E+00	0.00E+00	1.59E-03
NIObIUM-95	0.00E+00	1.22E-04	0.00E+00	3.65E-03
CESIUM-134	0.00E+00	1.40E-02	0.00E+00	9.39E-03
COBALT-58	0.00E+00	2.96E-02	0.00E+00	1.27E-01
MANGANESE-54	0.00E+00	7.35E-05	0.00E+00	2.90E-04
CESIUM-136	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IRON-59	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ZINC-65	0.00E+00	2.83E-05	0.00E+00	0.00E+00
COBALT-60	0.00E+00	2.65E-03	0.00E+00	9.33E-03
LANTHANUM-140	0.00E+00	1.40E-03	0.00E+00	6.30E-05
ANTIMONY-124	0.00E+00	2.32E-03	0.00E+00	2.00E-03
CESIUM-144	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ANTIMONY-125	0.00E+00	1.55E-02	0.00E+00	5.11E-02
SILVER-110M	0.00E+00	7.17E-04	0.00E+00	4.48E-03
RUTHENIUM-106	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SELENIUM-75	0.00E+00	0.00E+00	0.00E+00	2.60E-04
ANTIMONY-126	0.00E+00	1.31E-04	0.00E+00	0.00E+00
TOTAL FOR PERIOD	3.07E-04	1.40E-01	5.52E-05	2.61E-01
DISSOLVED GASES				
ENTRAINED GASES				
XENON-133	0.00E+00	4.25E-01	0.00E+00	1.34E-02
XENON-135	0.00E+00	1.52E-04	0.00E+00	0.00E+00
XENON-131M	0.00E+00	4.82E-03	0.00E+00	0.00E+00
TOTAL FOR PERIOD	0.00E+00	4.30E-01	0.00E+00	1.34E-02
OTHER, ALPHA & TRITIUM				
ALPHA	0.00E+00	4.60E-05	0.00E+00	2.45E-04
TRITIUM	0.00E+00	4.45E-01	0.00E+00	9.35E+00
GROSS BETA/GAMMA	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	0.00E+00	4.45E-01	0.00E+00	9.35E+00
AVG. CONC. IN UCI/ML				
ALPHA	0.00E+00	8.59E-12	0.00E+00	4.44E-11
TRITIUM	0.00E+00	1.72E-05	0.00E+00	2.89E-06

SECTION V

RADIOACTIVE EFFLUENT RELEASES - SOLID RADIOACTIVE WASTE

Technical Specifications (5.9.4.a)

January 1, 1990 - June 30, 1990



Radioactive Effluent Releases - Solid Radioactive

Waste Effluent and Waste Disposal Report

January 1990 thru June 1990

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL

1. <u>Type of Waste</u>	<u>Month Shipped</u>	<u>Number of Shipments</u>	<u>Volume Cu. Meter</u>	<u>Curie Content</u>	<u>Est. Total % Error</u>
a. Spend resins, filter sludges, evaporator bottoms, etc.	Jan.	1	4.47	3.020	20%
	Feb.	0	0	0	N/A
	Mar.	0	0	0	N/A
	Apr.	0	0	0	N/A
	May	0	0	0	N/A
	Jun.	0	0	0	N/A
<i>Six-month Total (Type A)</i>		<u>1</u>	<u>4.47</u>	<u>3.020</u>	N/A
b. Dry compressable, contaminated equipment, etc. bottoms, etc.	Jan.	0	0	0	N/A
	Feb.	0	0	0	N/A
	Mar.	1	18.68	.544	20%
	Apr.	1	21.24	.748	20%
	May	0	0	0	N/A
	Jun.	0	0	0	N/A
<i>Six-month Total (Type B)</i>		<u>2</u>	<u>39.92</u>	<u>1.292</u>	20%
c. Irradiated components and other categories	Jan.	0	0	0	N/A
	Feb.	0	0	0	N/A
	Mar.	0	0	0	N/A
	Apr.	0	0	0	N/A
	May	0	0	0	N/A
	Jun.	0	0	0	N/A
<i>Six-month Total (Type C)</i>		<u>0</u>	<u>0</u>	<u>0</u>	
d. Other	Jan.	0	0	0	N/A
	Feb.	0	0	0	N/A
	Mar.	0	0	0	N/A
	Apr.	0	0	0	N/A
	May	0	0	0	N/A
	Jun.	0	0	0	N/A
<i>Six-month Total (Type D)</i>		<u>0</u>	<u>0</u>	<u>0</u>	



Radioactive Effluent Releases - Solid Radioactive  
Waste Effluent and Waste Disposal Report  
(Continued)

B. ESTIMATE OF MAJOR NUCLIDE COMPOSITION (By Type of Waste)

1. Percentage of Curies from Represented Isotopes

<u>Isotope</u>	<u>Percent</u>	<u>Curies</u>	
a. C-14	44.7	1.350	
Cs-134	33.8	1.020	<i>All other nuclides constitute less than 1 percent.</i>
Cs-137	13.0	0.394	
Tc-99	3.6	0.108	
H-3	1.5	0.045	
Mn-54	1.3	0.039	
Co-60	1.3	0.039	
b. Cs-137	61.20	0.791	
Co-58	11.80	0.152	<i>All other nuclides constitute less than 1 percent.</i>
Cs-134	5.70	0.074	
Tc-99	4.70	0.061	
Ru-103	2.70	0.035	
Rh-103	2.70	0.035	
Ag-110m	2.60	0.034	
Pr-144	2.00	0.026	
Ce-144	2.00	0.026	
Rh-106	1.80	0.023	
Ru-106	1.80	0.023	
Co-60	1.10	0.014	
c. N/A	N/A	N/A	
d. N/A	N/A	N/A	

C. SOLID WASTE (DISPOSITION)

<u>No. of Shipments</u>	<u>Transportation Mode</u>	<u>Destination</u>
1	Closed Sole Use Vehicle	Barnwell, South Carolina
2	Closed Sole Use Vehicle	Richland, Washington

D. SOLID WASTE (DISPOSITION)

0

Radioactive Effluent Releases - Solid Radioactive  
Waste Effluent and Waste Disposal Report  
(Continued)

E. PCP and ODCM Changes for the Period January 1, 1990 - June 30, 1990

In accordance with Technical Specification 5.9.4.a, the radioactive effluent release report shall include any changes to the Offsite Dose Calculation Manual (ODCM) and the Process Control Program (PCP).

No changes were made to the PCP.

No changes were made to the ODCM.

SECTION VI

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND  
SPEED BY STABILITY CLASS AND METEOROLOGY DATA  
PER BATCH RELEASE

(Regulatory Guide 1.21)

January 1, 1990 - June 30, 1990



VI. JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED BY STABILITY CLASS AND METEOROLOGY DATA PER BATCH RELEASE

A. Meteorology data per batch tables will have -99 values signifying either invalid data or no data available.

B. Meteorological Data Recovery

Data recovery from the site weather tower for the period January through June 1990 fell short of the 90 percent recovery requirement at 89.4 percent. Contributing parameters include WD110, WD45, WD10, WS110, WS45, WS10, Delta T110M, and T10M. Data losses occurred during this period due to the downtime needed for system calibration during the month of June 1990. The following table is a summary of the parameters and their respective recovery rates for the period.

<u>Parameter</u>	<u>Actual Recovery Rate</u>	<u>Recovered Parameter Hrs/ Total Parameter Hrs</u>
WD110	0.8992	3906/4344
WD45	0.8992	3906/4344
WD10	0.8992	3906/4344
WS110	0.8913	3872/4344
WS45	0.8946	3886/4344
WS10	0.8946	3886/4344
Delta T110M	0.8805	3825/4344
T10M	0.8941	3884/4344

Total Possible Hours: 34,752

Actual Tower Recovery: 31,071

Recovery Rate: 0.8941



B. Meteorological Data Recovery (Continued)

Hourly meteorological data used to replace missing tower data for the months of January 1990 through June 1990 originated from the North Omaha National Weather Service and NOAA Daily Synoptic Weather Maps. This raw data was used in formulating synthetic hourly data calculated in accordance with a proceduralized Pasquill-Turner transformation which utilizes solar angle, time of day, cloud cover, and wind speed to determine the Pasquill Class.

The tabulations of the Weather Tower Data for January 1, 1990 through June 30, 1990 look appropriate for the season as indicated. The Pasquill Classes observed for the six month period are detailed below. The first three months of the first half of 1990 (January-March) were:

Pasquill

Class	A	B	C	D	E	F	G	Total
% Obs.	0.1	1.0	3.1	35.3	36.8	15.6	8.1	= 100.0

and for April through June were:

Pasquill

Class	A	B	C	D	E	F	G	Total
% Obs.	0.7	4.4	7.9	38.8	34.3	10.6	3.3	= 100.0

The data, when corrected and/or supplemented by the synthetic data, derived from IWS NOAA data brought the recovery rate up above that required for maintaining adequate recovery as specified by the Nuclear Regulatory Commission. A data recovery synthetic and actual data requires a minimum recovery of 90 percent for the year.

On the basis of the data and its cross-checks, the weather data as amended is completely valid for use in tabulating reactor vent releases.

TABLE 15B - A

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -2.0 TO -INF IN FREQUENCY DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4		0.5 TO 0.9		1.0 TO 1.4		1.5 TO 1.9		2.0 TO 2.4		2.5 TO 2.9		3.0 TO 3.4		3.5 TO 3.9		4.0 TO 4.4		4.5 TO 4.9		5.0 TO 5.9		6.0 TO 6.9		7.0 TO 7.9		8.0 TO 8.9		9.0 TO INF		TOTAL	UBAR
	0.4	0.0	0.9	0.5	1.4	1.0	1.9	1.5	2.4	2.0	2.9	2.5	3.4	3.0	3.9	3.5	4.4	4.0	4.9	4.5	5.9	5.0	6.9	6.0	7.9	7.0	8.9	8.0	9.0			
NNE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
WSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
W	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
WNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
NW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
NNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
N TOTAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.41

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 0.1

TABLE 15B - B

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.7 TO -1.9 IN FREQUENCY DATA USED -- WD10 .WS10 .DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO	0.5 TO	1.0 TO	1.5 TO	2.0 TO	2.5 TO	3.0 TO	3.5 TO	4.0 TO	4.5 TO	5.0 TO	6.0 TO	7.0 TO	8.0 TO	9.0 TO	TOTAL	UBAR
	0.4	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.9	5.9	6.9	7.9	8.9	INF		
NNE	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.5
NE	0.	0.	0.	0.	0.	0.	0.	0.	2.	4.	0.	0.	0.	0.	0.	6.	4.5
ENE	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	2.	3.4
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	10.2
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	9.7
WSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	4.5
W	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.	2.	3.3
WNW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	2.	6.9
NW	0.	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.	0.	1.	0.	0.	4.	4.5
NNW	0.	0.	0.	0.	0.	0.	0.	1.	0.	2.	0.	0.	0.	0.	0.	3.	4.2
N	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
TOTAL	0.	0.	0.	1.	1.	0.	3.	2.	3.	8.	0.	1.	2.	0.	2.	23.	4.8

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 1.0



TABLE 15B - C

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.5 TO -1.6 IN FREQUENCY DATA USED -- WD10 .WS10 .DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.5
NE	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.7
ENE	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.6
E	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	3.7
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
S	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.	3.	6.5
SSW	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	1.	0.	1.	0.	0.	5.	4.0
SW	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	5.	0.	0.	1.	1.	8.	5.8
WSW	0.	0.	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.5
W	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	0.	0.	0.	0.	0.	3.	3.8
WNW	0.	0.	0.	0.	2.	3.	2.	1.	0.	0.	0.	0.	0.	0.	0.	8.	2.8
NW	0.	0.	0.	0.	0.	1.	0.	2.	0.	0.	0.	1.	4.	1.	0.	9.	5.9
NNW	0.	0.	0.	0.	2.	1.	1.	5.	2.	2.	1.	0.	0.	0.	0.	14.	3.7
N	0.	0.	0.	1.	2.	1.	0.	3.	1.	0.	0.	0.	0.	0.	0.	8.	3.0
TOTAL	0.	0.	0.	1.	10.	13.	4.	13.	4.	3.	8.	1.	6.	3.	1.	67.	4.1

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 3.1



TABLE 158 - D

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.5 TO -1.4 IN FREQUENCY

DATA USED -- WD10 ,WS10 ,DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	2.	2.	6.	11.	3.	0.	1.	0.	0.	0.	0.	0.	0.	0.	25.	2.0
NE	0.	0.	3.	2.	2.	6.	6.	8.	1.	0.	2.	0.	0.	0.	0.	30.	3.0
ENE	0.	0.	5.	3.	1.	1.	2.	0.	1.	3.	2.	0.	0.	0.	0.	18.	2.8
E	0.	0.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.	1.8
ESE	0.	0.	4.	6.	3.	2.	2.	4.	3.	5.	0.	0.	0.	0.	0.	29.	2.9
SE	0.	0.	2.	2.	0.	2.	5.	1.	3.	2.	6.	6.	0.	1.	0.	30.	4.3
SSE	0.	0.	1.	1.	3.	5.	1.	3.	2.	3.	8.	6.	11.	5.	0.	49.	5.4
S	0.	0.	0.	0.	3.	3.	4.	7.	4.	1.	17.	24.	8.	7.	3.	81.	5.8
SSW	0.	0.	0.	0.	1.	3.	2.	4.	3.	2.	3.	10.	9.	8.	3.	48.	6.2
SW	0.	0.	1.	0.	1.	1.	2.	0.	7.	1.	6.	2.	2.	0.	0.	23.	4.6
WSW	0.	0.	2.	4.	0.	1.	2.	5.	2.	3.	2.	0.	0.	0.	0.	21.	3.3
W	0.	0.	1.	5.	4.	7.	7.	6.	4.	2.	4.	0.	0.	0.	0.	40.	3.2
WNW	0.	0.	5.	5.	5.	0.	2.	6.	2.	2.	6.	5.	1.	0.	0.	39.	3.7
NW	0.	1.	1.	9.	8.	9.	12.	17.	12.	11.	14.	19.	7.	5.	8.	133.	4.7
NNW	0.	3.	3.	6.	5.	17.	16.	15.	16.	17.	20.	4.	0.	0.	0.	122.	3.7
N	0.	8.	7.	7.	13.	14.	8.	5.	4.	2.	0.	0.	0.	0.	0.	68.	2.3
TOTAL	0.	14.	39.	58.	61.	75.	71.	82.	64.	54.	90.	76.	38.	26.	14.	762.	4.1

NUMBER OF INVALID OBSERVATIONS= 1.

PERCENT OF VALID OBSERVATIONS= 35.3

TABLE 158 - E

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.4 TO +1.5 IN FREQUENCY DATA USED -- WD10 .WS10 .DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	1.	0.	2.	8.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	15.	2.1
NE	0.	1.	4.	5.	2.	2.	3.	6.	0.	0.	0.	0.	0.	0.	0.	23.	2.4
ENE	0.	0.	2.	2.	0.	6.	2.	2.	2.	0.	0.	0.	0.	0.	0.	15.	2.7
E	0.	0.	1.	3.	3.	3.	0.	1.	3.	7.	21.	3.	0.	0.	0.	46.	4.4
ESE	0.	0.	1.	6.	3.	8.	0.	1.	1.	1.	0.	2.	0.	0.	0.	27.	2.8
SE	0.	0.	7.	3.	8.	11.	5.	4.	2.	2.	4.	6.	2.	0.	0.	54.	3.4
SSE	0.	0.	3.	4.	3.	2.	11.	5.	7.	14.	21.	12.	1.	2.	0.	85.	4.5
S	0.	0.	1.	5.	5.	2.	3.	4.	1.	5.	20.	24.	18.	6.	0.	94.	5.6
SSW	0.	1.	1.	1.	4.	4.	2.	0.	0.	1.	6.	9.	16.	6.	1.	52.	5.8
SW	0.	2.	3.	2.	5.	8.	2.	2.	2.	2.	0.	1.	0.	0.	0.	27.	2.7
WSW	0.	1.	4.	2.	2.	6.	2.	6.	0.	0.	0.	1.	0.	0.	0.	52.	2.7
W	0.	0.	15.	5.	2.	4.	10.	5.	8.	2.	1.	0.	0.	0.	0.	83.	2.5
WNW	0.	1.	17.	18.	13.	12.	3.	3.	5.	6.	3.	1.	1.	0.	0.	117.	3.3
NW	0.	0.	5.	15.	18.	15.	24.	7.	7.	10.	7.	5.	2.	2.	0.	43.	2.9
NNW	0.	0.	3.	10.	4.	4.	10.	4.	2.	3.	3.	0.	0.	0.	0.	34.	2.5
N	0.	3.	3.	5.	6.	5.	4.	4.	2.	0.	2.	0.	0.	0.	0.	795.	3.6
TOTAL	0.	11.	70.	88.	84.	96.	85.	54.	44.	53.	89.	64.	40.	16.	1.		

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 36.8

## TABLE 158 - F

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +1.6 TO +4.0 IN FREQUENCY DATA USED -- WD10 , WS10 , DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	4.	2.3
NE	0.	0.	3.	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	5.	1.8
ENE	0.	0.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	1.6
E	0.	0.	4.	5.	0.	1.	0.	0.	0.	0.	2.	0.	0.	0.	0.	12.	2.1
ESE	0.	1.	0.	5.	10.	6.	2.	2.	0.	0.	0.	0.	0.	0.	0.	26.	2.3
SE	0.	1.	5.	3.	5.	4.	6.	1.	2.	0.	0.	0.	1.	0.	0.	28.	2.5
SSE	0.	1.	5.	3.	1.	1.	2.	1.	2.	1.	2.	1.	5.	2.	0.	27.	4.1
S	0.	0.	3.	3.	3.	1.	1.	4.	4.	2.	8.	1.	2.	1.	0.	32.	4.1
SSW	0.	2.	4.	4.	3.	0.	0.	2.	1.	1.	4.	4.	8.	6.	0.	40.	4.8
SW	0.	3.	2.	1.	2.	4.	2.	0.	4.	0.	2.	0.	2.	0.	0.	22.	3.1
WSW	0.	3.	2.	1.	0.	2.	3.	2.	1.	3.	2.	0.	0.	0.	0.	19.	3.0
W	0.	2.	6.	5.	1.	2.	4.	3.	1.	2.	0.	0.	0.	0.	0.	26.	2.4
WNW	0.	3.	9.	18.	11.	4.	5.	1.	1.	0.	0.	0.	0.	0.	0.	52.	1.9
NW	0.	0.	3.	4.	0.	4.	2.	2.	1.	3.	1.	1.	0.	0.	0.	20.	3.0
NNW	0.	2.	0.	1.	0.	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.	6.	2.4
N	0.	0.	3.	0.	3.	1.	1.	0.	2.	1.	2.	0.	0.	0.	0.	13.	2.9
TOTAL	0.	18.	52.	55.	42.	31.	29.	19.	19.	13.	23.	8.	18.	9.	0.	336.	3.0

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 15.6



TABLE 15B - G

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +4.1 TO +INF IN FREQUENCY DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	1.	0.	1.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	1.8
NE	0.	3.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	1.0
ENE	0.	0.	4.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	1.2
E	0.	1.	3.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.	1.3
ESE	0.	3.	4.	2.	1.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.	1.5
SE	0.	2.	3.	3.	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	11.	1.8
SSE	0.	0.	0.	3.	1.	0.	0.	1.	0.	1.	1.	3.	1.	2.	0.	13.	5.0
S	0.	1.	5.	0.	1.	1.	0.	0.	0.	2.	0.	1.	1.	1.	0.	13.	3.2
SSW	0.	2.	1.	3.	1.	0.	0.	2.	0.	2.	1.	0.	2.	1.	0.	15.	3.6
SW	0.	2.	2.	1.	0.	1.	0.	1.	0.	0.	2.	5.	3.	0.	0.	17.	4.4
WSW	0.	0.	1.	1.	2.	0.	2.	1.	1.	3.	0.	2.	0.	0.	0.	13.	3.6
W	0.	0.	7.	1.	1.	1.	2.	3.	0.	1.	0.	0.	0.	0.	0.	16.	2.3
WNW	0.	0.	8.	1.	3.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	16.	1.7
NW	0.	0.	2.	1.	1.	1.	1.	0.	4.	0.	0.	0.	0.	0.	0.	10.	2.8
NNW	0.	1.	0.	2.	0.	1.	0.	0.	0.	0.	2.	1.	0.	0.	0.	7.	3.5
N	0.	0.	2.	0.	1.	0.	0.	0.	0.	1.	4.	1.	0.	0.	0.	9.	4.1
TOTAL	0.	16.	44.	23.	13.	14.	6.	9.	5.	10.	10.	13.	7.	4.	0.	174.	2.9

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 8.1



TABLE 15B - ALL

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -INF TO +INF IN FREQUENCY

DATA USED -- WD10 ,WS10 ,DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	4.	3.	11.	20.	10.	0.	1.	1.	0.	0.	0.	0.	0.	0.	50.	2.0
NE	0.	4.	12.	7.	6.	8.	9.	15.	3.	4.	3.	0.	0.	0.	0.	71.	2.7
ENE	0.	0.	13.	7.	2.	9.	5.	3.	3.	3.	2.	0.	0.	0.	0.	47.	2.5
E	0.	2.	10.	13.	4.	5.	0.	2.	3.	7.	23.	3.	0.	0.	0.	72.	3.5
ESE	0.	4.	9.	19.	17.	19.	8.	7.	4.	6.	0.	2.	0.	0.	0.	95.	2.5
SE	0.	3.	17.	11.	14.	17.	17.	7.	7.	4.	10.	12.	3.	1.	0.	123.	3.3
SSE	0.	1.	9.	11.	8.	8.	14.	10.	11.	19.	32.	22.	18.	11.	0.	174.	4.7
S	0.	1.	9.	8.	12.	7.	7.	16.	9.	10.	45.	50.	30.	16.	3.	223.	5.3
SSW	0.	5.	6.	8.	10.	9.	5.	8.	4.	6.	15.	23.	36.	21.	5.	161.	5.4
SW	0.	7.	8.	4.	6.	15.	6.	3.	13.	3.	15.	8.	7.	1.	2.	98.	3.9
WSW	0.	4.	9.	8.	6.	9.	10.	14.	6.	10.	5.	3.	0.	0.	0.	84.	3.1
W	0.	2.	29.	16.	9.	15.	23.	17.	15.	8.	5.	0.	0.	0.	0.	139.	2.7
WNV	0.	4.	39.	42.	34.	23.	12.	11.	8.	8.	9.	7.	3.	0.	0.	200.	2.6
NW	0.	1.	11.	29.	27.	30.	41.	28.	23.	25.	22.	26.	14.	8.	8.	293.	4.0
N'W	0.	6.	6.	19.	11.	24.	28.	26.	21.	24.	26.	6.	0.	0.	0.	197.	3.5
'/	0.	11.	15.	13.	25.	21.	13.	12.	9.	4.	8.	1.	0.	0.	0.	132.	7.6
TOTAL	0.	59.	205.	226.	211.	229.	198.	180.	140.	141.	220.	163.	111.	58.	18.	2159.	4.7

NUMBER OF INVALID OBSERVATIONS= 1.

PERCENT OF VALID OBSERVATIONS= 100.0

TABLE 159 - A

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -2.0 TO -INF IN PERCENT DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	4.1

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 0.1

TABLE 159 - B

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.7 TO -1.9 IN PERCENT DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	1.5
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.19	0.00	0.00	0.00	0.00	0.00	0.28	4.5
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	3.4
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	10.2
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	9.7
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.04	4.5
W	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.09	3.3
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.09	6.9
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.05	0.00	0.00	0.04	0.00	0.00	0.18	4.5
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.14	4.2
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
TOTAL	0.00	0.00	0.00	0.05	0.05	0.00	0.14	0.09	0.13	0.37	0.00	0.05	0.08	0.00	0.10	1.06	4.8

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 1.0



TABLE 159 - C

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.5 TO -1.6 IN PERCENT DATA USED --- WD10 WS10 DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.20	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	2.5
NE	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.09	3.7
ENE	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	2.6
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	3.7
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.14	6.5
SSW	0.00	0.00	0.00	0.00	0.05	0.09	0.00	0.00	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.23	4.0
SW	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.05	0.04	0.37	5.8
WSW	0.00	0.00	0.00	0.00	0.09	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.5
W	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.14	3.8
WNW	0.00	0.00	0.00	0.00	0.09	0.14	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	2.8
NW	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.09	0.00	0.00	0.00	0.05	0.18	0.05	0.00	0.42	5.9
NNW	0.00	0.00	0.00	0.00	0.09	0.05	0.05	0.23	0.09	0.09	0.05	0.00	0.00	0.00	0.00	0.65	3.7
N	0.00	0.00	0.00	0.05	0.09	0.05	0.00	0.14	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.37	3.0
TOTAL	0.00	0.00	0.00	0.05	0.46	0.62	0.19	0.60	0.18	0.13	0.37	0.05	0.27	0.14	0.04	3.10	4.1

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 3.1



TABLE 159 - D

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.5 TO -1.4 IN PERCENT DATA USED -- WD10 , WS10 , DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	5.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.09	0.09	0.28	0.51	0.14	0.07	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	2.0
NE	0.00	0.00	0.14	0.09	0.09	0.28	0.28	0.37	0.05	0.00	0.09	0.00	0.00	0.00	0.00	1.39	3.0
ENE	0.00	0.00	0.23	0.14	0.05	0.05	0.09	0.00	0.04	0.14	0.09	0.00	0.00	0.00	0.00	0.83	2.8
E	0.00	0.00	0.09	0.09	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	1.8
ESE	0.00	0.00	0.19	0.28	0.14	0.09	0.09	0.18	0.14	0.23	0.00	0.00	0.00	0.00	0.00	1.34	2.9
SE	0.00	0.00	0.09	0.09	0.00	0.09	0.23	0.05	0.14	0.09	0.28	0.28	0.00	0.05	0.00	1.39	4.3
SSE	0.00	0.00	0.05	0.05	0.14	0.23	0.04	0.14	0.09	0.14	0.37	0.28	0.51	0.23	0.00	2.27	5.4
S	0.00	0.00	0.00	0.00	0.14	0.14	0.19	0.32	0.18	0.05	0.79	1.11	0.37	0.32	0.14	3.75	5.8
SSW	0.00	0.00	0.00	0.00	0.05	0.14	0.09	0.18	0.14	0.09	0.14	0.46	0.42	0.37	0.14	2.22	6.2
SW	0.00	0.00	0.05	0.00	0.05	0.05	0.09	0.00	0.32	0.05	0.28	0.09	0.09	0.00	0.00	1.07	4.6
WSW	0.00	0.00	0.09	0.19	0.00	0.05	0.09	0.23	0.09	0.14	0.09	0.00	0.00	0.00	0.00	0.97	3.3
W	0.00	0.00	0.05	0.23	0.19	0.32	0.32	0.28	0.19	0.09	0.18	0.00	0.00	0.00	0.00	1.85	3.2
WNW	0.00	0.00	0.23	0.23	0.23	0.00	0.10	0.28	0.09	0.09	0.28	0.23	0.05	0.00	0.00	1.81	3.7
NW	0.00	0.05	0.05	0.42	0.37	0.42	0.55	0.79	0.55	0.51	0.65	0.88	0.32	0.23	0.37	6.16	4.7
NNW	0.00	0.14	0.14	0.28	0.23	0.79	0.74	0.69	0.74	0.79	0.93	0.18	0.00	0.00	0.00	5.65	3.7
N	0.00	0.37	0.33	0.32	0.60	0.65	0.37	0.23	0.19	0.09	0.00	0.00	0.00	0.00	0.00	3.15	2.3
TOTAL	0.00	0.65	1.82	2.69	2.84	3.49	3.27	3.79	2.95	2.50	4.17	3.51	1.76	1.20	0.65	35.29	4.1

NUMBER OF INVALID OBSERVATIONS= 1.

PERCENT OF VALID OBSERVATIONS= 35.3

TABLE 159 - E

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.4 TO +1.5 IN PERCENT DATA USED -- WD10 WS10 DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.05	0.00	0.09	0.37	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	2.1
NE	0.00	0.05	0.19	0.23	0.09	0.09	0.14	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	2.4
ENE	0.00	0.00	0.10	0.09	6.00	0.28	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.74	2.7
E	0.00	0.05	0.05	0.14	0.14	0.14	0.00	0.04	0.14	0.32	0.97	0.14	0.00	0.00	0.00	2.13	4.4
ESE	0.00	0.00	0.05	0.28	0.14	0.37	0.18	0.05	0.05	0.04	0.00	0.09	0.00	0.00	0.00	1.25	2.8
SE	0.00	0.00	0.32	0.14	0.37	0.51	0.23	0.19	0.09	0.09	0.19	0.28	0.09	0.00	0.00	2.50	3.4
SSE	0.00	0.00	0.14	0.19	0.14	0.09	0.51	0.23	0.32	0.65	0.97	0.56	0.05	0.09	0.00	3.94	4.5
S	0.00	0.00	0.05	0.23	0.23	0.09	0.14	0.18	0.05	0.23	0.93	1.11	0.83	0.28	0.00	4.35	5.6
SSW	0.00	0.05	0.05	0.05	0.16	0.18	0.09	0.00	0.00	0.05	0.28	0.42	0.74	0.28	0.04	2.41	5.8
SW	0.00	0.10	0.14	0.09	0.14	0.37	0.09	0.09	0.09	0.09	0.00	0.05	0.00	0.00	0.00	1.25	2.7
WSW	0.00	0.05	0.18	0.09	0.09	0.28	0.09	0.28	0.09	0.00	0.05	0.05	0.00	0.00	0.00	1.25	2.9
W	0.00	0.00	0.70	0.23	0.09	0.19	0.46	0.23	0.37	0.09	0.05	0.00	0.00	0.00	0.00	2.41	2.7
WNW	0.00	0.05	0.79	0.83	0.60	0.55	0.14	0.14	0.23	0.28	0.14	0.05	0.04	0.00	0.00	3.84	2.5
NW	0.00	0.00	0.23	0.70	0.83	0.70	1.11	0.33	0.33	0.46	0.32	0.23	0.09	0.09	0.00	5.42	3.3
NNW	0.00	0.00	0.14	0.46	0.19	0.19	0.46	0.18	0.09	0.14	0.14	0.00	0.00	0.00	0.00	1.99	2.9
N	0.00	0.14	0.14	0.23	0.28	0.23	0.19	0.19	0.09	0.00	0.09	0.00	0.00	0.00	0.00	1.58	2.5
TOTAL	0.00	0.54	3.27	4.07	3.88	4.44	3.92	2.50	2.03	2.44	4.13	2.98	1.84	0.74	0.04	36.82	3.6

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 36.8

TABLE 159 - F

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +1.6 TO +4.0 IN PERCENT DATA USED -- WD10 .WS10 .DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	U3AR
NNE	0.00	0.00	0.05	0.05	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.18	2.3
NE	0.00	0.00	0.14	0.00	0.05	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	1.8
ENE	0.00	0.00	0.09	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	1.6
E	0.00	0.00	0.19	0.23	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	2.1
ESE	0.00	0.05	0.00	0.23	0.46	0.28	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	2.3
SE	0.00	0.05	0.23	0.14	0.23	0.18	0.28	0.05	0.09	0.00	0.00	0.00	0.05	0.00	0.00	1.30	2.5
SSE	0.00	0.05	0.23	0.14	0.05	0.05	0.09	0.05	0.09	0.05	0.09	0.04	0.23	0.09	0.00	1.25	4.1
S	0.00	0.00	0.14	0.14	0.14	0.05	0.00	0.18	0.18	0.09	0.37	0.05	0.09	0.05	0.00	1.48	4.1
SSW	0.00	0.09	0.19	0.18	0.14	0.00	0.05	0.09	0.05	0.05	0.18	0.18	0.37	0.28	0.00	1.85	4.8
SW	0.00	0.14	0.09	0.05	0.09	0.19	0.09	0.00	0.19	0.00	0.09	0.00	0.09	0.00	0.00	1.02	3.1
WSW	0.00	0.14	0.09	0.05	0.00	0.09	0.09	0.09	0.05	0.14	0.09	0.00	0.00	0.00	0.00	0.88	3.0
W	0.00	0.09	0.28	0.23	0.05	0.09	0.16	0.14	0.05	0.09	0.00	0.00	0.00	0.00	0.00	1.20	2.4
WNW	0.00	0.14	0.42	0.83	0.51	0.18	0.23	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	2.41	1.9
NW	0.00	0.00	0.14	0.19	0.00	0.18	0.09	0.09	0.00	0.14	0.05	0.05	0.00	0.00	0.00	0.93	3.0
NNW	0.00	0.09	0.00	0.05	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.28	2.4
N	0.00	0.00	0.14	0.00	0.14	0.05	0.05	0.00	0.09	0.04	0.09	0.00	0.00	0.00	0.00	0.60	2.9
TOTAL	0.00	0.84	2.42	2.56	1.95	1.44	1.34	0.87	0.88	0.60	1.05	0.36	0.83	0.42	0.00	15.56	3.0

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 15.6



TABLE 159 - G

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +4.1 TO +INF IN PERCENT DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.05	0.00	0.05	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	1.8
NE	0.00	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	1.0
ENE	0.00	0.00	0.18	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	1.2
E	0.00	0.05	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	1.3
ESE	0.00	0.14	0.18	0.09	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	1.5
SE	0.00	0.09	0.14	0.14	0.05	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	1.8
SSE	0.00	0.00	0.20	0.14	0.05	0.00	0.00	0.05	0.00	0.05	0.04	0.14	0.04	0.09	0.00	0.60	5.0
S	0.00	0.05	0.23	0.00	0.05	0.05	0.00	0.00	0.00	0.09	0.00	0.05	0.04	0.04	0.00	0.60	3.2
SSW	0.00	0.09	0.05	0.14	0.05	0.00	0.00	0.09	0.00	0.09	0.05	0.00	0.09	0.05	0.00	0.70	3.6
SW	0.00	0.09	0.09	0.05	0.00	0.05	0.00	0.05	0.00	0.00	0.09	0.23	0.14	0.00	0.00	0.79	4.4
WSW	0.00	0.00	0.05	0.05	0.09	0.00	0.09	0.05	0.04	0.14	0.00	0.09	0.00	0.00	0.00	0.60	3.6
W	0.00	0.00	0.32	0.05	0.05	0.05	0.09	0.14	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.74	2.3
WNW	0.00	0.00	0.37	0.05	0.14	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	1.7
NW	0.00	0.00	0.09	0.05	0.25	0.05	0.04	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.46	2.8
NNW	0.00	0.05	0.00	0.09	0.20	0.05	0.00	0.00	0.00	0.00	0.09	0.04	0.00	0.00	0.00	0.32	3.5
N	0.00	0.00	0.09	0.00	0.05	0.00	0.00	0.00	0.00	0.05	0.18	0.05	0.00	0.00	0.00	0.42	4.1
TOTAL	0.00	0.75	2.02	1.09	0.63	0.66	0.27	0.42	0.22	0.46	0.45	0.60	0.31	0.18	0.00	8.06	2.9

NUMBER OF INVALID OBSERVATIONS= 0.

PERCENT OF VALID OBSERVATIONS= 8.1



TABLE 159 - ALL

DATA PERIOD 01/01/1990 THROUGH 03/31/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -INF TO +INF IN PERCENT DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0	9.0	TOTAL	UBAR
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO		
	0.4	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.9	5.9	6.9	7.9	8.9	INF		
NNE	0.00	0.18	0.14	0.51	0.93	0.46	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	2.32	2.0
NE	0.00	0.19	0.56	0.32	0.28	0.37	0.42	0.69	0.14	0.18	0.14	0.00	0.00	0.00	0.00	3.29	2.7
ENE	0.00	0.00	0.60	0.33	0.09	0.42	0.23	0.14	0.14	0.14	0.09	0.00	0.00	0.00	0.00	2.18	2.5
E	0.00	0.09	0.46	0.60	0.19	0.23	0.00	0.09	0.14	0.32	1.07	0.14	0.00	0.00	0.00	3.33	3.5
ESE	0.00	0.19	0.42	0.88	0.79	0.88	0.37	0.32	0.18	0.28	0.00	0.09	0.00	0.00	0.00	4.40	2.5
SE	0.00	0.14	0.79	0.51	0.65	0.79	0.79	0.32	0.32	0.18	0.46	0.56	0.14	0.05	0.00	5.70	3.3
SSE	0.00	0.05	0.42	0.51	0.37	0.37	0.65	0.46	0.51	0.88	1.48	1.02	0.83	0.51	0.00	8.06	4.7
S	0.00	0.05	0.42	0.37	0.56	0.32	0.32	0.74	0.42	0.46	2.08	2.32	1.39	0.74	0.14	10.33	5.3
SSW	0.00	0.23	0.28	0.37	0.46	0.42	0.23	0.37	0.19	0.78	0.69	1.07	1.67	0.97	0.23	7.46	5.4
SW	0.00	0.32	0.37	0.19	0.28	0.70	0.28	0.14	0.60	0.14	0.69	0.37	0.32	0.05	0.09	4.54	3.9
WSW	0.00	0.18	0.42	0.37	0.28	0.42	0.46	0.65	0.28	0.46	0.23	0.14	0.00	0.00	0.00	3.89	3.1
W	0.00	0.09	1.34	0.74	0.42	0.70	1.07	0.79	0.69	0.37	0.23	0.00	0.00	0.00	0.00	6.44	2.7
WNW	0.00	0.18	1.81	1.95	1.57	1.06	0.56	0.51	0.37	0.37	0.42	0.32	0.14	0.00	0.00	9.26	2.6
NW	0.00	0.05	0.51	1.34	1.25	1.39	1.90	1.30	1.06	1.16	1.02	1.20	0.65	0.37	0.37	13.57	4.0
NNW	0.00	0.28	0.28	0.88	0.51	1.11	1.30	1.20	0.97	1.11	1.20	0.28	0.00	0.00	0.00	9.12	3.5
N	0.00	0.51	0.69	0.60	1.16	0.97	0.60	0.56	0.42	0.18	0.37	0.05	0.00	0.00	0.00	6.11	2.6
TOTAL	0.00	2.73	9.51	10.47	9.79	10.61	9.18	8.33	6.48	6.51	10.17	7.56	5.14	2.69	0.83	100.00	3.7

NUMBER OF INVALID OBSERVATIONS= 1.

PERCENT OF VALID OBSERVATIONS= 100.0

TABLE 15B - A

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -2.0 TO -INF IN FREQUENCY DATA USED -- WD10 .WS10 .DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
WSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
W	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
WNW	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.0
NW	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.	1.	4.	0.	0.	9.	6.1
NNW	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	3.0
N	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.3
TOTAL	0.	0.	1.	0.	1.	1.	1.	0.	0.	2.	3.	1.	4.	0.	0.	14.	4.9

NUMBER OF INVALID OBSERVATIONS= 6.

PERCENT OF VALID OBSERVATIONS= 0.7

TABLE 15B - B

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EA

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.7 TO -1.9 IN FREQUENCY DATA USED -- WD10 ,WS10 ,DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	4.	2.7
NE	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	2.6
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.3
ESE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	5.7
SE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
SSE	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.	6.5
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.	0.	0.	6.	1.	9.	7.3
SSW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	1.	5.	8.8
SW	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
WSW	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.1
W	0.	0.	0.	0.	0.	1.	1.	2.	2.	0.	0.	0.	0.	0.	0.	6.	3.6
WNW	0.	0.	0.	0.	0.	0.	3.	2.	0.	0.	0.	0.	0.	0.	0.	7.	2.8
NW	0.	0.	0.	0.	0.	0.	1.	1.	1.	5.	0.	0.	0.	0.	0.	8.	4.2
NNW	0.	0.	1.	0.	5.	3.	1.	2.	1.	5.	5.	1.	2.	0.	1.	27.	4.3
N	0.	0.	1.	1.	0.	1.	1.	0.	1.	1.	0.	0.	0.	0.	0.	6.	3.1
TOTAL	0.	2.	6.	2.	6.	9.	8.	7.	7.	13.	10.	3.	3.	14.	4.	64.	4.7

NUMBER OF INVALID OBSERVATIONS= 2.

PERCENT OF VALID OBSERVATIONS= 4.4



TABLE 15B - C

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.5 TO -1.6 IN FREQUENCY DATA USED -- WD10 .WS10 .DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	2.	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	5.	2.2
NE	0.	0.	1.	3.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	1.8
ENE	0.	0.	1.	0.	1.	2.	0.	0.	0.	1.	0.	0.	0.	0.	0.	5.	2.6
E	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	1.9
ESE	0.	1.	0.	1.	2.	3.	0.	0.	0.	0.	1.	2.	0.	0.	0.	10.	3.1
SE	0.	0.	0.	6.	2.	5.	1.	0.	0.	2.	0.	1.	1.	0.	0.	18.	3.0
SSE	0.	0.	1.	0.	0.	0.	0.	0.	2.	0.	3.	5.	2.	3.	3.	19.	6.7
S	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.	3.	1.	4.	13.	7.4
SSW	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	1.	1.	0.	1.	1.	6.	6.3
SW	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	3.6
WSW	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.8
W	0.	0.	1.	0.	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.	4.	2.8
WNW	0.	1.	0.	0.	0.	3.	6.	1.	0.	0.	1.	0.	0.	0.	0.	12.	3.1
NW	0.	0.	2.	0.	1.	2.	1.	4.	1.	2.	3.	0.	0.	0.	0.	16.	3.5
NNW	0.	0.	2.	0.	0.	2.	2.	0.	0.	4.	5.	1.	2.	2.	0.	20.	4.8
N	0.	1.	2.	8.	3.	1.	6.	1.	1.	2.	1.	0.	0.	0.	1.	27.	2.9
TOTAL	0.	3.	13.	19.	11.	24.	19.	7.	7.	11.	18.	12.	8.	7.	9.	168.	4.0

NUMBER OF INVALID OBSERVATIONS= 1.

PERCENT OF VALID OBSERVATIONS= 7.9



TABLE 158 - D

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.5 TO -1.4 IN FREQUENCY

DATA USED -- WD10 ,WS10 ,DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	3.	8.	7.	7.	4.	2.	0.	0.	0.	0.	0.	0.	0.	31.	2.2
NE	0.	1.	1.	2.	3.	4.	4.	2.	0.	0.	0.	0.	0.	0.	0.	17.	2.5
ENE	0.	1.	0.	3.	8.	6.	1.	0.	1.	0.	0.	1.	0.	0.	0.	21.	2.5
E	0.	0.	6.	5.	11.	5.	4.	0.	2.	5.	2.	2.	0.	0.	0.	42.	2.8
ESE	0.	0.	2.	5.	5.	4.	3.	5.	2.	6.	2.	9.	0.	0.	0.	43.	3.8
SE	0.	1.	4.	7.	10.	8.	7.	4.	4.	11.	10.	9.	5.	2.	1.	83.	4.1
SSE	0.	1.	1.	1.	0.	6.	6.	8.	19.	14.	23.	33.	13.	15.	6.	146.	5.7
S	0.	1.	1.	5.	3.	1.	3.	2.	6.	5.	17.	10.	7.	7.	6.	74.	5.5
SSW	0.	0.	1.	0.	1.	1.	1.	2.	4.	7.	15.	10.	2.	2.	0.	46.	5.3
SW	0.	0.	0.	1.	2.	4.	1.	2.	2.	3.	3.	0.	0.	0.	0.	18.	3.6
WSW	0.	0.	0.	2.	1.	3.	2.	1.	1.	0.	2.	1.	0.	0.	0.	13.	3.4
W	0.	0.	2.	3.	2.	3.	3.	1.	2.	1.	2.	0.	0.	0.	0.	19.	2.9
WNW	0.	2.	2.	2.	6.	5.	2.	4.	0.	2.	0.	0.	0.	0.	0.	25.	2.5
NW	0.	0.	2.	4.	6.	4.	3.	7.	7.	8.	17.	10.	2.	1.	0.	71.	4.4
NNW	0.	1.	2.	7.	9.	17.	10.	10.	9.	8.	25.	12.	4.	1.	0.	115.	4.1
N	0.	1.	7.	16.	9.	11.	6.	2.	5.	1.	4.	2.	0.	0.	0.	64.	2.6
TOTAL	0.	9.	34.	71.	83.	89.	60.	52.	64.	71.	122.	99.	33.	28.	13.	828.	4.2

NUMBER OF INVALID OBSERVATIONS= 6.

PERCENT OF VALID OBSERVATIONS= 38.8

TABLE 158 - E

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.4 TO +1.5 IN FREQUENCY DATA USED -- WD10 , WS10 , DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	1.	11.	8.	0.	3.	5.	2.	1.	0.	0.	0.	0.	0.	0.	31.	2.1
NE	0.	0.	1.	5.	3.	1.	3.	2.	0.	0.	0.	0.	0.	0.	0.	15.	2.4
ENE	0.	1.	1.	2.	6.	2.	2.	0.	0.	0.	0.	0.	0.	0.	0.	14.	2.1
E	0.	0.	2.	9.	6.	1.	5.	4.	6.	2.	0.	0.	0.	0.	0.	35.	2.8
ESE	0.	2.	6.	6.	4.	7.	12.	3.	4.	3.	7.	5.	0.	0.	0.	59.	3.3
SE	0.	1.	8.	8.	10.	10.	22.	11.	19.	5.	2.	4.	5.	1.	0.	106.	3.4
SSE	0.	1.	8.	4.	3.	5.	1.	10.	8.	6.	13.	9.	5.	4.	2.	79.	4.5
S	0.	2.	7.	5.	2.	2.	3.	8.	5.	5.	8.	10.	4.	2.	3.	66.	4.5
SSW	0.	0.	4.	3.	2.	3.	3.	0.	0.	4.	6.	3.	2.	1.	1.	32.	4.1
SW	0.	1.	4.	3.	2.	3.	0.	0.	1.	1.	2.	3.	1.	0.	0.	21.	3.3
WSW	0.	1.	3.	2.	0.	2.	1.	1.	5.	1.	1.	0.	0.	0.	0.	17.	3.0
W	0.	1.	9.	5.	3.	1.	3.	3.	2.	0.	0.	0.	0.	0.	0.	27.	2.2
WNW	0.	5.	10.	8.	3.	4.	6.	3.	2.	2.	0.	0.	0.	0.	0.	43.	2.2
NW	0.	4.	18.	12.	17.	13.	11.	2.	4.	3.	5.	0.	0.	0.	0.	89.	2.4
NNW	0.	1.	3.	5.	5.	3.	5.	9.	3.	5.	7.	2.	1.	0.	0.	49.	3.5
N	0.	0.	4.	14.	5.	10.	6.	4.	2.	3.	1.	0.	0.	0.	0.	49.	2.6
TOTAL	0.	21.	99.	99.	71.	70.	88.	62.	62.	40.	52.	36.	18.	8.	6.	732.	3.2

NUMBER OF INVALID OBSERVATIONS= 7.

PERCENT OF VALID OBSERVATIONS= 34.3

TABLE 15B - F

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +1.6 TO +4.0 IN FREQUENCY DATA USED -- WD10 ,WS10 ,DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	1.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	1.6
NE	0.	0.	4.	4.	0.	2.	3.	1.	0.	0.	0.	0.	0.	0.	0.	14.	2.2
ENE	0.	0.	1.	1.	0.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	6.	2.3
E	0.	2.	2.	0.	0.	2.	2.	1.	1.	0.	0.	0.	0.	0.	0.	10.	2.3
ESE	1.	1.	6.	4.	2.	2.	1.	0.	0.	0.	0.	1.	0.	0.	0.	16.	1.8
SE	2.	1.	3.	1.	2.	2.	0.	2.	1.	1.	2.	1.	0.	0.	0.	18.	2.7
SSE	0.	1.	2.	1.	1.	0.	2.	0.	0.	1.	0.	0.	0.	0.	0.	8.	2.3
S	0.	1.	2.	3.	0.	0.	2.	1.	1.	1.	1.	3.	0.	0.	0.	15.	3.4
SSW	0.	3.	5.	2.	3.	2.	2.	3.	4.	0.	0.	0.	0.	0.	0.	24.	2.4
SW	0.	1.	5.	1.	1.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	11.	2.3
WSW	1.	1.	9.	1.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.	16.	1.9
W	0.	2.	16.	4.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	1.3
WNW	0.	1.	13.	14.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	32.	1.5
NW	0.	3.	4.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10.	1.3
NNW	0.	0.	3.	1.	1.	0.	1.	0.	0.	0.	2.	0.	1.	0.	0.	9.	3.2
N	0.	0.	2.	3.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	7.	2.2
TOTAL	4.	17.	78.	45.	16.	15.	16.	8.	8.	3.	9.	5.	2.	0.	0.	226.	2.1

NUMBER OF INVALID OBSERVATIONS= 2.

PERCENT OF VALID OBSERVATIONS= 10.6



TABLE 15R - G

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +4.1 TO +INF IN FREQUENCY DATA USED -- DT10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	2.	2.9
NE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
ENE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.0
E	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	1.2
ESE	0.	2.	2.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.	1.2
SE	0.	0.	5.	2.	0.	0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	10.	2.4
SSE	0.	0.	5.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	6.	1.5
S	0.	2.	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	7.	2.2
SSW	0.	1.	1.	0.	0.	1.	0.	0.	2.	0.	0.	0.	0.	0.	0.	6.	2.2
SW	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	3.	1.7
WSW	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.9
W	0.	2.	3.	0.	0.	5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	1.0
WNW	0.	1.	5.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.	1.2
NW	0.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	1.1
NNW	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	4.	3.7
N	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.	2.	4.8
TOTAL	0.	12.	29.	11.	1.	1.	1.	4.	5.	1.	5.	1.	0.	0.	0.	71.	2.0

NUMBER OF INVALID OBSERVATIONS= 2.

PERCENT OF VALID OBSERVATIONS= 3.3



TABLE 158 - ALL

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION: WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -INF TO +INF IN FREQUENCY

DATA USED -- WD10 ,WS10 ,DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.	1.	18.	20.	8.	13.	10.	4.	3.	0.	0.	0.	0.	0.	0.	77.	2.2
NE	0.	1.	7.	14.	7.	10.	11.	5.	0.	0.	0.	0.	0.	0.	0.	55.	2.3
ENE	0.	2.	3.	6.	15.	13.	4.	0.	1.	1.	0.	1.	0.	0.	0.	46.	2.4
E	0.	2.	14.	16.	18.	9.	11.	5.	9.	7.	3.	2.	0.	0.	0.	96.	2.7
ESE	1.	6.	15.	19.	13.	16.	16.	8.	6.	9.	11.	17.	0.	0.	0.	138.	3.2
SE	2.	3.	20.	24.	24.	25.	30.	17.	24.	19.	17.	15.	11.	3.	1.	235.	3.5
SSE	0.	4.	17.	6.	4.	11.	9.	19.	30.	22.	42.	47.	20.	28.	12.	271.	5.2
S	0.	6.	11.	14.	6.	3.	8.	11.	13.	13.	29.	27.	15.	14.	14.	184.	5.1
SSW	0.	4.	11.	5.	6.	7.	6.	7.	13.	11.	22.	14.	4.	8.	3.	121.	4.5
SW	0.	3.	10.	5.	5.	8.	2.	3.	3.	4.	6.	3.	2.	0.	0.	54.	3.1
WSW	1.	4.	14.	5.	1.	7.	5.	2.	7.	1.	5.	1.	0.	0.	0.	53.	2.6
W	0.	5.	31.	12.	7.	6.	8.	6.	7.	1.	2.	0.	0.	0.	0.	85.	2.2
WNW	0.	10.	32.	26.	11.	13.	19.	10.	2.	4.	1.	0.	0.	0.	0.	128.	2.1
NW	0.	9.	27.	19.	25.	19.	17.	14.	13.	19.	28.	11.	6.	1.	0.	208.	3.3
NNW	0.	2.	12.	14.	21.	26.	19.	21.	13.	23.	45.	17.	10.	3.	1.	227.	4.0
N	0.	2.	17.	42.	18.	23.	19.	8.	9.	7.	8.	2.	0.	0.	1.	156.	2.7
TOTAL	4.	64.	260.	247.	189.	209.	194.	140.	151.	141.	219.	157.	68.	57.	32.	2134.	3.6

NUMBER OF INVALID OBSERVATIONS= 50.

PERCENT OF VALID OBSERVATIONS= 97.7

TABLE 159 - A

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -2.0 TO -INF IN PERCENT DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	3.0
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.14	0.04	0.19	0.00	0.00	0.42	6.1
NNW	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.14	3.0
N	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	1.3
TOTAL	0.00	0.00	0.05	0.00	0.05	0.05	0.05	0.00	0.00	0.09	0.14	0.04	0.19	0.00	0.00	0.66	4.9

NUMBER OF INVALID OBSERVATIONS= 6.

PERCENT OF VALID OBSERVATIONS= 0.7

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR  
DT100 = -1.7 TO -1.9 IN PERCENT DATA USED -- WD10 WS10 DT100

SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4		0.5 TO 0.9		1.0 TO 1.4		1.5 TO 1.9		2.0 TO 2.4		2.5 TO 2.9		3.0 TO 3.4		3.5 TO 3.9		4.0 TO 4.4		4.5 TO 4.9		5.0 TO 5.9		6.0 TO 6.9		7.0 TO 7.9		8.0 TO 8.9		9.0 TO INF		TOTAL	UBAR
	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4	0.0	0.4		
NNE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	2.7
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	2.6
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NUMBER OF INVALID OBSERVATIONS= 2.

PERCENT OF VALID OBSERVATIONS= 4.4

TABLE 159 - C

DATA PERIOD 01/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -1.5 TO -1.6 IN PERCENT																																DATA USED -- WD10 ,WS10 ,DT100															
SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION																																															
SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR																														
NNE	0.00	0.00	0.09	0.00	0.05	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	2.2																														
NE	0.00	0.00	0.05	0.14	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	1.8																														
ENE	0.00	0.00	0.05	0.00	0.05	0.09	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.23	2.6																														
E	0.00	0.00	0.05	0.05	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	1.9																														
ESE	0.00	0.05	0.00	0.05	0.09	0.14	0.00	0.00	0.00	0.00	0.05	0.09	0.00	0.00	0.00	0.47	3.1																														
SE	0.00	0.00	0.00	0.28	0.09	0.23	0.05	0.00	0.00	0.09	0.00	0.05	0.05	0.00	0.00	0.84	3.0																														
SSE	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.14	0.24	0.09	0.14	0.14	0.89	6.7																														
S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.09	0.14	0.05	0.19	0.61	7.4																														
SSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.05	0.05	0.00	0.05	0.04	0.28	6.3																														
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	3.6																														
WSW	0.00	0.00	0.00	0.00	0.00	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.8																														
W	0.00	0.00	0.05	0.00	0.00	0.05	0.05	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.19	2.8																														
WNW	0.00	0.05	0.00	0.00	0.00	0.14	0.28	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	3.1																														
NW	0.00	0.00	0.09	0.00	0.05	0.09	0.05	0.19	0.05	0.09	0.00	0.00	0.00	0.00	0.00	0.75	3.5																														
NNW	0.00	0.00	0.10	0.00	0.00	0.09	0.09	0.00	0.00	0.19	0.24	0.05	0.09	0.09	0.00	0.94	4.8																														
N	0.00	0.05	0.09	0.37	0.14	0.05	0.28	0.05	0.05	0.09	0.05	0.00	0.00	0.00	0.05	1.27	2.9																														
N TOTAL	0.00	0.15	0.62	0.89	0.52	1.11	0.89	0.34	0.32	0.50	0.85	0.57	0.37	0.33	0.42	7.88	4.0																														

NUMBER OF INVALID OBSERVATIONS= 1.

PERCENT OF VALID OBSERVATIONS= 7.9



TABLE 159 - D

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.5 TO -1.4 IN PERCENT DATA USED --- WD10 WS10 DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0	9.0	TOTAL	UBAR
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO		
	0.4	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.9	5.9	6.9	7.9	8.9	INF		
NNE	0.00	0.00	0.14	0.37	0.33	0.33	0.19	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	2.2
NE	0.00	0.05	0.05	0.09	0.14	0.19	0.19	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	2.5
ENE	0.00	0.05	0.00	0.14	0.37	0.28	0.05	0.00	0.05	0.00	0.00	0.04	0.00	0.00	0.00	0.98	2.5
E	0.00	0.00	0.28	0.24	0.52	0.24	0.19	0.00	0.09	0.23	0.09	0.09	0.00	0.00	0.00	1.97	2.8
ESE	0.00	0.00	0.09	0.24	0.24	0.19	0.14	0.24	0.09	0.28	0.09	0.42	0.00	0.00	0.00	2.02	3.8
SE	0.00	0.05	0.19	0.33	0.47	0.37	0.33	0.19	0.19	0.51	0.47	0.42	0.23	0.09	0.05	3.89	4.1
SSE	0.00	0.05	0.05	0.05	0.00	0.28	0.28	0.37	0.89	0.66	1.08	1.55	0.61	0.70	0.28	6.85	5.7
S	0.00	0.05	0.05	0.23	0.14	0.05	0.14	0.09	0.28	0.23	0.80	0.47	0.33	0.33	0.28	3.47	5.5
SSW	0.00	0.00	0.05	0.00	0.05	0.05	0.05	0.09	0.19	0.33	0.70	0.47	0.09	0.09	0.00	2.16	5.3
SW	0.00	0.00	0.00	0.05	0.09	0.19	0.05	0.09	0.09	0.14	0.14	0.00	0.00	0.00	0.00	0.84	3.6
WSW	0.00	0.00	0.00	0.09	0.05	0.14	0.09	0.05	0.05	0.00	0.09	1.05	0.00	0.00	0.00	0.61	3.4
W	0.00	0.00	0.10	0.14	0.09	0.14	0.14	0.05	0.09	0.05	0.09	0.00	0.00	0.00	0.00	0.89	2.9
WNW	0.00	0.10	0.09	0.09	0.28	0.24	0.09	0.19	0.00	0.09	0.00	0.00	0.00	0.00	0.00	1.17	2.5
NW	0.00	0.00	0.09	0.19	0.28	0.19	0.14	0.33	0.33	0.37	0.80	0.47	0.09	0.05	0.00	3.33	4.4
NNW	0.00	0.05	0.09	0.33	0.42	0.80	0.47	0.47	0.42	0.37	1.17	0.56	0.19	0.05	0.00	5.39	4.1
N	0.00	0.05	0.33	0.75	0.42	0.52	0.28	0.09	0.23	0.05	0.19	0.09	0.00	0.00	0.00	3.00	2.6
TOTAL	0.00	0.45	1.60	3.33	3.89	4.20	2.82	2.43	2.99	3.31	5.71	4.63	1.54	1.31	0.61	38.62	4.2

NUMBER OF INVALID OBSERVATIONS= 6.

PERCENT OF VALID OBSERVATIONS= 38.8

TABLE 159 - E

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -0.4 TO +1.5 IN PERCENT DATA USED -- WD10 , WS10 , DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR
NNE	0.00	0.05	0.52	0.37	0.00	0.14	0.23	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	1.45	2.1
NE	0.00	0.00	0.05	0.23	0.14	0.05	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	2.4
ENE	0.00	0.05	0.05	0.10	0.28	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	2.1
E	0.00	0.00	0.09	0.42	0.28	0.05	0.24	0.19	0.28	0.09	0.00	0.00	0.00	0.00	0.00	1.64	2.8
ESE	0.00	0.09	0.28	0.28	0.19	0.33	0.56	0.14	0.19	0.14	0.33	0.24	0.00	0.00	0.00	2.77	3.3
SE	0.00	0.05	0.38	0.37	0.47	0.47	1.03	0.52	0.89	0.23	0.09	0.19	0.23	0.05	0.00	4.97	3.4
SSE	0.00	0.05	0.38	0.19	0.14	0.23	0.05	0.47	0.37	0.28	0.61	0.42	0.23	0.19	0.09	3.70	4.5
S	0.00	0.09	0.33	0.24	0.09	0.09	0.14	0.38	0.23	0.23	0.38	0.47	0.19	0.09	0.14	3.09	4.5
SSW	0.00	0.00	0.19	0.14	0.09	0.14	0.14	0.00	0.00	0.19	0.28	0.14	0.09	0.05	0.05	1.50	4.1
SW	0.00	0.05	0.19	0.14	0.09	0.14	0.00	0.00	0.05	0.05	0.09	0.14	0.04	0.00	0.00	0.98	3.3
WSW	0.00	0.05	0.14	0.09	0.00	0.09	0.05	0.05	0.23	0.05	0.00	0.00	0.00	0.00	0.00	0.80	3.0
W	0.00	0.05	0.42	0.24	0.14	0.05	0.14	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	1.27	2.2
WNW	0.00	0.24	0.47	0.38	0.14	0.19	0.28	0.14	0.09	0.09	0.00	0.00	0.00	0.00	0.00	2.02	2.2
NW	0.00	0.19	0.84	0.56	0.80	0.61	0.52	0.09	0.19	0.14	0.23	0.00	0.00	0.00	0.00	4.17	2.4
WNW	0.00	0.05	0.14	0.24	0.24	0.14	0.23	0.42	0.14	0.23	0.33	0.09	0.05	0.00	0.00	2.30	3.5
N	0.00	0.00	0.19	0.66	0.23	0.47	0.28	0.19	0.09	0.14	0.05	0.00	0.00	0.00	0.00	2.30	2.6
TOTAL	0.00	1.01	4.66	4.65	3.32	3.28	4.12	2.91	2.89	1.86	2.44	1.69	0.83	0.38	0.28	34.32	3.2

NUMBER OF INVALID OBSERVATIONS= 7.

PERCENT OF VALID OBSERVATIONS= 34.3

TABLE 159 - F

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

		DT100 = +1.6 TO +4.0 IN PERCENT										DATA USED -- WD10 , WS10 , DT100																								
		SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION																																		
SECTOR		0.0		0.5		1.0		1.5		2.0		2.5		3.0		3.5		4.0		4.5		5.0		6.0		7.0		8.0		9.0		TOTAL	UBAR			
		TO	0.4	TO	0.9	TO	1.4	TO	1.9	TO	2.4	TO	2.9	TO	3.4	TO	3.9	TO	4.4	TO	4.9	TO	5.9	TO	6.9	TO	7.9	TO	8.9	TO	9.9			INF		
SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION																																				
NNE		0.00	0.00	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	1.6			
NE		0.00	0.00	0.19	0.19	0.00	0.09	0.14	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	2.2			
ENE		0.00	0.00	0.05	0.05	0.00	0.14	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	2.3			
E		0.00	0.10	0.09	0.00	0.00	0.09	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	2.3			
ESE		0.05	0.05	0.28	0.19	0.09	0.09	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.8			
SE		0.09	0.05	0.14	0.05	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	2.7			
SSE		0.00	0.05	0.09	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	2.3			
S		0.00	0.05	0.09	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	3.4			
SSW		0.00	0.14	0.24	0.10	0.14	0.09	0.09	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	2.4			
SW		0.00	0.05	0.23	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	2.3			
WSW		0.05	0.05	0.42	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.9			
W		0.00	0.09	0.75	0.19	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.3			
WNW		0.00	0.05	0.61	0.65	0.09	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	1.5			
NW		0.00	0.14	0.19	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	1.3			
NNW		0.00	0.00	0.14	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	3.2			
N		0.00	0.00	0.09	0.14	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	2.2			
TOTAL		0.19	0.82	3.65	2.13	0.75	0.69	0.74	0.38	0.38	0.14	0.41	0.41	0.23	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.59	2.1			

NUMBER OF INVALID OBSERVATIONS= 2.

PERCENT OF VALID OBSERVATIONS= 10.6



TABLE 159 - G

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE SERIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = +4.1 TO +INF IN PERCENT DATA USED -- WD10 WS10 DT100

## SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION

SECTOR	0.0 TO	0.5 TO	1.0 TO	1.5 TO	2.0 TO	2.5 TO	3.0 TO	3.5 TO	4.0 TO	4.5 TO	5.0 TO	6.0 TO	7.0 TO	8.0 TO	9.0 TO	TOTAL	UBAR
	0.4	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	4.9	5.9	6.9	7.9	8.9	INF		
NNE	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.09	2.9
NE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
ENE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
E	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1.2
ESE	0.00	0.10	0.09	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.33	1.2
SE	0.00	0.00	0.24	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	2.4
SSE	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	1.5
S	0.00	0.09	0.05	0.05	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.53	2.2
SSW	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.38	3.2
SW	0.00	0.05	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	1.7
WSW	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.9
W	0.00	0.09	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	1.0
WNW	0.00	0.05	0.24	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.2
NW	0.00	0.09	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	1.1
NNW	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.19	3.7
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.09	4.8
TOTAL	0.00	0.57	1.37	0.52	0.05	0.05	0.04	0.19	0.23	0.04	0.23	0.04	0.00	0.00	0.00	3.33	2.0

NUMBER OF INVALID OBSERVATIONS= 2.

PERCENT OF VALID OBSERVATIONS= 3.3

TABLE 15B - ALL

DATA PERIOD 04/01/1990 THROUGH 06/30/1990 RUN FROM TAPE TRIES TRI-EX

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN NUCLEAR STATION

## JOINT FREQUENCY DISTRIBUTION WIND DIRECTION VS. WIND SPEED IN METERS/SEC FOR

DT100 = -INF TO +INF IN PERCENT										DATA USED -- WD10 , WS10 , DT100									
SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION																			
SECTOR	0.0 TO 0.4	0.5 TO 0.9	1.0 TO 1.4	1.5 TO 1.9	2.0 TO 2.4	2.5 TO 2.9	3.0 TO 3.4	3.5 TO 3.9	4.0 TO 4.4	4.5 TO 4.9	5.0 TO 5.9	6.0 TO 6.9	7.0 TO 7.9	8.0 TO 8.9	9.0 TO INF	TOTAL	UBAR		
SECTOR IS WIND DIRECTION NOT AFFECTED DIRECTION																			
NNE	0.00	0.05	0.84	0.94	0.37	0.61	0.47	0.19	0.14	0.00	0.00	0.00	0.00	0.00	0.00	3.61	2.2		
NE	0.00	0.05	0.43	0.66	0.33	0.47	0.51	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.58	2.3		
ENE	0.00	0.09	0.14	0.28	0.70	0.61	0.19	0.00	0.05	0.05	0.00	0.04	0.00	0.00	0.00	2.15	2.4		
E	0.00	0.09	0.66	0.75	0.84	0.42	0.52	0.24	0.42	0.33	0.14	0.09	0.00	0.00	0.00	4.50	2.7		
ESE	0.05	0.28	0.75	0.99	0.61	0.75	0.75	0.37	0.28	0.42	0.52	0.80	0.00	0.00	0.00	6.47	3.2		
SE	0.09	0.14	0.94	1.12	1.12	1.17	1.41	0.80	1.12	0.89	0.80	0.70	0.52	0.14	0.05	11.01	3.5		
SSE	0.00	0.19	0.80	0.28	0.19	0.51	0.42	0.89	1.41	1.03	1.97	2.20	0.94	1.31	0.56	12.73	5.2		
S	0.00	0.28	0.52	0.66	0.28	0.14	0.37	0.51	0.61	0.61	1.36	1.26	0.70	0.66	0.66	8.62	5.1		
SSW	0.00	0.19	0.52	0.23	0.28	0.33	0.28	0.33	0.61	0.51	1.03	0.66	0.19	0.37	0.14	5.67	4.5		
SW	0.00	0.14	0.47	0.24	0.23	0.38	0.09	0.14	0.14	0.19	0.28	0.14	0.09	0.00	0.00	2.53	3.1		
WSW	0.05	0.19	0.65	0.23	0.05	0.33	0.23	0.09	0.33	0.05	0.23	0.05	0.00	0.00	0.00	2.48	2.6		
W	0.00	0.23	1.45	0.56	0.33	0.28	0.38	0.28	0.33	0.05	0.09	0.00	0.00	0.00	0.00	3.98	2.2		
WNW	0.00	0.47	1.56	1.22	0.51	0.61	0.89	0.47	0.09	0.19	0.05	0.00	0.30	0.00	0.00	6.00	2.1		
NW	0.00	0.42	1.26	0.89	1.17	0.89	0.80	0.66	0.61	0.89	1.31	0.57	0.28	0.05	0.00	9.75	3.3		
NNW	0.00	0.09	0.56	0.66	0.98	1.22	0.89	0.98	0.61	1.08	2.11	0.40	0.47	0.14	0.05	10.64	4.0		
N	0.00	0.09	0.80	1.97	0.84	1.08	0.89	0.38	0.42	0.33	0.37	0.09	0.00	0.00	0.05	7.31	2.7		
TOTAL	0.19	2.99	12.19	11.58	8.83	9.80	9.09	6.56	7.17	6.62	10.26	7.35	3.19	2.67	1.51	100.00	3.6		

NUMBER OF INVALID OBSERVATIONS= 50.

PERCENT OF VALID OBSERVATIONS= 97.7

RELEASE NUMBER 90001

CONTAINMENT PURGE

STARTING TIME JAN 3, 1990 HOUR 15 MINUTE 30

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
15	3.0	183.7	-1.7
16	4.0	315.9	-1.6
17	4.6	318.8	-1.4
18	4.4	230.7	-1.2
19	4.0	173.4	-0.9
20	4.0	109.6	-0.6
21	2.4	177.4	0.9
22	2.8	294.5	2.5
23	2.5	194.3	3.0
24	2.3	139.4	3.6
1	2.5	6.7	3.6
2	2.3	5.8	4.4
3	2.3	296.4	4.4
4	2.7	318.3	4.3
5	2.4	342.5	4.3
6	3.0	148.9	4.2
7	2.4	242.1	2.9
8	4.3	116.3	2.8
9	4.9	243.8	0.6
10	6.8	103.9	-1.2
11	6.4	242.0	-1.2
12	7.3	105.6	-1.3
13	10.4	123.1	-1.3
14	7.3	143.9	-1.0
15	8.0	109.8	-1.3
16	8.5	291.8	-1.0
17	8.6	96.7	-1.0
18	8.4	103.8	-0.9
19	7.6	156.7	-0.9
20	7.9	127.3	-0.6
21	5.8	136.4	0.4
22	4.4	133.3	1.6
23	4.2	127.2	2.0
24	3.5	123.4	2.4
1	5.0	126.0	2.6
2	5.0	121.3	3.1
3	4.6	121.5	2.2
4	4.5	117.3	2.7
5	3.7	119.1	2.8
6	2.3	137.5	2.2
7	2.2	121.3	1.6
8	2.4	145.4	0.3
9	6.3	161.0	0.3
10	16.5	294.4	7.3
11	23.0	356.5	12.5
12	14.3	223.7	2.8
13	9.3	169.3	-1.4
14	10.1	176.7	-1.3
15	10.6	167.4	-1.3



16	11.4	154.3	-1.2
17	11.1	157.6	-1.2
18	10.1	147.4	-1.1
19	8.7	151.0	-0.9
20	5.8	138.5	-0.6
21	5.3	143.4	0.7
22	4.7	140.4	2.9
23	5.8	131.8	3.9
24	6.4	159.2	3.5
1	7.2	182.1	3.0
2	7.5	195.6	3.3
3	7.1	184.1	2.8
4	6.8	181.6	3.1
5	6.1	162.1	2.9
6	5.8	177.4	3.2
7	5.4	173.9	2.8
8	6.4	182.7	1.1
9	8.2	195.2	-0.4
10	8.9	199.9	-0.9
11	8.9	205.7	-1.3
12	10.5	206.0	-1.4
13	10.2	201.4	-1.4
14	9.4	204.1	-1.5
15	10.1	193.5	-1.3
16	9.6	196.0	-1.4
17	7.5	207.3	-1.4
18	6.7	201.3	-1.2
19	4.8	208.8	-0.9
20	3.8	183.0	-0.1
21	2.8	235.2	2.2
22	2.2	105.4	3.3
23	2.4	65.9	4.6
24	2.6	225.4	3.3
1	2.2	175.2	3.0
2	2.3	230.5	2.9
3	2.1	304.5	3.2
4	1.9	281.8	2.3
5	2.2	266.1	2.6
6	2.3	284.2	2.6
7	3.0	291.7	1.6
8	2.7	303.5	1.1
9	6.3	11.1	-0.6
10	5.1	46.3	-1.1
11	5.4	91.2	-1.3
12	4.6	29.5	-2.0
13	4.2	37.2	-1.7
14	3.9	71.6	-1.9
15	3.7	72.4	-1.7
16	2.5	72.6	-1.4
17	2.9	39.2	-1.6
18	2.4	1.8	-1.4
19	2.0	61.6	-1.2
20	3.2	85.6	-0.6
21	2.8	28.6	0.9
22	2.4	129.5	1.6

23	2.9	113.7	2.1
24	2.4	115.4	2.4
1	4.5	115.7	2.5
2	4.2	124.8	2.0
3	3.0	102.9	2.4
4	4.9	164.6	2.3
5	5.4	163.3	2.3
6	5.7	203.6	3.7
7	8.9	209.9	2.9

STOP TIME    JAN    8, 1990    HOUR   6 MINUTE   3

RELEASE NUMBER 90002

CONTAINMENT PURGE

STARTING TIME JAN 11, 1991 HOUR 17 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	5.0	192.0	-1.3
18	2.6	165.1	-1.3
19	1.0	213.7	-1.2
20	0.2	25.4	-1.1
21	3.1	9.4	-0.6
22	5.5	117.2	-0.6
23	3.2	115.6	-0.2
24	1.4	32.9	0.3
1	5.2	118.5	1.0
2	4.3	295.7	0.5
3	2.8	262.4	0.6
4	3.2	72.7	0.6
5	2.4	261.8	1.5
6	2.6	253.0	1.5
7	2.6	332.8	1.3
8	2.4	225.9	0.7
9	3.9	334.7	-1.4
10	3.4	27.7	-1.5
11	4.7	18.1	-1.9
12	5.3	35.0	-1.9
13	6.3	43.3	-2.0
14	5.4	27.7	-1.7
15	6.3	16.4	-1.6
16	7.5	19.9	-1.8
17	6.1	45.3	-1.5
18	6.1	49.5	-1.4
19	5.4	75.3	-1.2
20	5.3	1.8	-1.0
21	4.3	5.2	-0.4
22	2.7	51.7	0.6
23	2.6	200.2	1.2
24	2.5	238.7	0.8
1	2.4	227.7	0.8
2	2.3	293.4	0.4
3	2.5	291.7	1.0
4	2.5	297.2	1.3
5	2.4	265.9	1.6
6	2.6	295.1	2.0
7	2.5	291.2	1.9
8	2.8	316.7	0.8
9	2.7	335.9	-1.1
10	2.3	338.0	-1.4
11	3.5	355.0	-1.8
12	4.6	342.3	-1.8
13	5.3	342.5	-1.9
14	6.3	355.8	-1.7
15	7.0	352.3	-1.7
16	7.0	352.0	-1.4
17	7.7	342.3	-1.4



18	8.3	354.0	-1.2
19	7.3	353.8	-0.8
20	4.9	352.4	0.6
21	2.6	308.2	1.2
22	2.6	215.1	0.2
23	3.8	353.5	0.2
24	3.9	91.2	-0.4
1	3.3	276.5	-0.1
2	4.0	153.0	-0.3
3	3.3	78.1	-0.1
4	4.1	83.1	-0.3
5	2.6	66.8	0.2
6	2.4	62.1	-0.2
7	2.5	35.7	0.1
8	2.5	44.7	-0.1
9	3.3	56.7	-1.1
10	4.4	53.0	-1.0
11	3.0	49.0	-0.9
12	2.5	59.5	-1.0
13	3.9	78.4	-1.4
14	6.8	93.6	-1.3
15	6.3	101.4	-1.1
16	7.3	96.7	-1.0
17	8.3	84.1	-0.9
18	8.1	92.6	-0.7
19	8.2	87.5	-0.7
20	8.5	87.4	-1.0
21	7.3	86.5	-0.1
22	5.6	47.4	0.3
23	5.1	225.9	0.3
24	2.9	312.9	-0.1
1	6.1	93.6	-0.4
2	5.5	96.3	-0.2
3	4.3	75.5	-0.3
4	6.4	89.1	-0.1
5	9.6	93.2	-0.1
6	8.6	83.8	0.2
7	7.4	80.4	-0.4
8	5.9	58.9	-0.1
9	6.1	70.5	-0.1

STOP TIME JAN 15, 1990 HOUR 8 MINUTE 12

RELEASE NUMBER 90003      CONTAINMENT PURGE

STARTING TIME      JAN 18,1990      HOUR 13 MINUTE 20

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	7.5	315.8	-1.7
14	6.7	298.4	-1.2
15	5.7	317.7	-1.0
16	5.8	322.3	-0.2
17	5.8	308.0	-0.6
18	9.4	325.4	-0.8
19	8.2	335.7	-0.8
20	7.7	331.9	-0.5
21	7.6	329.9	-0.6
22	5.8	324.2	1.0

STOP TIME      JAN 18,1990      HOUR 21 MINUTE 29

STARTING TIME      JAN 18,1990      HOUR 22 MINUTE 41

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
22	5.8	324.2	1.0
23	5.0	320.4	1.2
24	5.6	338.2	0.5
1	5.0	331.2	0.1
2	6.5	335.5	-0.2
3	7.0	339.9	-0.5
4	4.6	341.8	-0.1
5	4.5	334.0	-0.5
6	4.6	336.8	-0.5
7	3.8	331.6	-0.5
8	4.4	333.9	-1.1
9	5.1	335.4	-1.4
10	4.5	337.5	-1.4
11	5.1	343.4	-1.5
12	6.0	345.8	-1.5
13	6.2	340.4	-1.6
14	6.9	341.4	-1.5
15	5.8	344.9	-1.4
16	6.2	344.5	-1.1
17	5.7	343.7	-1.0
18	5.9	352.6	-1.0
19	4.7	349.7	-0.9
20	2.5	2.2	-0.7
21	0.2	333.8	0.4
22	1.1	307.3	2.1
23	4.1	305.0	3.1
24	4.0	307.3	3.4
1	4.0	310.8	3.5
2	4.4	315.5	3.1

3	5.0	313.9	3.0
4	4.1	300.9	3.3
5	4.6	310.5	2.7
6	5.1	317.9	2.1
7	4.4	320.4	1.4
8	3.9	311.9	0.6
9	3.6	327.9	-0.8
10	4.2	340.3	-1.4
11	5.3	347.3	-1.5
12	3.4	349.4	-1.5
13	4.3	350.5	-1.6
14	4.2	344.9	-1.4
15	5.3	348.1	-1.4
16	5.4	346.2	-1.3
17	5.3	345.9	-1.0
18	5.7	348.9	-0.8
19	3.7	350.8	-0.4
20	1.8	348.4	-0.1
21	1.1	344.0	0.3
22	3.4	333.9	1.0
23	3.6	333.4	1.5
24	3.1	279.2	2.0
1	2.8	288.8	2.1
2	2.8	297.9	2.6
3	3.1	279.6	2.7
4	3.2	288.6	2.0
5	3.0	257.2	2.4
6	3.4	285.8	3.0
7	3.3	309.1	1.9
8	2.7	314.3	0.4
9	2.6	307.9	-0.5
10	3.7	330.6	-1.2
11	3.5	356.1	-1.3
12	4.9	355.8	-1.7
13	5.4	1.0	-1.8
14	5.7	7.4	-1.6
15	6.0	58.1	-1.3

STOP TIME JAN 21, 1990 HOUR 14 MINUTE 58

VI-42



RELEASE NUMBER 90003      CONTAINMENT PURGE

STARTING TIME      JAN 21, 1990      HOUR 21 MINUTE 19

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
21	3.4	64.3	0.4
22	3.2	249.3	1.7
23	3.0	281.4	1.9
24	4.5	240.3	2.3
1	3.7	244.6	2.6

STOP TIME      JAN 22, 1990      HOUR 0 MINUTE 49

RELEASE NUMBER 90004 CONTAINMENT PURGE

STARTING TIME JAN 24, 1990 HOUR 19 MINUTE 54

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
19	7.7	135.6	-0.5
20	4.6	129.8	0.2
21	3.8	138.6	0.9
22	3.7	126.6	1.7
23	4.7	135.0	1.4
24	5.5	138.5	1.0
1	0.6	110.0	2.3
2	3.6	230.2	2.3
3	0.8	153.1	3.3
4	1.6	109.1	3.4
5	0.6	111.7	1.7
6	2.4	134.3	2.0
7	2.4	120.4	0.8
8	3.7	123.8	-0.3
9	4.0	112.3	-1.0
10	4.7	131.1	-1.2
11	6.3	121.8	-1.3
12	7.9	128.7	-1.0
13	8.2	128.2	-1.0
14	7.8	127.9	-1.0
15	8.3	119.9	-1.0
16	8.3	121.4	-1.0
17	7.6	121.9	-0.8
18	6.2	126.4	-0.6
19	4.4	122.4	0.0
20	2.9	118.1	0.7
21	2.9	120.8	0.9
22	3.4	130.1	0.9
23	4.0	138.6	0.7
24	5.2	145.9	0.2
1	4.8	145.6	0.2
2	3.7	140.6	0.7
3	4.5	135.8	1.1
4	3.5	128.5	1.1
5	4.3	128.2	1.6
6	3.9	131.6	1.6
7	6.4	146.6	0.1
8	8.3	157.1	-0.7
9	8.4	165.0	-1.1
10	7.4	174.9	-1.1
11	8.2	177.3	-1.1
12	7.8	174.8	-1.0
13	7.8	175.9	-0.9
14	9.6	170.8	-0.9
15	12.2	168.5	-0.8
16	9.2	166.5	-0.5
17	8.5	176.4	-0.6
18	7.3	172.6	-0.6
19	4.2	154.5	-0.4

20	1.8	147.0	0.4
21	3.7	153.2	0.5
22	4.1	162.1	-0.2
23	5.8	166.2	-0.2
24	7.3	174.4	-0.2
1	9.1	171.5	-0.2
2	9.6	176.4	-0.2
3	6.4	177.5	-0.2
4	5.7	176.1	-0.1
5	4.0	157.8	-0.3
6	5.9	155.5	-0.5
7	4.8	151.9	-0.8
8	8.2	163.6	-0.7
9	18.5	177.4	-0.6
10	24.0	176.3	-0.6
11	24.0	188.6	-0.8
12	8.7	193.7	-1.0
13	8.6	191.2	-1.1
14	6.1	192.9	-1.2
15	6.0	201.4	-0.9
16	4.5	194.2	-0.6
17	6.4	191.7	-0.8
18	6.1	194.3	-0.6
19	3.7	202.9	-0.2
20	1.6	182.5	0.5
21	2.2	180.0	1.2
22	0.9	136.9	3.5
23	2.2	161.9	3.5
24	7.4	181.2	1.8
1	9.8	197.3	1.2
2	9.8	197.8	0.9
3	10.9	194.2	0.9
4	11.0	192.1	0.6
5	8.9	180.0	0.5
6	4.6	161.0	0.4
7	4.4	157.2	-0.2
8	11.0	158.0	-0.8
9	14.9	172.6	-1.1
10	9.1	189.4	-1.0
11	17.6	193.3	-1.1
12	7.5	191.5	-1.0
13	8.0	193.6	-0.8
14	8.3	210.5	-0.6
15	6.9	204.9	-0.1
16	8.0	217.9	-0.5
17	5.8	216.0	-0.1
18	3.4	245.4	0.3
19	0.6	344.1	1.5
20	1.2	206.7	1.9
21	1.3	321.8	3.3
22	12.5	224.6	1.3
23	7.2	223.2	0.2
24	6.9	219.3	1.8
1	1.9	200.0	2.2
2	1.5	231.0	3.2

3	1.1	182.9	3.4
4	1.0	286.9	4.9
5	0.5	158.3	4.9
6	1.4	310.7	4.6
7	16.8	316.3	-0.2
8	2.8	312.1	0.2

STOP TIME JAN 29, 1990 HOUR 7 MINUTE 13



RELEASE NUMBER 90005 CONTAINMENT PURGE

STARTING TIME FEB 1, 1990 HOUR 17 MINUTE 50

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	10.2	6.1	-1.0
18	9.8	47.2	-0.8
19	8.6	101.7	-0.5
20	7.1	134.5	-0.1
21	5.7	117.3	0.6
22	5.8	119.0	1.0
23	6.2	119.3	1.0
24	6.8	170.2	0.9
1	5.4	159.5	0.5
2	4.8	95.5	0.5
3	3.6	127.8	1.1
4	4.5	78.0	1.2
5	3.5	100.5	1.5
6	4.3	121.3	2.1
7	4.0	72.0	2.0
8	6.6	94.2	C.4
9	8.5	3.2	-0.5
10	8.2	3.2	-0.6
11	7.6	2.6	-0.7
12	8.2	2.2	-0.8
13	8.0	2.0	-0.7
14	8.0	4.0	-0.8
15	8.0	221.3	-0.8
16	1.3	198.3	-0.7
17	8.4	191.5	-0.4
18	8.5	189.7	-0.6
19	7.3	183.4	-0.5
20	4.0	180.7	-0.1
21	1.7	112.4	0.5
22	3.9	177.8	0.5
23	4.2	184.6	0.1
24	5.8	190.5	0.1
1	7.5	189.9	-99.0
2	9.4	193.9	-0.1
3	9.6	194.2	0.1
4	6.5	186.2	0.3
5	4.1	188.1	0.5
6	5.9	188.9	0.6
7	5.1	179.0	0.5
8	8.3	188.6	0.1
9	11.0	187.3	-0.2
10	24.1	193.7	-0.4
11	24.0	180.5	-0.2
12	8.4	184.8	-0.6
13	8.8	33.4	-0.8
14	6.0	51.8	-1.0
15	6.3	4.1	-1.0
16	4.4	98.4	-0.8
17		164.8	-0.4

18	6.3	159.1	-0.7
19	6.0	138.2	-0.5
20	3.7	131.8	-99.0
21	1.7	117.3	0.5
22	2.3	136.9	1.4
23	0.8	174.2	3.7
24	2.1	186.3	3.7
1	4.8	186.4	1.9
2	3.9	190.2	1.4
3	3.5	180.0	1.5
4	2.7	189.8	1.4
5	3.8	187.8	1.1
6	2.5	184.0	1.0
7	1.6	157.6	1.0
8	2.6	135.8	-99.0
9	10.3	108.2	-0.6
10	10.2	5.5	-0.6
11	8.3	6.7	-0.9
12	11.5	6.6	-0.8
13	10.7	6.4	-0.9
14	10.0	5.5	-0.6
15	9.1	2.6	-0.5
16	8.1	155.6	0.1
17	7.4	168.9	-0.3
18	5.7	179.5	0.2
19	3.1	156.4	0.6
20	1.0	123.4	1.8
21	2.0	124.8	2.0
22	1.7	118.5	3.4
23	1.1	111.8	1.3
24	3.7	116.6	0.3
1	3.0	131.1	7.1
2	3.3	172.8	5.7
3	5.6	184.2	4.4
4	5.5	184.0	4.6
5	4.9	192.6	4.9
6	4.8	187.1	4.5
7	3.0	168.7	3.8
8	3.9	171.0	1.3

STOP TIME FEB 5, 1990 HOUR 7 MINUTE 40

RELEASE NUMBER 90006

CONTAINMENT PURGE

STARTING TIME FEB 8, 1990 HOUR 20 MINUTE 6

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
20	2.8	275.5	-0.1
21	2.6	244.2	2.3
22	3.2	114.5	4.2
23	4.2	160.1	4.1
24	4.3	224.5	4.2
1	3.2	238.9	5.7
2	3.5	216.4	5.8
3	3.4	163.0	5.9
4	2.4	268.4	5.6
5	0.5	236.4	4.3
6	0.3	270.7	4.8
7	0.3	112.3	4.2
8	1.2	118.3	3.3
9	2.7	98.2	1.7
10	3.7	98.8	0.2
11	4.7	116.1	-0.3
12	3.2	102.1	0.1
13	3.5	110.8	-0.1
14	2.8	95.0	-0.5
15	2.7	144.0	-0.1
16	2.7	84.0	-0.1
17	3.4	80.1	0.3
18	5.1	96.1	0.7
19	2.9	98.5	1.3
20	1.0	126.9	2.9
21	0.6	128.9	3.3

STOP TIME FEB 9, 1990 HOUR 20 MINUTE 37

STARTING TIME FEB 9, 1990 HOUR 20 MINUTE 48

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
20	1.0	126.9	2.9
21	0.6	128.9	3.3
22	0.3	117.7	4.4
23	4.5	120.1	5.9
24	0.2	108.7	5.8
1	5.5	143.7	5.2
2	0.9	104.1	4.0
3	1.4	110.5	3.0
4	1.6	105.5	3.0
5	1.0	97.7	3.2
6	1.2	94.2	3.4
7	1.0	101.6	3.6
8	3.3	123.0	1.7

9	6.4	177.9	0.5
10	5.2	157.4	0.2
11	4.6	143.6	-0.1
12	3.9	128.1	0.1
13	5.7	130.3	0.2
14	7.6	127.4	0.1
15	7.8	140.7	0.3
16	9.1	125.6	0.4
17	7.3	125.0	0.4
18	6.0	125.9	1.1
19	4.4	123.4	1.6
20	2.4	118.4	3.1
21	1.1	129.2	4.4
22	2.3	131.5	4.2
23	4.7	119.0	4.2
24	4.1	136.8	4.3
1	3.1	132.3	5.2
2	4.5	139.1	4.5
3	3.9	130.8	5.5
4	2.9	124.9	4.9
5	1.6	119.1	5.6
6	1.3	121.9	4.7
7	3.4	123.9	3.5
8	4.3	115.8	2.0
9	5.7	145.7	0.6
10	9.3	156.8	0.2
11	12.2	99.8	0.1
12	11.2	149.9	-0.1
13	9.4	144.8	2.3
14	10.0	19.2	14.1
15	9.6	142.7	5.5
16	10.4	141.2	0.2
17	10.0	139.9	0.3
18	9.6	139.2	0.7
19	6.1	129.5	1.4
20	5.5	132.8	2.4
21	6.7	131.0	2.4
22	10.6	148.4	1.2
23	8.7	138.9	1.1
24	8.7	131.8	1.3
1	6.2	136.8	1.1
2	5.3	141.8	0.9
3	5.7	150.1	1.0
4	8.0	191.2	2.3
5	8.1	140.0	4.2
6	7.7	127.8	3.0
7	7.5	128.0	2.2
8	5.5	132.0	1.7

STOP TIME FEB 12, 1990 HOUR 7 MINUTE 28



RELEASE NUMBER 90007      CONTAINMENT PURGE

STARTING TIME      FEB 14, 1990      HOUR 18 MINUTE 2

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	5.9	126.0	0.9
19	16.2	162.7	3.1
20	8.3	177.9	7.4
21	5.5	148.6	3.0
22	8.9	193.8	3.1
23	5.0	179.2	2.1
24	8.5	178.8	2.1
1	9.3	182.2	2.1
2	8.7	179.5	2.8
3	6.3	178.7	3.0
4	3.5	175.6	2.0
5	1.8	157.7	2.1
6	1.5	116.8	2.6
7	1.5	127.4	2.3
8	1.8	174.3	1.0
9	1.3	173.6	0.4
10	2.1	224.6	-1.2
11	2.3	236.4	0.1

STOP TIME      FEB 15, 1990      HOUR 10 MINUTE 19

RELEASE NUMBER 90008      CONTAINMENT PURGE

STARTING TIME      FEB 15, 1990      HOUR 18 MINUTE 59

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	3.4	198.5	1.5
19	1.2	322.2	1.7
20	1.9	208.6	2.1
21	1.8	352.0	1.8
22	0.9	302.3	2.3
23	1.1	107.3	3.0
24	0.6	155.6	3.3
1	2.7	116.0	3.7
2	5.1	116.2	2.7
3	6.4	137.5	2.1
4	8.5	167.6	1.9
5	5.5	144.4	1.8
6	1.5	145.3	1.8
7	1.5	134.5	2.0
8	5.6	121.6	0.9
9	6.4	126.2	0.4

STOP TIME      FEB 16, 1990      HOUR 8 MINUTE 2

STARTING TIME      FEB 16, 1990      HOUR 8 MINUTE 6

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
8	5.6	121.6	0.9
9	6.4	126.2	0.4

STOP TIME      FEB 16, 1990      HOUR 8 MINUTE 39

RELEASE NUMBER 90008 CONTAINMENT PURGE

STARTING TIME FEB 16, 1990 HOUR 5 MINUTE 52

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
9	6.4	126.2	0.4
10	9.7	153.6	0.4
11	8.1	158.7	0.1
12	5.9	166.6	0.1
13	4.8	156.1	0.2
14	4.9	127.7	0.2
15	4.3	120.0	0.1
16	5.2	114.9	0.3
17	5.8	88.3	0.7
18	5.4	89.9	0.8
19	5.0	87.3	1.2

STOP TIME FEB 16, 1990 HOUR 16 MINUTE 19

RELEASE NUMBER 90009

CONTAINMENT PURGE

STARTING TIME FEB 17, 1990 HOUR 5 MINUTE 27

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	0.1	110.3	3.1
6	0.3	102.1	2.9
7	0.9	93.8	2.4
8	3.1	127.1	2.0
9	2.9	132.9	1.4
10	3.8	95.2	1.2
11	5.9	111.9	0.8
12	5.3	107.2	0.5
13	5.5	87.0	0.2
14	6.7	103.4	0.1
15	7.8	98.9	0.5
16	5.9	96.4	0.3
17	5.8	91.6	0.3
18	6.1	91.3	0.7
19	4.0	87.4	0.9
20	4.9	102.4	1.1
21	6.5	110.2	1.0
22	8.2	116.2	1.0
23	5.7	123.9	1.3
24	6.8	130.4	1.1
1	7.0	132.8	1.3
2	5.2	136.3	1.0
3	5.9	107.0	1.1
4	3.8	108.3	1.3
5	4.4	140.1	1.8
6	3.4	126.3	2.2
7	5.7	131.2	2.6
8	9.7	118.1	3.0
9	5.9	130.4	2.3
10	8.7	124.6	0.8
11	6.9	124.3	0.2
12	9.3	127.6	0.4
13	9.9	132.6	-0.5
14	9.4	124.8	-0.7
15	9.5	130.5	0.1

STOP TIME FEB 18, 1990 HOUR 14 MINUTE 53



RELEASE NUMBER 90010

CONTAINMENT PURGE

STARTING TIME FEB 19, 1990 HOUR 1 MINUTE 21

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	4.5	142.5	2.2
2	3.6	129.0	2.4
3	5.0	134.8	2.6
4	2.8	122.6	2.5
5	5.1	157.2	2.3
6	4.6	339.8	1.4
7	1.5	29.9	1.4
8	2.1	88.9	1.7
9	3.2	48.6	2.0
10	6.4	104.3	0.9
11	8.4	112.0	0.3
12	6.2	121.7	-0.7
13	4.0	140.3	-0.1
14	4.1	172.7	0.1
15	5.8	175.7	0.2
16	1.7	206.9	0.6
17	1.1	351.2	0.6
18	0.9	343.4	1.2
19	1.8	5.1	1.3
20	2.3	58.7	1.0
21	3.1	80.8	1.3
22	1.5	80.7	1.2
23	1.8	80.0	1.3
24	0.7	347.5	1.8
1	0.8	233.0	2.9
2	0.6	113.1	3.1
3	0.1	76.6	3.2
4	0.3	298.0	3.5
5	3.8	227.9	3.7
6	0.2	340.1	3.6

STOP TIME FEB 20, 1990 HOUR 5 MINUTE 43

STARTING TIME FEB 20, 1990 HOUR 5 MINUTE 48

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	3.8	227.9	3.7
6	0.2	346.1	3.6
7	0.3	250.1	3.8
8	3.3	118.1	2.2
9	2.6	110.5	0.9
10	3.8	87.7	0.5
11	1.2	62.2	1.0
12	1.8	312.3	1.6
13	2.4	318.6	2.3
14	2.2	353.0	2.4
15	2.9	63.7	2.4

STOP TIME FEB 20, 1990 HOUR 14 MINUTE 41

RELEASE NUMBER 90011      CONTAINMENT PURGE

STARTING TIME      FEB 20,1990      HOUR 15 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
15	2.9	63.7	2.4
16	0.8	351.1	2.8
17	5.1	101.3	2.3

STOP TIME      FEB 20,1990      HOUR 16 MINUTE 40

STARTING TIME      FEB 20,1990      HOUR 17 MINUTE 10

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	5.1	101.3	2.3
18	7.1	133.1	1.7
19	0.9	124.9	1.8
20	4.7	136.5	2.0
21	6.4	142.7	1.9
22	9.5	143.5	1.8
23	8.8	161.7	1.4
24	3.9	162.9	1.7
1	2.0	296.0	1.4
2	1.4	298.3	1.8
3	3.5	275.3	1.8
4	3.2	272.8	2.1
5	0.7	157.1	3.1
6	1.3	159.2	2.7
7	0.7	124.5	2.0
8	1.3	126.0	1.6
9	1.0	105.8	1.2
10	3.9	162.6	0.8
11	4.2	143.8	0.7
12	5.2	158.6	0.5
13	7.1	187.0	0.4
14	4.1	199.0	0.5
15	2.0	194.6	0.4
16	2.3	181.2	0.6
17	2.3	202.5	0.8

STOP TIME      FEB 21,1990      HOUR 16 MINUTE 20



RELEASE NUMBER 90012

CONTAINMENT PURGE

STARTING TIME FEB 21, 1990 HOUR 16 MINUTE 45

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
16	2.3	181.2	0.6
17	2.3	202.5	0.8
18	0.7	205.0	1.1
19	0.8	341.6	1.2
20	0.3	331.2	1.3
21	0.3	151.3	2.3
22	0.5	316.2	3.2
23	0.9	291.2	2.8

STOP TIME FEB 21, 1990 HOUR 22 MINUTE 14



RELEASE NUMBER 90013 CONTAINMENT PURGE

STARTING TIME FEB 22, 1990 HOUR 18 MINUTE 28

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	6.3	185.4	-0.4
19	5.8	206.4	0.2
20	2.8	246.4	0.3
21	4.1	224.3	0.9
22	3.9	307.4	0.8
23	2.9	213.1	1.2
24	3.4	249.2	1.4
1	2.9	155.4	1.3
2	4.8	115.2	1.5
3	7.1	173.5	-0.5
4	8.6	134.2	-0.3
5	10.6	232.4	-0.3
6	7.9	144.4	-0.2
7	3.7	178.3	-0.3

STOP TIME FEB 23, 1990 HOUR 6 MINUTE 39

RELEASE NUMBER 90014      CONTAINMENT PURGE

STARTING TIME      FEB 23,1990      HOUR 7 MINUTE 10

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
7	3.7	178.3	-0.3
8	3.6	326.0	-0.1
9	7.7	120.9	-0.1
10	8.7	124.0	-0.4
11	11.2	153.5	-0.2
12	10.3	152.5	-0.3
13	8.4	166.0	-0.2
14	7.1	156.7	-0.9
15	7.0	128.3	-0.5
16	6.7	118.5	-0.4
17	7.2	119.1	-0.5
18	8.4	90.7	-0.5
19	8.1	88.5	-0.6
20	7.7	83.8	-0.6
21	6.3	99.1	-0.5
22	5.2	119.4	0.2
23	5.4	117.8	0.3
24	6.8	117.6	0.4
1	6.8	122.0	0.2
2	4.6	115.5	0.5
3	3.8	122.6	0.4
4	4.3	144.5	0.6
5	3.9	8.0	0.7
6	3.4	108.7	1.2

STOP TIME      FEB 24,1990      HOUR 5 MINUTE 50

RELEASE NUMBER 90015

CONTAINMENT PURGE

STARTING TIME FEB 24, 1990 HOUR 22 MINUTE 38

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
22	8.4	111.	-0.8
23	10.7	117.1	-0.7
24	8.1	123.2	-0.8
1	6.6	130.4	-0.6
2	7.2	132.9	-0.4
3	5.0	137.1	-0.6
4	5.8	104.6	-0.5
5	3.7	105.0	-0.4
6	4.4	139.8	-0.5
7	3.3	125.8	-0.5
8	5.8	129.9	-0.5
9	9.3	121.1	-0.5

STOP TIME FEB 25, 1990 HOUR 8 MINUTE 12



RELEASE NUMBER 90016 CONTAINMENT PURGE

STARTING TIME FEB 25, 1990 HOUR 8 MINUTE 30

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
8	5.8	129.9	-0.5
9	9.3	121.1	-0.5
10	6.1	131.5	-0.5
11	8.2	126.7	-0.5
12	7.4	123.9	-0.6

STOP TIME FEB 25, 1990 HOUR 11 MINUTE 25

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RELEASE NUMBER 90017      CONTAINMENT PURGE

STARTING TIME      FEB 25,1990      HOUR 16 MINUTE 22

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
16	9.8	132.0	-1.2
17	9.4	126.7	-1.2
18	9.1	129.3	-1.0
19	9.1	137.2	-0.7
20	6.4	125.7	-0.2
21	2.9	128.5	0.8
22	2.2	119.5	1.4
23	3.9	127.6	1.6
24	4.3	123.0	1.8
1	3.9	134.3	1.2
2	4.5	141.5	0.3
3	3.4	129.3	0.4
4	4.9	133.9	0.3
5	2.7	151.8	0.4
6	5.0	276.2	0.4
7	4.2	292.2	-0.4
8	0.7	267.5	-0.4
9	1.8	189.9	-0.4
10	2.3	33.2	-0.6
11	6.5	103.3	-0.2
12	8.3	109.3	-1.1
13	6.4	101.4	-0.8
14	4.1	137.5	-0.2
15	3.9	174.6	-0.1

STOP TIME      FEB 26,1990      HOUR 14 MINUTE 56

STARTING TIME      FEB 26,1990      HOUR 16 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
16	5.8	176.7	-0.3
17	0.5	202.3	0.1

STOP TIME      FEB 26,1990      HOUR 16 MINUTE 32

RELEASE NUMBER 90017

CONTAINMENT PURGE

STARTING TIME FEB 26, 1990 HOUR 16 MINUTE 33

TIME HOLR	WS10 MPH	WD10 DEG	DT110 DEG C
16	5.8	176.7	-0.3
17	0.5	202.3	0.1
18	0.7	341.9	-0.2
19	0.1	343.3	-0.3
20	0.8	9.4	-0.3
21	2.1	57.4	-0.6
22	2.5	78.3	-0.5
23	1.3	79.1	-0.3
24	1.9	82.6	-0.5
1	3.0	31.6	-0.8
2	3.1	230.7	0.4
3	3.2	160.3	1.0
4	4.1	285.3	0.9
5	3.6	294.2	1.4
6	3.7	309.5	2.0
7	4.8	299.2	1.3
8	3.7	295.1	2.0
9	5.6	118.0	1.3
10	4.9	111.9	0.1
11	6.6	88.0	-0.6
12	3.3	64.5	-0.7
13	3.9	314.3	-1.6

STOP TIME FEB 27, 1990 HOUR 12 MINUTE 25

RELEASE NUMBER 90018      CONTAINMENT PURGE

STARTING TIME      MAR    4, 1990      HOUR 7 MINUTE 23

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
7	9.0	350.0	-0.7
8	8.4	350.0	-0.7
9	8.1	350.0	-0.7
10	7.8	350.0	-1.0
11	7.2	330.0	-1.5
12	6.9	320.0	-1.5
13	6.6	310.0	-1.7

STOP TIME      MAR    4, 1990      HOUR 12 MINUTE 49



RELEASE NUMBER 90019 CONTAINMENT PURGE

STARTING TIME MAR 4, 1990 HOUR 20 MINUTE 38

TIME  
HOUR

WS10 MPH	WD10 DEG	DT110 DEG C
3.3	25.0	1.5
3.0	40.0	3.0
4.0	50.0	4.0
4.0	60.0	4.0

STOP TIME MAR 4, 1990 HOUR 22 MINUTE 46

STARTING TIME MAR 4, 1990 HOUR 23 MINUTE 6

TIME  
HOUR

WS10 MPH	WD10 DEG	DT110 DEG C
4.0	60.0	4.0
4.0	70.0	4.0
2.4	55.0	4.0
1.8	60.0	4.0
1.2	70.0	4.0
1.2	80.0	4.0
1.2	85.0	2.0
1.2	90.0	0.5
1.2	95.0	-1.5
1.8	100.0	-1.5
2.4	110.0	-1.5
3.0	115.0	-1.5
3.6	125.0	-1.5
3.9	135.0	-1.5
4.2	145.0	-1.5
4.5	135.0	-1.7

STOP TIME MAR 5, 1990 HOUR 13 MINUTE 9



RELEASE NUMBER 90020      CONTAINMENT PURGE

STARTING TIME      MAR    6,1990      HOUR   4 MINUTE 42

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
4	6.6	115.0	2.5
5	5.1	125.0	1.5
6	4.5	135.0	0.5
7	3.6	145.0	-0.5
8	3.6	145.0	-0.5

STOP TIME      MAR    6,1990      HOUR   7 MINUTE 53

STARTING TIME      MAR    6,1990      HOUR   7 MINUTE 59

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
7	3.6	145.0	-0.5
8	3.6	145.0	-0.5
9	3.6	145.0	-0.5
10	3.6	145.0	-1.0
11	3.3	115.0	-1.0
12	3.0	75.0	-1.5
13	3.0	45.0	-1.5

STOP TIME      MAR    6,1990      HOUR 12 MINUTE 21

RELEASE NUMBER 90021		CONTAINMENT PURGE	
STARTING TIME		MAR 6, 1990	HOUR 13 MINUTE 7
TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	3.0	45.0	-1.5
14	3.9	75.0	-1.5
15	4.2	115.0	-1.5
16	4.8	135.0	-1.5
17	4.8	130.0	-1.5
18	4.8	125.0	-1.5
19	4.8	115.0	-1.0
20	5.1	125.0	-0.5
21	5.4	145.0	-0.5
22	6.0	155.0	-0.5
23	4.8	220.0	-0.5
24	3.6	295.0	-0.5
1	3.6	15.0	-0.5
2	3.9	55.0	-0.5
3	4.2	85.0	-0.5
4	4.8	115.0	-0.5
5	3.6	165.0	-0.5
6	3.0	205.0	-0.5

STOP TIME		MAR 7, 1990	HOUR 5 MINUTE 45
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RELEASE NUMBER 90022

CONTAINMENT PURGE

STARTING TIME MAR 7, 1990 HOUR 5 MINUTE 46

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	3.6	165.0	-0.5
6	3.0	205.0	-0.5
7	2.4	265.0	-0.5
8	2.4	255.0	-0.7
9	2.7	245.0	-1.0

STOP TIME MAR 7, 1990 HOUR 8 MINUTE 33



RELEASE NUMBER 90023 CONTAINMENT PURGE

STARTING TIME MAR 7, 1990 HOUR 23 MINUTE 0

TIME  
HOUR

WS10  
MPH

WD10  
DEG

DT110  
DEG C

23 1.8 115.0 4.0  
24 2.1 125.0 4.0  
1 2.4 125.0 4.0  
2 2.4 115.0 4.0  
3 2.7 110.0 4.2  
4 3.0 105.0 4.4  
5 2.7 115.0 4.6  
6 2.4 135.0 2.5  
7 2.4 145.0 1.0  
8 3.6 145.0 0.5  
9 4.8 145.0 -0.5  
10 5.4 145.0 -0.5  
11 4.8 135.0 -1.0  
12 4.2 125.0 -1.5  
13 3.6 115.0 -1.7  
14 3.6 135.0 -1.7

STOP TIME MAR 8, 1990 HOUR 13 MINUTE 37



RELEASE NUMBER 00024      CONTAINMENT PURGE

STARTING TIME      MAR      8, 1990      HOUR 19 MINUTE 36

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
19	3.0	165.0	-0.5
20	3.3	165.0	0.5
21	3.6	160.0	1.0
22	4.2	155.0	1.5
23	3.9	155.0	1.5
24	3.6	150.0	1.0
1	3.6	145.0	-0.5
2	3.6	145.0	-0.5
3	3.6	145.0	-0.5
4	3.6	145.0	-0.5
5	3.0	145.0	-0.5
6	2.7	150.0	-0.5
7	1.2	155.0	-1.0
8	3.3	160.0	-1.0
9	4.2	170.0	-1.5
10	4.8	175.0	-1.5
11	3.9	165.0	-1.5
12	3.0	155.0	-1.6
13	2.4	145.0	-1.7

STOP TIME      MAR      9, 1990      HOUR 12 MINUTE 18

RELEASE NUMBER 90025 CONTAINMENT PURGE

STARTING TIME MAR 9, 1990 HOUR 12 MINUTE 28

TIME  
HOUR

WS10  
MPH

WD10  
DEG

DT110  
DEG C

12 3.0 155.0 -1.6  
13 2.4 145.0 -1.7  
14 2.7 135.0 -1.7  
15 3.0 125.0 -1.7  
16 3.6 115.0 -1.7  
17 3.0 120.0 -1.5  
18 2.7 130.0 -1.0  
19 2.4 135.0 0.5  
20 2.7 135.0 1.0  
21 3.0 130.0 2.0  
22 3.6 125.0 4.0  
23 3.9 135.0 2.0  
24 4.2 145.0 1.0  
1 4.2 155.0 -0.5  
2 3.9 125.0 -0.5  
3 3.6 85.0 -0.5  
4 3.6 65.0 -0.5  
5 3.6 65.0 -0.5  
6 3.3 65.0 -0.5  
7 3.0 65.0 -0.8  
8 3.9 85.0 -1.0  
9 4.1 105.0 -1.0  
10 5.4 125.0 -1.0  
11 5.2 130.0 2  
12 5.1 135.0  
13 4.8 145.0  
14 4.2 140.0 -1.1

STOP TIME MAR 10, 1990 HOUR 13 MINUTE 29

STARTING TIME MAR 10, 1990 HOUR 13 MINUTE 52

TIME  
HOUR

WS10  
MPH

WD10  
DEG

DT110  
DEG C

13 4.8 145.0 -1.5  
14 4.2 140.0 -1.5  
15 3.6 135.0 -1.5  
16 3.0 135.0 -1.5  
17 2.8 135.0 -1.0  
18 2.7 145.0 -1.0  
19 2.4 155.0 -1.0  
20 4.2 195.0 -0.5  
21 7.2 245.0 -0.5  
22 10.2 290.0 -0.5

STOP TIME MAR 10, 1990 HOUR 21 MINUTE 6

RELEASE NUMBER 90025      CONTAINMENT PURGE

STARTING TIME      MAR 11, 1990      HOUR 2 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
2	3.9	30.0	-0.5
3	4.5	55.0	-0.5
4	4.8	85.0	-0.5
5	4.2	80.0	-0.5
6	3.0	80.0	-0.5
7	1.8	75.0	-0.7
8	3.0	95.0	-0.9
9	4.2	115.0	-1.0
10	5.4	125.0	-1.0
11	4.2	125.0	-1.0
12	3.6	130.0	-1.2

STOP TIME      MAR 11, 1990      HOUR 11 MINUTE 20

STARTING TIME      MAR 11, 1990      HOUR 12 MINUTE 56

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
12	3.6	130.0	-1.2
13	3.0	135.0	-1.2
14	3.9	195.0	-1.2
15	5.1	275.0	-1.5
16	6.0	355.0	-1.5
17	6.3	355.0	-1.2
18	6.9	360.0	-1.0
19	7.2	5.0	-0.5
20	7.5	360.0	-0.5
21	8.1	360.0	-0.5
22	8.4	355.0	-0.5
23	8.4	355.0	-0.5
24	8.4	355.0	-0.5
1	8.4	355.0	-0.5
2	8.1	360.0	-0.5
3	7.5	360.0	-0.5

STOP TIME      MAR 12, 1990      HOUR 2 MINUTE 10



RELEASE NUMBER 90026      CONTAINMENT PURGE

STARTING TIME      MAR 12,1990      HOUR 19 MINUTE 19

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
19	4.2	325.0	-0.5
20	3.6	340.0	1.0
21	3.3	355.0	1.2
22	3.0	5.0	1.5
23	3.0	355.0	2.0

STOP TIME      MAR 12,1990      HOUR 22 MINUTE 39

STARTING TIME      MAR 12,1990      HOUR 23 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
23	3.0	355.0	2.0
24	2.7	350.0	2.5

STOP TIME      MAR 12,1990      HOUR 23 MINUTE 29



RELEASE NUMBER 90026      CONTAINMENT PURGE

STARTING TIME      MAR 12,1990      HOUR 23 MINUTE 50

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
23	3.0	355.0	2.0
24	2.7	350.0	2.5
1	2.4	345.0	4.0
2	2.2	345.0	4.0
3	2.1	345.0	4.0
4	1.8	345.0	4.0
5	1.8	30.0	4.5
6	1.8	55.0	4.0
7	1.8	70.0	-0.5
8	2.1	80.0	-0.5
9	2.7	95.0	-1.5
10	3.0	105.0	-1.5
11	2.7	115.0	-1.5
12	2.7	135.0	-1.5
13	2.4	155.0	-1.5
14	2.4	180.0	-1.5
15	2.4	205.0	-1.5
16	2.4	225.0	-1.5
17	2.4	215.0	-1.5
18	2.4	205.0	-1.5
19	2.4	195.0	-0.5
20	2.4	185.0	0.5
21	2.4	175.0	1.0
22	2.4	165.0	1.5
23	2.4	145.0	2.0
24	2.4	135.0	3.0
1	2.4	125.0	3.5

STOP TIME      MAR 14,1990      HOUR 0 MINUTE 10

STARTING TIME      MAR 14,1990      HOUR 0 MINUTE 25

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	2.4	125.0	3.5
2	3.3	190.0	2.0
3	4.5	250.0	1.0
4	5.4	335.0	-0.5
5	5.7	330.0	-0.5
6	6.3	330.0	-0.5
7	6.6	325.0	-0.8
8	6.9	320.0	-0.8
9	7.2	320.0	-1.0
10	7.8	315.0	-1.5
11	8.1	330.0	-1.5
12	8.1	345.0	-1.5

13 8.4 355.0 -1.7  
STOP TIME MAR 14.1990 HOUR 12 MINUTE 30

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RELEASE NUMBER 90027      CONTAINMENT PURGE

STARTING TIME      MAR 14, 1990      HOUR 15 MINUTE 40

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
15	6.9	330.0	-1.6
16	6.0	315.0	-1.5

STOP TIME      MAR 14, 1990      HOUR 15 MINUTE 45

STARTING TIME      MAR 14, 1990      HOUR 16 MINUTE 10

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
16	6.0	315.0	-1.5
17	5.1	330.0	-1.2
18	4.2	345.0	-1.0
19	3.6	355.0	-0.5
20	3.3	360.0	-0.5
21	3.3	360.0	-0.5
22	3.0	5.0	-0.5
23	3.3	355.0	-0.5
24	3.6	345.0	-0.5
1	3.6	345.0	-0.5
2	4.2	335.0	-0.5
3	4.8	330.0	-0.5
4	5.4	325.0	-0.5
5	4.2	345.0	-0.5
6	3.0	15.0	-0.5
7	1.8	35.0	-0.7
8	2.1	115.0	-0.7
9	2.1	195.0	-1.0
10	2.4	250.0	-1.0
11	2.7	170.0	-1.0
12	3.0	95.0	-1.2
13	3.6	50.0	-1.4
14	3.3	20.0	-1.5
15	3.0	25.0	-1.5
16	2.4	15.0	-1.5
17	2.4	10.0	-1.2
18	2.4	5.0	-1.0
19	2.4	5.0	-0.8
20	2.4	360.0	-0.6
21	2.4	350.0	-0.5
22	2.4	345.0	-0.5
23	2.4	330.0	-0.5
24	2.4	320.0	-0.5
1	2.4	315.0	-0.5
2	2.4	320.0	-0.5
3	2.7	330.0	-0.5
4	3.0	335.0	-0.5



5	3.0	345.0	-0.5
6	3.0	355.0	-0.7
7	3.0	5.0	-0.7
8	3.9	15.0	-1.0
9	5.1	20.0	-1.0
10	6.0	25.0	-1.5
11	5.4	30.0	-1.5
12	4.8	35.0	-1.6
13	4.2	45.0	-1.7
14	3.6	65.0	-1.7
15	2.7	85.0	-1.7
16	1.8	95.0	-1.7
17	1.8	90.0	-0.5
18	1.8	90.0	1.5
19	1.8	85.0	4.0
20	1.8	80.0	4.0
21	1.8	80.0	4.0
22	1.8	75.0	4.0
23	1.8	85.0	4.0
24	1.8	95.0	4.0
1	1.8	110.0	4.2
2	2.1	125.0	4.2
3	2.1	.0	4.2
4	2.4	30.0	4.4
5	2.1	140.0	4.6
6	2.1	125.0	4.6
7	1.8	110.0	1.5
8	1.8	95.0	0.5
9	1.8	85.0	-1.0
10	1.8	75.0	-1.5
11	2.4	65.0	-1.5
12	2.4	55.0	-1.6
13	2.4	45.0	-1.7
14	2.1	95.0	-1.7
15	2.1	145.0	-1.7
16	1.8	175.0	-1.7
17	1.8	165.0	0.5
18	1.8	160.0	2.5
19	1.8	155.0	4.0

STOP TIME      MAR   17, 1990      HOUR 18 MINUTE 12

RELEASE NUMBER 90027

CONTAINMENT PURGE

STARTING TIME MAR 17, 1990 HOUR 18 MINUTE 40

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	1.8	160.0	2.5
19	1.8	155.0	4.0
20	2.4	145.0	4.0
21	2.7	140.0	4.0
22	3.0	135.0	4.5
23	3.0	150.0	4.5
24	3.0	170.0	4.5
1	3.0	170.0	4.0
2	2.7	185.0	4.0
3	2.7	200.0	4.0
4	2.4	210.0	4.0
5	2.4	215.0	4.0
6	2.4	220.0	3.0
7	2.4	230.0	1.5
8	3.3	225.0	0.5
9	4.2	215.0	-1.0
10	4.8	205.0	-1.5
11	4.5	195.0	-1.5
12	4.5	185.0	-1.6
13	4.2	175.0	-1.7

STOP TIME MAR 18, 1990 HOUR 12 MINUTE 41

RELEASE NUMBER 90028

CONTAINMENT PURGE

STARTING TIME MAR 18, 1990 HOUR 12 MINUTE 55

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
12	4.5	185.0	-1.6
13	4.2	175.0	-1.7
14	4.2	175.0	-1.6
15	4.2	175.0	-1.5
16	4.2	58.1	-1.5
17	4.8	164.5	-1.0
18	4.2	162.8	0.7
19	3.0	152.4	2.3
20	0.4	183.4	4.3
21	0.6	180.8	4.5
22	1.0	160.6	4.7
23	2.2	160.4	4.9
24	3.5	167.5	5.1
1	3.7	164.8	5.4
2	2.6	162.2	4.4
3	4.9	171.5	4.7
4	4.0	163.2	4.2
5	4.2	164.3	4.3
6	6.4	175.0	4.9
7	8.1	177.4	4.2
8	8.5	177.6	1.7
9	7.1	165.2	0.3
10	6.8	155.9	-0.4
11	7.8	155.1	-0.1
12	8.5	157.7	-0.4
13	10.6	156.2	-0.2
14	10.3	153.6	-0.2
15	9.4	159.7	-0.3
16	10.3	157.3	-1.1
17	7.5	153.6	0.2
18	5.3	142.7	0.8

STOP T MAR 19, 1990 HOUR 17 MINUTE 27



RELEASE NUMBER 90029      CONTAINMENT PURGE

STARTING TIME      MAR 19,1990      HOUR 17 MINUTE 42

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	7.5	153.6	0.2
18	5.3	142.7	0.8
19	1.5	132.4	2.9
20	1.6	125.2	4.0
21	2.2	133.6	4.2
22	2.0	130.6	4.7
23	5.6	152.6	3.0
24	8.3	161.4	1.9
1	6.1	164.2	2.0

STOP TIME      MAR 20,1990      HOUR 0 MINUTE 51

STARTING TIME      MAR 20,1990      HOUR 0 MINUTE 59

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	6.1	164.2	2.0
2	7.4	170.5	2.7
3	8.0	175.1	3.2
4	6.5	172.5	2.9
5	3.3	153.0	2.6
6	3.0	112.9	3.2

STOP TIME      MAR 20,1990      HOUR 5 MINUTE 0

RELEASE NUMBER 90029 CONTAINMENT PURGE

STARTING TIME MAR 20, 1990 HOUR 5 MINUTE 43

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	3.3	153.0	2.6
6	3.0	102.9	3.2
7	2.8	103.2	3.7
8	3.6	120.2	2.1
9	8.3	153.1	0.3
10	8.6	147.9	-0.6

STOP TIME MAR 20, 1990 HOUR 9 MINUTE 47

STARTING TIME MAR 20, 1990 HOUR 12 MINUTE 41

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
12	9.5	145.3	-0.3
13	11.7	143.7	-0.3
14	13.2	144.4	-0.3
15	14.6	151.9	-0.2
16	11.6	146.9	0.1
17	9.6	149.2	0.3
18	7.9	149.2	1.0
19	7.7	149.2	1.7
20	6.8	144.0	2.0
21	8.5	143.9	1.9
22	10.4	151.3	1.4
23	11.3	159.4	1.3
24	11.0	164.3	1.4
1	10.3	162.2	1.4
2	8.0	159.6	1.6
3	7.6	165.1	1.6
4	8.2	179.1	1.6
5	7.8	166.5	1.7
6	7.9	161.2	1.8
7	8.8	158.5	1.6
8	11.3	164.8	0.9

STOP TIME MAR 21, 1990 HOUR 7 MINUTE 58

RELEASE NUMBER 90030

CONTAINMENT PURGE

STARTING TIME MAR 24, 1990 HOUR 23 MINUTE 59

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
23	2.5	312.6	-0.4
24	3.9	316.1	-0.7
	3.8	316.9	-0.8
2	3.0	312.7	-0.9
3	3.5	315.6	-0.5
4	4.1	322.6	-0.1
5	4.8	327.2	0.3
6	5.2	329.9	-0.5
7	5.2	328.4	-0.7
8	5.1	333.3	-0.8
9	5.8	332.7	-0.9
10	6.6	342.0	-1.2
11	12.7	351.7	-1.8
12	24.0	2.7	-1.0
13	24.1	2.8	-1.0
14	24.5	2.8	-1.5
15	23.0	354.2	-1.5
16	14.2	328.7	-1.5
17	12.9	340.4	-1.6
18	13.7	341.0	-1.5
19	12.6	342.2	-1.0
20	10.3	341.5	-0.8
21	10.8	347.1	-0.6
22	9.8	349.2	-0.5
23	10.1	349.9	-0.5
24	9.1	344.8	-0.7
1	7.5	344.3	-0.3
2	6.6	346.7	-0.5
3	5.8	343.9	-0.5
4	4.7	347.3	-0.4
5	4.5	351.2	-0.2
6	4.1	354.8	-0.5
7	3.5	349.4	-0.3
8	3.6	351.6	-1.4
9	4.2	0.5	-1.0
10	4.4	1.5	-2.1
11	4.1	1.6	-2.3
12	4.0	345.1	-2.3
13	3.7	335.5	-2.3
14	3.2	346.6	-2.2
15	3.1	341.3	-2.0
16	1.5	329.6	-2.0
17	1.7	327.4	-1.5
18	0.9	203.8	-0.5
19	4.0	241.2	3.4
20	0.3	129.4	5.9
21	5.9	132.0	6.6
22	0.7	128.1	6.6
23	1.4	137.7	5.7



24	2.3	116.9	6.6
1	2.9	155.0	6.0
2	6.0	189.7	5.0
3	5.2	186.6	4.6
4	4.0	170.6	3.8
5	5.5	176.4	4.7
6	7.5	183.9	4.4
7	6.3	182.3	2.6
8	8.6	179.1	-0.2
9	9.9	179.2	-1.5
10	14.1	184.4	-1.8
11	15.1	183.6	-1.9
12	14.7	176.5	-2.2
13	12.9	176.1	-2.2
14	14.0	176.5	-2.0
15	13.3	177.2	-1.9
16	12.8	170.6	-1.7
17	10.6	176.1	-1.5
18	7.6	170.2	-0.8
19	3.3	161.7	0.7
20	4.0	159.4	1.9
21	3.9	171.1	1.9
22	5.1	163.8	1.7
23	5.7	163.7	1.3
24	5.2	158.6	1.1
1	5.2	174.1	1.7
2	7.0	182.3	0.9
3	4.1	168.6	0.4
4	2.3	131.6	0.4
5	1.7	88.2	-0.2
6	1.5	223.8	0.7

STOP TIME MAR 28, 1990 HOUR 5 MINUTE 54

STARTING TIME MAR 28, 1990 HOUR 6 MINUTE 45

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
6	1.5	223.8	0.7
7	1.1	313.3	1.3
8	1.2	322.9	0.3
9	2.8	329.1	-1.8
10	3.9	342.0	-2.2
11	4.4	341.0	-2.1
12	5.2	341.7	-2.3
13	6.0	347.7	-2.3
14	7.5	342.5	-2.2

STOP TIME MAR 28, 1990 HOUR 13 MINUTE 22

RELEASE NUMBER 90030      CONTAINMENT PURGE

STARTING TIME      MAR 28,1990      HOUR 14 MINUTE 6

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
14	7.5	342.5	-2.2
15	6.5	339.3	-1.9
16	6.6	343.7	-1.7
17	4.5	341.2	-1.2
18	4.8	337.1	-0.4

STOP TIME      MAR 28,1990      HOUR 17 MINUTE 17

STARTING TIME      MAR 29,1990      HOUR 3 MINUTE 25

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
3	2.1	286.9	3.9
4	1.7	280.1	4.5
5	1.2	275.2	4.6
6	0.9	276.9	4.7
7	1.0	286.6	3.8
8	0.7	291.5	1.0
9	1.7	62.2	-1.9
10	3.9	84.6	-1.9
11	4.5	124.8	-1.8
12	3.4	139.8	-2.0
13	2.9	155.3	-2.0
14	3.6	180.3	-1.8
15	3.3	137.4	-1.9
16	4.4	168.4	-1.6
17	4.6	161.6	-1.5
18	2.9	174.4	-0.2

STOP TIME      MAR 29,1990      HOUR 17 MINUTE 20

RELEASE NUMBER 90030      CONTAINMENT PURGE

STARTING TIME      MAR 30,1990      HOUR 4 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT10 DEG C
4	3.5	113.4	2.5
5	4.0	119.6	2.2
6	4.6	138.2	1.5
7	4.6	142.0	1.0
8	7.6	154.9	-0.5
9	11.0	163.5	-1.3
10	11.1	168.8	-1.8

STOP TIME      MAR 30,1990      HOUR 9 MINUTE 26

STARTING TIME      MAR 30,1990      HOUR 9 MINUTE 47

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
9	11.0	163.5	-1.3
10	11.1	168.8	-1.8
11	11.9	167.8	-1.9
12	11.8	171.8	-1.9
13	11.4	172.8	-2.2
14	11.7	174.6	-2.1
15	12.7	172.3	-1.9
16	12.4	168.8	-1.8
17	8.8	163.5	-1.3
18	7.2	156.9	-0.3
19	4.9	153.0	1.5
20	6.2	157.6	2.5
21	9.1	163.5	1.8
22	6.3	174.1	1.1
23	7.6	176.8	1.3
24	8.9	175.3	1.3
1	12.0	184.2	1.6
2	13.9	181.6	2.3
3	10.2	184.1	1.5
4	12.0	185.1	1.9
5	12.0	189.2	1.9
6	10.6	185.7	1.2
7	10.9	184.2	0.6
8	8.9	193.9	-0.4
9	10.7	193.3	-1.3
10	10.5	205.6	-1.8
11	9.8	192.7	-1.9
12	10.1	184.9	-2.2
13	8.9	193.0	-2.2
14	7.2	199.3	-2.1

STOP TIME      MAR 31,1990      HOUR 13 MINUTE 24



RELEASE NUMBER 90030      CONTAINMENT PURGE

STARTING TIME      MAR 31,1990      HOUR 13 MINUTE 40

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	8.9	193.0	-2.2
14	7.2	199.3	-2.1
15	5.3	199.9	-1.9
16	4.4	189.8	-1.7
17	4.5	174.6	-1.2
18	1.7	186.9	1.3
19	3.7	180.5	3.0
20	0.3	98.3	5.6
21	0.8	133.8	6.6
22	0.7	91.6	7.9
23	0.7	56.6	7.8
24	0.8	314.9	7.5
1	3.2	294.2	5.4
2	3.8	156.3	4.9
3	4.0	267.0	5.4
4	3.5	304.4	4.1
5	3.1	293.1	4.0

STOP TIME      APR 1,1990      HOUR 4 MINUTE 12

RELEASE NUMBER 90031 CONTAINMENT PURGE

STARTING TIME APR 4, 1990 HOUR 0 MINUTE 15

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	7.8	319.0	-0.4
2	10.0	323.8	-0.5
3	8.2	330.1	-0.4
4	6.6	328.2	-0.3
5	8.3	333.1	-0.4
6	7.5	330.9	-0.4
7	6.4	329.3	-0.1
8	6.6	329.6	-0.3
9	8.5	343.6	-0.9
10	9.5	345.2	-1.2
11	9.1	348.1	-1.6
12	8.9	355.5	-1.5
13	8.3	354.5	-1.6
14	8.4	354.6	-1.5
15	7.6	358.5	-1.5
16	7.8	357.3	-1.4
17	7.3	359.8	-1.2
18	6.7	6.9	-0.9
19	5.1	11.0	-0.4
20	3.0	354.4	0.5
21	2.6	310.6	1.6
22	3.4	303.4	2.6
23	0.7	301.1	2.2
24	1.3	296.5	1.7
1	4.2	30.0	1.5
2	3.9	30.0	2.0
3	3.9	30.0	2.5
4	3.6	30.0	3.0
5	3.0	35.0	3.5
6	2.7	35.0	3.5
7	2.4	40.0	4.5
8	2.7	55.0	-0.5
9	3.0	75.0	-0.5

STOP TIME APR 5, 1990 HOUR 8 MINUTE 18

TIME HOUR	STARTING TIME WS10 MPH	WD10 DEG	DT10 DEG C	APR 5, 1990	HOUR 8 MINUTE 28
8	2.7	55.0	-0.5		
9	3.0	75.0	-0.5		
10	3.6	85.0	-1.0		
11	3.9	75.0	-1.2		
12	3.9	55.0	-1.3		
13	4.2	35.0	-1.5		
14	3.9	45.0	-1.5		
15	3.9	50.0	-1.5		
16	3.6	55.0	-1.5		
17	3.0	35.0	-1.0		
18	2.4	15.0	-0.5		
19	1.8	355.0	1.5		
20	2.1	35.0	2.0		
21	2.1	55.0	2.5		
22	2.4	80.0	3.0		
23	1.8	80.0	4.0		
24	1.8	100.0	4.0		
1	3.7	291.5	3.5		
2	3.1	224.3	3.6		
3	3.4	252.3	3.4		
4	2.7	200.2	3.5		
5	2.6	251.9	3.4		
6	2.6	295.8	3.5		
7	2.5	301.6	3.0		
8	3.0	205.6	2.2		
9	5.0	118.1	0.6		
10	7.2	127.7	-1.2		
11	6.3	131.6	-0.8		
12	9.5	137.2	-0.8		
13	12.2	144.4	-0.7		
14	11.0	133.5	-0.8		
15	13.3	132.1	-0.8		
16	10.2	137.4	-0.8		
17	11.5	134.2	-0.9		
18	11.0	137.2	-1.0		
19	10.9	134.2	-0.8		
20	8.6	137.5	-0.7		
21	4.3	135.2	-0.2		
22	4.9	123.3	0.6		
23	10.6	147.8	-0.7		
24	10.2	165.5	-0.9		
1	8.1	166.3	-0.4		
2	5.8	154.3	-0.5		
3	5.6	185.6	-0.5		
4	3.3	315.5	-0.5		
5	3.0	49.0	-0.5		
6	5.8	320.0	-0.5		
7	8.2	140.9	-0.5		
8	4.0	127.6	-0.5		



9	4.9	184.4	-0.5
10	3.1	311.6	-0.5
11	4.6	274.5	-0.5
12	4.0	300.9	-0.3
13	6.0	319.7	-1.0
14	5.3	319.4	-1.0
15	4.9	301.5	-1.3
16	4.7	303.7	-1.2
17	4.8	307.5	-1.0
18	3.3	313.2	-0.7
19	3.1	301.0	-0.5
20	3.1	312.9	-0.5
21	2.0	319.9	-0.5
22	3.0	312.6	-0.5

STOP TIME    APR    7, 1990    HOUR 21 MINUTE 5

RELEASE NUMBER 90031

CONTAINMENT PURGE

STARTING TIME APR 8, 1990 HOUR 4 MINUTE 48

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
4	3.6	295.2	1.8
5	2.9	310.6	1.4
6	3.2	284.4	1.2
7	3.1	300.5	1.1
8	2.9	279.4	0.8
9	3.1	308.4	0.3
10	5.9	327.3	-0.6
11	5.8	337.1	-0.6
12	8.4	334.5	-0.9
13	8.1	332.9	-1.1
14	8.2	333.9	-1.2
15	8.4	339.3	-1.3
16	8.0	331.5	-1.3
17	7.0	339.7	-1.2
18	7.3	332.9	-1.0

STOP TIME APR 8, 1990 HOUR 17 MINUTE 46

RELEASE NUMBER 9G032      CONTAINMENT PURGE

STARTING TIME      APR    8,1990      HOUR 17 MINUTE 46

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	7.0	339.7	-1.2
18	7.3	332.9	-1.0
19	5.7	333.2	-0.6
20	2.5	303.4	1.0
21	3.0	297.9	1.7
22	3.2	303.3	2.3
23	3.0	285.7	2.5
24	2.4	274.0	1.2
1	4.1	170.5	2.7
2	3.2	299.2	2.9
3	4.0	316.6	1.6
4	3.6	295.2	1.8
5	2.9	310.6	1.4
6	3.2	284.4	1.2
7	3.1	300.5	1.1

STOP TIME      APR    9,1990      HOUR 6 MINUTE 2

STARTING TIME      APR    10,1990      HOUR 1 MINUTE 50

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	3.9	117.9	1.3
2	4.8	124.2	1.4
3	5.1	129.9	0.5
4	3.2	112.2	1.5
5	3.0	99.1	1.4
6	3.4	102.4	1.0
7	3.0	142.2	1.3
8	4.7	285.8	2.0
9	2.9	178.3	-1.5
10	2.4	190.0	-1.7
11	2.4	200.0	-1.7
12	2.4	205.0	-1.7
13	2.4	210.0	-1.7
14	2.4	220.0	-1.5
15	2.4	225.0	-1.0
16	2.4	230.0	-0.5
17	2.4	240.0	-0.5
18	2.4	245.0	1.0
19	2.4	260.0	2.0

STOP TIME      APR    10,1990      HOUR 18 MINUTE 52



RELEASE NUMBER 90032      CONTAINMENT PURGE

STARTING TIME      APR 11, 1990      HOUR 13 MINUTE 38

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	6.3	309.7	-1.8
14	11.5	314.5	-1.9
15	6.9	305.6	-1.7
16	4.9	309.3	-1.5
17	5.7	303.6	-1.0
18	6.3	317.2	-0.4
19	6.1	321.9	-0.6
20	5.2	325.4	0.3
21	6.0	325.7	0.8
22	4.4	324.1	1.5
23	3.0	325.3	2.7

STOP TIME      APR 11, 1990      HOUR 22 MINUTE 58

RELEASE NUMBER 90033      CONTAINMENT PURGE

STARTING TIME      APR 12, 1990      HOUR 3 MINUTE 40

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
3	3.5	313.5	1.2
4	3.7	317.0	1.5
5	3.3	301.4	2.2

STOP TIME      APR 12, 1990      HOUR 4 MINUTE 23

RELEASE NUMBER 90034      CONTAINMENT PURGE

STARTING TIME      APR 12, 1990      HOUR 14 MINUTE 7

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
14	7.7	143.1	-1.6
15	8.3	166.8	-1.4
16	9.5	169.9	-1.3
17	10.6	184.8	-1.2
18	7.9	168.7	-0.8
19	6.5	148.5	0.3
20	7.3	144.0	1.7
21	9.6	158.6	1.8
22	12.4	164.7	1.1
23	14.4	166.6	0.4
24	11.3	164.0	0.3
1	10.5	160.5	0.2
2	12.1	179.4	0.5
3	13.3	181.5	-0.1
4	12.2	180.2	0.5
5	13.8	189.3	0.2
6	14.5	190.7	0.5
7	13.9	194.0	0.1
8	15.2	195.8	-0.2

STOP TIME      APR 13, 1990      HOUR 7 MINUTE 52

STARTING TIME      APR 13, 1990      HOUR 10 MINUTE 20

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
10	19.0	232.5	-0.1
11	19.5	190.9	-0.5
12	17.3	222.0	-1.5
13	24.9	2.8	-1.5
14	10.6	164.0	-1.5
15	22.1	17.8	-1.5
16	22.3	328.9	-1.5
17	6.0	293.4	-0.8
18	6.9	322.0	-0.8
19	3.8	325.7	1.2
20	4.3	318.9	1.9
21	5.6	327.4	1.1
22	4.6	338.1	0.6
23	6.0	346.9	-0.4
24	4.2	308.8	1.1
1	3.4	307.5	1.7
2	3.1	300.5	1.8
3	2.9	298.0	1.8
4	3.1	303.3	3.0
5	3.1	288.1	4.1

6	2.8	289.3	3.6
7	2.5	282.3	3.6
8	2.9	289.8	-0.5
9	4.4	176.3	-0.5
10	3.0	358.4	-0.5
11	3.0	350.6	-1.0
12	3.0	120.0	-1.5
13	3.0	150.0	-1.7
14	3.0	158.0	-1.7
15	3.0	166.0	-1.7
16	3.0	170.0	-1.7
17	5.4	155.0	-1.6
18	4.6	140.0	-1.2
19	2.9	120.0	1.7
20	3.9	125.0	4.9
21	2.6	125.0	6.3
22	3.1	130.0	6.2
23	3.3	150.0	5.5
24	2.6	170.0	6.2
1	2.3	185.0	6.8
2	2.7	185.0	7.5
3	3.1	180.0	3.0
4	2.7	175.0	2.3
5	2.9	155.0	4.1
6	3.8	135.0	3.5
7	2.9	115.0	2.0
8	2.1	120.0	-0.5
9	2.4	130.0	-0.5
10	3.8	135.0	-0.5
11	4.4	140.0	-0.9
12	8.9	140.0	1.4
13	10.8	145.0	-1.7
14	8.3	160.0	-1.7
15	9.6	175.0	-1.7
16	10.1	185.0	-1.7
17	10.4	195.0	-1.4
18	7.0	200.0	-1.1
19	5.0	205.0	-0.2
20	5.4	195.0	1.2
21	7.1	190.0	1.2
22	9.8	185.0	1.0
23	9.9	195.0	0.9
24	10.5	200.0	1.6

STOP TIME: APR 15, 1990 HOUR 23 MINUTE 44



RELEASE NUMBER 90034 CONTAINMENT PURGE

STARTING TIME APR 16, 1990 HOUR 5 MINUTE 29

TIME  
HOUR

WS10  
MPH

WD10  
DEG

DT110  
DEG C

5 2.2 305.0 2.4  
6 2.4 335.0 3.3  
7 2.5 355.0 4.6  
8 2.5 25.0 3.2  
9 2.4 65.0 1.1  
10 2.2 95.0 -0.3  
11 2.4 120.0 -1.3  
12 3.9 125.0 -1.3  
13 3.9 135.0 -1.6  
14 2.7 140.0 -1.5  
15 2.3 145.0 -1.7  
16 5.5 155.0 -1.6  
17 3.1 145.0 -1.6  
18 4.0 125.0 -1.0  
19 3.2 115.0 1.0  
20 2.2 135.0 4.0  
21 4.0 155.0 5.2  
22 2.2 175.0 5.0  
23 3.2 165.0 5.1  
24 3.7 155.0 4.8  
1 6.5 145.0 2.4

STOP TIME APR 17, 1990 HOUR 0 MINUTE 53

STARTING TIME APR 17, 1990 HOUR 2 MINUTE 54

TIME  
HOUR

WS10  
MPH

WD10  
DEG

DT110  
DEG C

2 9.2 135.0 0.9  
3 7.0 135.0 2.1  
4 6.6 125.0 3.2

STOP TIME APR 17, 1990 HOUR 3 MINUTE 5

RELEASE NUMBER 90034 CONTAMINANT PURGE

STARTING TIME APR 17, 1990 HOUR 5 MINUTE 3

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	3.7	125.0	3.7
6	2.9	115.0	5.2
7	2.8	115.0	5.8
8	2.4	145.0	3.6
9	1.8	165.0	1.4
10	2.9	185.0	-0.6

STOP TIME APR 17, 1990 HOUR 9 MINUTE 55

STARTING TIME APR 17, 1990 HOUR 13 MINUTE 59

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	4.6	165.0	-1.9
14	3.1	220.0	-1.8
15	3.3	270.0	-2.0
16	3.0	335.0	-1.3
17	4.9	345.0	-0.9
18	9.0	345.0	-1.1
19	9.6	355.0	-1.1
20	10.2	355.0	-1.1
21	11.2	355.0	-1.0
22	9.3	5.0	-0.3

STOP TIME APR 17, 1990 HOUR 21 MINUTE 21

RELEASE NUMBER 90034 CONTAINMENT PURGE

STARTING TIME APR 18, 1990 HOUR 0 MINUTE 49

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	9.1	345.0	-0.9
2	8.1	335.0	-0.9
3	6.9	335.0	-1.0
4	8.5	325.0	-1.1
5	7.3	335.0	-1.0

STOP TIME APR 18, 1990 HOUR 4 MINUTE 27

STARTING TIME APR 18, 1990 HOUR 9 MINUTE 13

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
9	9.8	345.0	-1.0
10	21.3	355.0	-1.0
11	22.0	355.0	-1.0
12	28.9	360.0	-1.0
13	23.8	5.0	-1.0
14	10.6	355.0	-0.8
15	10.2	355.0	-0.9
16	10.0	355.0	-0.8
17	9.3	5.0	-0.7
18	8.0	10.0	-0.7

STOP TIME APR 18, 1990 HOUR 17 MINUTE 25

RELEASE NUMBER 90035      CONTAINMENT PURGE

STARTING TIME      APR 19,1990      HOUR 1 MINUTE 3

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	6.0	5.0	-0.4
2	6.3	5.0	-0.5
3	6.2	5.0	-0.3
4	6.0	5.0	-0.1
5	5.8	355.0	-0.2
6	6.3	350.0	-0.3
7	6.8	345.0	-0.3
8	6.8	350.0	-0.5
9	8.7	355.0	-0.7
10	14.5	5.0	-0.8
11	8.1	10.0	-0.9
12	8.7	20.0	-1.0
13	9.0	25.0	-1.0
14	8.4	20.0	-1.1
15	7.8	20.0	-1.2
16	7.2	15.0	-1.2
17	5.4	15.0	-0.8
18	4.2	15.0	-0.5
19	3.0	15.0	0.5
20	3.0	20.0	1.0
21	3.3	30.0	1.0
22	3.6	35.0	-0.5
23	3.0	30.0	-0.5

STOP TIME      APR 19,1990      HOUR 22 MINUTE 40

STARTING TIME      APR 19,1990      HOUR 22 MINUTE 53

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
22	3.6	35.0	-0.5
23	3.0	30.0	-0.5
24	2.4	30.0	-0.5
1	1.8	306.3	-0.5

STOP TIME      APR 20,1990      HOUR 0 MINUTE 31



RELEASE NUMBER 90035

CONTAINMENT PURGE

STARTING TIME APR 20, 1990 HOUR 6 MINUTE 38

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
6	4.5	306.3	-0.5
7	4.2	306.3	-0.5
8	4.5	306.3	-0.7
9	4.8	306.3	-0.9
10	4.8	307.0	-1.0
11	5.1	14.8	-1.0
12	5.4	359.6	-1.0
13	6.0	356.6	-1.0
14	5.1	356.6	-1.0
15	4.2	359.7	-1.0
16	3.6	356.3	-1.0
17	3.0	356.3	-1.0
18	2.4	357.6	-0.5
19	1.8	357.5	0.5
20	1.8	356.3	0.5
21	2.1	356.3	1.0
22	2.4	355.9	1.5
23	3.0	356.2	1.5
24	3.0	356.3	1.5
1	3.6	354.1	1.5
2	3.6	356.2	1.5
3	3.6	356.3	2.0
4	3.6	356.3	2.5
5	3.6	356.5	3.0
6	3.6	356.1	3.0
7	3.6	356.3	2.0
8	4.8	356.6	2.0
9	5.7	357.5	1.0
10	6.6	355.6	-0.5
11	6.6	355.7	-1.0
12	6.9	355.7	-1.2
13	7.2	355.6	-1.5
14	6.9	355.6	-1.5
15	6.3	355.7	-1.5
16	6.0	355.7	-1.5
17	5.4	355.7	-0.8
18	4.2	355.6	-1.5
19	3.0	355.6	1.5
20	2.7	355.5	2.5
21	2.4	355.6	2.5
22	1.8	355.6	3.0
23	1.8	355.6	3.0
24	1.8	355.6	3.0
1	1.8	200.0	3.0
2	1.8	200.0	3.0
3	1.8	200.0	4.0
4	1.8	200.0	4.0
5	2.1	200.0	4.0
6	2.1	200.0	4.0

7	2.4	200.0	4.0
8	2.7	200.0	-0.5
9	2.7	195.0	-1.0
10	3.0	195.0	-1.5
11	3.3	195.0	-1.5
12	3.6	195.0	-1.5
13	4.2	195.0	-1.7
14	4.2	195.0	-1.7
15	4.2	200.0	-1.6
16	4.2	205.0	-1.5
17	3.9	185.0	-1.0
18	3.6	175.0	-0.5
19	3.0	165.0	1.0
20	3.3	170.0	2.0
21	3.3	175.0	2.5
22	3.6	180.0	2.5
23	3.6	160.0	3.0
24	3.6	140.0	3.0
1	2.4	115.0	2.0
2	2.1	105.0	2.5
3	2.1	100.0	3.0
4	1.8	95.0	4.0
5	2.1	90.0	4.0
6	2.1	80.0	4.0
7	2.4	75.0	4.0
8	2.1	85.0	1.5
9	2.1	95.0	-0.5
10	1.8	105.0	-1.0
11	2.4	115.0	-1.0

STOP TIME      APR 23,1990      HOUR 10 MINUTE 26

STARTING TIME      APR 24,1990      HOUR 18 MINUTE 14

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	3.0	145.0	1.0
19	2.4	145.0	1.5
20	3.0	145.0	1.5
21	4.2	150.0	1.5
22	4.8	155.0	1.5
23	4.5	165.0	2.0

STOP TIME      APR 24,1990      HOUR 22 MINUTE 8

RELEASE NUMBER 90036      CONTAINMENT PURGE

STARTING TIME      APR 25,1990      HOUR 3 MINUTE 25

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
3	3.3	185.0	3.0
4	3.0	180.0	4.0
5	3.0	170.0	4.0
6	3.0	160.0	4.0
7	3.0	150.0	3.5
8	3.0	170.0	2.0
9	3.0	190.0	-0.5
10	3.0	205.0	-1.5
11	3.3	195.0	-1.5
12	3.3	175.0	-1.6
13	3.6	155.0	-1.7
14	3.3	160.0	-1.7
15	3.3	170.0	-1.5
16	3.0	175.0	-1.5
17	3.0	165.0	-1.0
18	3.0	145.0	-0.5
19	3.0	125.0	0.5
20	3.9	130.0	1.0
21	4.8	140.0	1.5
22	5.4	145.0	1.5
23	4.0	160.0	2.0
24	4.5	175.0	2.5
1	3.6	180.0	2.0
2	3.0	160.0	2.5
3	2.7	140.0	3.0
4	2.4	120.0	4.0
5	2.7	115.0	4.0

STOP TIME      APR 26,1990      HOUR 4 MINUTE 6

STARTING TIME      APR 26,1990      HOUR 5 MINUTE 44

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	2.7	115.0	4.0
6	3.0	115.0	4.0
7	3.6	110.0	1.5
8	3.9	135.0	1.0
9	3.9	155.0	-0.5
10	4.2	175.0	-1.5
11	4.5	160.0	-1.5
12	4.5	145.0	-1.5
13	4.8	135.0	-1.7
14	4.2	140.0	-1.6
15	3.6	145.0	-1.6
16	3.0	150.0	-1.5

17	4.7	164.0	-1.0
18	3.8	153.7	-0.5
19	3.4	145.3	1.0
20	3.7	146.6	1.5
21	3.7	144.4	2.0
22	4.0	142.3	2.0
23	3.8	147.8	2.5
24	4.9	158.1	2.5
1	12.2	175.6	-1.0

STOP TIME    APR 27, 1990    HOUR 0 MINUTE 25



RELEASE NUMBER 90036

CONTAINMENT PURGE

STARTING TIME APR 27, 1990 HOUR 0 MINUTE 36

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	12.2	175.6	-1.0
2	11.9	174.3	-1.4
3	10.1	174.1	-1.0
4	11.0	174.7	-1.0
5	9.1	168.3	-0.5
6	10.4	170.6	-0.5
7	10.4	164.5	-0.5
8	12.4	158.4	-1.0
9	13.4	162.5	-0.5
10	25.4	0.7	-0.7
11	12.5	150.0	-0.9
12	12.5	150.0	-1.0
13	13.0	150.0	-1.0
14	13.5	150.0	-1.4
15	14.0	150.0	-1.4
16	15.0	150.0	-1.4
17	16.4	158.1	-1.0
18	16.5	153.9	-1.0
19	16.6	152.7	-1.0
20	16.6	149.9	-1.0
21	15.9	151.1	-1.0
22	15.8	157.4	-1.0
23	15.7	159.9	-1.0
24	14.6	159.6	-1.0
1	13.1	161.3	-0.5
2	12.5	161.8	-0.6
3	13.3	156.6	-0.4
4	13.9	161.3	-0.2
5	15.1	160.0	-0.3
6	13.0	156.3	-0.3
7	12.6	156.3	-0.3
8	14.3	157.2	-0.2
9	15.7	161.9	-0.5
10	18.2	170.7	-0.7
11	20.4	173.3	-1.1
12	19.9	167.8	-1.2
13	21.4	161.3	-1.2
14	21.5	166.0	-1.3
15	22.2	162.0	-1.3
16	18.8	157.1	-1.1
17	19.4	152.4	-1.0
18	19.1	150.1	-0.9
19	18.9	148.8	-0.7
20	20.8	155.6	-0.7
21	20.7	158.5	-0.8
22	19.7	157.1	-0.8
23	19.5	156.3	-0.7
24	16.3	180.8	-0.9
1	8.3	230.3	-0.7

2	8.2	180.1	-0.5
3	11.3	200.8	-0.5
4	10.7	210.0	-0.3
5	9.8	206.5	-0.3
6	9.6	208.0	0.1
7	6.9	211.0	0.4
8	3.4	182.5	0.4
9	3.5	262.0	0.8
10	4.6	270.7	0.3
11	4.9	253.4	-1.3
12	5.5	232.2	-1.4
13	5.9	233.8	-1.5
14	6.4	218.4	-1.4
15	5.9	192.0	-1.4
16	7.7	163.8	-1.4
17	8.4	147.1	-1.2
18	7.3	151.7	-1.0
19	7.0	146.8	-0.4
20	6.8	149.2	0.4
21	6.0	135.0	1.3
22	3.5	127.6	1.8
23	3.6	116.6	2.6
24	2.7	44.8	2.3
1	2.1	17.4	0.6
2	2.7	287.7	0.6
3	2.3	284.0	1.2
4	2.8	292.9	1.1
5	2.2	203.1	1.1
6	6.9	121.6	0.5
7	6.4	122.2	0.5
8	6.7	128.7	0.8
9	7.7	125.4	0.5
10	11.4	133.9	-0.1
11	13.6	142.7	-0.5
12	13.8	138.4	-0.6
13	14.1	137.0	-0.8
14	15.0	154.6	-0.7
15	18.4	160.6	-0.8
16	16.4	153.4	-1.0
17	15.7	151.6	-0.6
18	14.4	157.6	-0.6
19	15.6	148.5	-0.5
20	16.8	144.8	-0.8
21	17.8	159.4	-0.8
22	16.1	164.9	-0.9
23	14.6	161.0	-0.8
24	15.6	165.7	-0.6
1	16.0	164.0	-0.7
2	14.7	165.4	-0.8
3	10.9	201.4	-0.6
4	12.6	184.1	-0.6
5	11.0	159.5	-0.3
6	10.0	151.5	-0.4
7	8.1	158.6	-0.1
8	3.9	188.2	-0.4

9 3.1 301.2 0.1  
10 4.7 322.5 -0.2  
11 7.7 324.6 -0.5

STOP TIME MAY 1, 1990 HOUR 10 MINUTE 25

RELEASE NUMBER 90037

CONTAINMENT PURGE

STARTING TIME MAY 3, 1990 HOUR 5 MINUTE 25

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	3.9	332.3	0.7
6	3.9	340.2	1.9
7	3.5	42.9	2.9
8	3.2	327.6	1.8

STOP TIME MAY 3, 1990 HOUR 7 MINUTE 57



RELEASE NUMBER 90038 CONTAINMENT PURGE

STARTING TIME MAY 3, 1990 HOUR 13 MINUTE 30

TIME WS10 WD10 DT110  
HOUR MPH DEG DEG C

13	12.0	200.4	-1.4
14	12.7	193.8	-1.4
15	13.3	192.6	-1.3
16	12.5	193.7	-1.2
17	7.9	186.5	-0.8
18	7.3	181.1	-0.2
19	9.1	206.6	0.4
20	6.3	257.6	0.9
21	2.8	310.2	1.8
22	2.9	299.7	1.3
23	2.5	290.8	1.1
24	2.8	291.9	1.2
1	3.6	301.0	0.5
2	5.5	308.2	0.3
3	6.5	303.4	-0.5
4	8.9	315.5	-0.6
5	6.8	322.2	-0.6
6	5.5	311.6	-0.3
7	7.0	303.8	-0.8
8	6.8	312.5	-0.7
9	8.3	315.7	-1.0
10	8.9	320.1	-1.1

STOP TIME MAY 4, 1990 HOUR 9 MINUTE 50

STARTING TIME MAY 4, 1990 HOUR 10 MINUTE 49

TIME WS10 WD10 DT110  
HOUR MPH DEG DEG C

10	8.9	320.1	-1.1
11	11.4	322.6	-1.3
12	14.7	328.3	-1.0
13	13.1	327.4	-1.0
14	10.9	330.1	-1.1
15	10.7	330.6	-1.1
16	10.2	335.2	-1.1
17	10.6	332.5	-1.1
18	8.5	335.8	-1.1
19	7.5	335.6	-1.0
20	8.1	330.8	-1.1
21	8.0	328.3	-0.6
22	5.6	325.2	-0.8
23	4.0	310.3	-0.4
24	3.0	242.6	-0.2
1	2.9	207.6	-0.4
2	3.2	215.6	-0.1

3	5.9	222.7	0.5
4	7.3	215.1	1.4
5	8.5	223.3	1.0
6	9.4	229.3	1.6
7	7.9	223.7	1.5
8	7.2	224.7	0.8
9	6.8	218.7	-0.4
10	9.8	225.1	-0.4
11	11.0	219.5	-0.4
12	13.5	210.5	-0.5
13	10.6	227.7	-0.5
14	6.6	259.1	-1.2
15	7.2	297.2	-1.3
16	8.9	325.8	-1.1
17	7.8	336.2	-1.0
18	6.2	335.0	-1.1
19	4.8	306.7	-0.4
20	4.2	296.6	0.3
21	4.1	297.2	0.6
22	3.0	313.6	0.4
23	3.3	172.3	1.0
24	4.8	128.2	1.0
1	4.8	121.6	0.0
2	4.9	127.8	0.5
3	5.8	123.5	0.8
4	6.8	124.0	0.9
5	10.5	128.9	0.1
6	10.0	140.3	-0.1
7	9.9	131.5	-0.5
8	11.3	135.9	-0.3
9	10.3	132.1	-0.4
10	14.8	150.6	-0.6
11	14.7	174.2	-0.8
12	12.7	183.6	-0.7
13	9.5	176.0	-0.7
14	10.1	225.2	-0.9
15	7.7	265.0	-1.4
16	5.9	290.2	-1.3
17	3.5	173.2	-0.8
18	2.5	189.8	0.3
19	2.3	184.4	1.6
20	3.9	142.3	2.9
21	5.8	187.6	2.4
22	10.3	216.9	0.5
23	8.6	214.3	0.5
24	8.6	223.7	2.2
1	4.4	265.4	1.0
2	3.3	352.4	1.3
3	4.0	145.1	0.9
4	2.9	167.6	3.1
5	3.8	179.1	1.9

STOP TIME MAY 7, 1990 HOUR 4 MINUTE 25

RELEASE NUMBER 90038

CONTAINMENT PURGE

STARTING TIME MAY 7, 1990 HOUR 15 MINUTE 45

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
15	14.3	192.0	-1.1
16	12.3	186.8	-1.0
17	11.5	184.0	-0.8
18	11.6	184.8	-0.5
19	10.1	185.7	-0.7
20	10.6	161.2	-0.8
21	13.8	162.2	-0.8
22	15.7	175.7	-0.9

STOP TIME MAY 7, 1990 HOUR 21 MINUTE 46

STARTING TIME MAY 8, 1990 HOUR 6 MINUTE 33

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
6	4.9	278.4	0.1
7	4.9	286.2	0.1
8	5.7	290.1	0.1
9	8.8	287.4	-0.6
10	11.6	288.9	-1.2
11	13.5	303.0	-1.3
12	13.6	306.4	-1.4
13	14.9	313.6	-1.4
14	14.0	319.5	-1.1
15	12.9	317.8	-1.3

STOP TIME MAY 8, 1990 HOUR 14 MINUTE 5



RELEASE NUMBER 90038      CONTAINMENT PURGE

STARTING TIME      MAY    8,1990      HOUR 14 MINUTE 25

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
14	14.0	319.5	-1.1
15	12.9	317.8	-1.3
16	11.1	319.8	-1.2
17	9.1	325.8	-1.1

STOP TIME      MAY    8,1990      HOUR 16 MINUTE 0

STARTING TIME      MAY    9,1990      HOUR 7 MINUTE 48

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
7	5.0	147.2	1.3
8	5.8	124.4	2.3
9	11.8	177.7	1.0
10	10.4	181.8	-0.5
11	8.5	158.2	-0.9
12	8.2	146.6	-0.9
13	6.3	143.9	-0.8
14	8.7	144.4	-1.0
15	9.0	118.6	-1.0
16	7.7	123.5	-1.0
17	4.3	95.3	-0.8
18	7.5	114.9	-0.7

STOP TIME      MAY    9,1990      HOUR 17 MINUTE 14



RELEASE NUMBER 90039

CONTAINMENT PURGE

STARTING TIME

MAY 11, 1990

HOUR 8 MINUTE 43

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
8	6.4	312.1	-0.1
9	9.5	301.8	-0.7
10	11.2	296.6	-1.0
11	11.9	293.3	-1.5
12	13.3	292.4	-1.5
13	12.1	295.4	-1.6
14	13.4	295.1	-1.4
15	13.6	306.3	-1.4
16	13.3	301.9	-1.6
17	10.8	299.0	-1.2
18	5.7	290.0	-1.0
19	3.7	285.0	0.7
20	4.2	280.0	0.9
21	3.6	275.0	1.5
22	7.7	270.0	1.7
23	9.2	270.0	2.0
24	13.5	270.0	1.9
1	13.5	180.0	0.6
2	7.2	180.0	-0.4
3	7.3	180.0	0.8
4	8.6	180.0	1.9
5	6.5	210.0	-0.1
6	3.5	240.0	-0.5
7	4.6	260.0	-0.6
8	4.5	275.0	-0.2
9	6.7	295.0	-0.5
10	8.0	300.0	-0.5
11	10.5	300.0	-1.0
12	13.2	305.0	-1.0
13	13.2	310.0	-1.0
14	15.5	305.0	-1.2
15	9.6	305.0	-1.2
16	9.6	300.0	-1.2
17	9.0	300.0	-1.0
18	8.7	300.0	-0.5
19	8.4	300.0	-0.5
20	8.7	305.0	-0.5
21	8.7	315.0	-0.5
22	9.0	320.0	-0.5
23	7.8	310.0	-0.5
24	6.6	305.0	-0.5
1	6.6	320.0	-0.5
2	6.4	330.0	-0.5
3	4.8	345.0	-0.5
4	3.1	360.0	0.5
5	2.3	20.0	0.5
6	2.1	35.0	0.1
7	2.2	50.0	-0.5
8	2.4	95.0	-0.5

9

4.1 140.0 -0.7

STOP TIME MAY 13, 1990 HOUR 8 MINUTE 8

STARTING TIME MAY 13, 1990 HOUR 23 MINUTE 53

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
23	19.9	115.0	-0.5
24	20.5	200.0	-0.5
1	22.6	225.0	-0.5
2	20.3	225.0	-0.5
3	8.5	225.0	-0.5

STOP TIME MAY 14, 1990 HOUR 2 MINUTE 7

RELEASE NUMBER 90039 CONTAINMENT PURGE

STARTING TIME MAY 14, 1990 HOUR 5 MINUTE 25

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	6.0	225.0	-0.5
6	4.1	225.0	-0.3
7	3.9	225.0	-0.1
8	3.4	255.0	-0.5
9	5.0	285.0	-0.5
10	7.2	320.0	-0.8

STOP TIME MAY 14, 1990 HOUR 9 MINUTE 19

STARTING TIME MAY 14, 1990 HOUR 10 MINUTE 4

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
10	7.2	320.0	-0.8
11	9.8	340.0	-0.8
12	9.9	350.0	-1.2
13	10.4	360.0	-1.2

STOP TIME MAY 14, 1990 HOUR 12 MINUTE 32



RELEASE NUMBER 90039

CONTAINMENT PURGE

STARTING TIME MAY 14, 1990 HOUR 13 MINUTE 24

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	10.4	360.0	-1.2
14	11.4	10.0	-1.5
15	10.4	15.0	-1.4
16	9.7	20.0	-1.2
17	9.2	25.0	-1.0
18	6.5	25.0	-0.1
19	4.5	30.0	0.5
20	3.1	30.0	1.5
21	2.4	30.0	2.0
22	2.9	30.0	2.0
23	2.9	40.0	2.5
24	2.1	50.0	3.0
1	2.2	55.0	-0.5

STOP TIME MAY 15, 1990 HOUR 0 MINUTE 28

STARTING TIME MAY 15, 1990 HOUR 1 MINUTE 1

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	2.2	55.0	-0.5
2	2.6	60.0	-0.5
3	2.3	60.0	0.5

STOP TIME MAY 15, 1990 HOUR 2 MINUTE 42



RELEASE NUMBER 90039

CONTAINMENT PURGE

STARTING TIME MAY 15, 1990 HOUR 3 MINUTE 43

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
3	2.3	60.0	0.5
4	3.5	65.0	1.5
5	5.5	85.0	2.0
6	7.4	100.0	2.0
7	7.5	105.0	0.5
8	8.5	115.0	0.1
9	12.0	125.0	-0.7
10	14.1	135.0	-0.9

STOP TIME MAY 15, 1990 HOUR 9 MINUTE 5

STARTING TIME MAY 15, 1990 HOUR 18 MINUTE 10

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	8.1	150.0	0.5
19	8.4	145.0	1.5
20	7.4	155.0	0.9
21	4.1	165.0	0.1
22	9.2	175.0	-0.4
23	16.4	175.0	-0.7
24	19.2	175.0	-0.8
1	8.4	170.0	1.5
2	7.6	180.0	1.5
3	7.1	185.0	1.5
4	7.0	190.0	1.5
5	6.7	195.0	1.5
6	6.0	205.0	1.5
7	6.0	207.7	-0.5

STOP TIME MAY 16, 1990 HOUR 6 MINUTE 21

RELEASE NUMBER 90040

CONTAINMENT PURGE

STARTING TIME MAY 18, 1990 HOUR 18 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
18	17.4	325.0	-1.0
19	13.3	326.4	-1.0
20	13.9	323.4	-1.0
21	16.6	326.2	-1.1
22	14.4	326.8	-1.5
23	2.3	328.6	-0.8
24	1.4	323.4	-0.8
1	12.8	320.3	-0.5
2	10.5	314.7	-0.7
3	11.0	319.5	-0.9
4	11.2	323.9	-0.6
5	10.1	317.0	-0.7
6	8.8	315.7	-0.7
7	7.2	308.4	-0.8
8	7.7	317.8	-0.5
9	9.4	322.1	-0.5
10	10.9	325.0	-0.5
11	10.4	320.6	-0.5
12	9.7	271.6	-0.5
13	11.3	73.9	-0.9
14	7.7	204.6	-1.0
15	6.8	298.3	-1.0
16	6.0	288.7	-1.2
17	4.6	281.4	-1.4
18	3.5	261.1	-0.2
19	3.9	218.3	1.1

STOP TIME MAY 19, 1990 HOUR 18 MINUTE 22

STARTING TIME MAY 19, 1990 HOUR 22 MINUTE 4

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
22	4.0	158.4	2.3
23	5.7	128.5	0.6
24	6.4	149.7	-0.4
1	11.8	176.2	-0.8
2	15.8	192.7	-0.6
3	17.2	205.9	-0.5
4	17.7	219.0	-0.4
5	15.1	243.1	1.1

STOP TIME MAY 20, 1990 HOUR 4 MINUTE 8

RELEASE NUMBER 90041

CONTAINMENT PURGE

STARTING TIME MAY 22,1990 HOUR 21 MINUTE 23

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
21	12.5	247.5	4.1
22	8.9	259.7	3.4
23	-99.0	274.3	3.5
24	-99.0	315.3	6.0
1	5.2	319.3	4.6

STOP TIME MAY 23,1990 HOUR 0 MINUTE 49

STARTING TIME MAY 23,1990 HOUR 5 MINUTE 30

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	3.2	290.0	3.9
6	2.5	314.4	4.1
7	2.3	20.6	4.9
8	5.2	351.9	5.0
9	8.9	323.9	-0.1
10	10.4	336.0	-1.4
11	11.8	334.5	-1.4
12	12.9	338.8	-1.4
13	10.1	340.1	-1.5
14	10.6	334.8	-1.5

STOP TIME MAY 23,1990 HOUR 13 MINUTE 20



RELEASE NUMBER 90041

CONTAINMENT PURGE

STARTING TIME MAY 23, 1990 HOUR 14 MINUTE 51

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
14	10.6	334.8	-1.5
15	11.3	335.5	-1.5
16	10.0	331.6	-1.3
17	10.1	330.7	-1.2

STOP TIME MAY 23, 1990 HOUR 16 MINUTE 21



RELEASE NUMBER 90042 CONTAINMENT PURGE

STARTING TIME MAY 23, 1990 HOUR 16 MINUTE 39

TIME  
HOUR

WS10  
MPH

WD10  
DEG

DI110  
DEG C

16 10.0 331.6 -1.3  
17 10.1 330.7 -1.2  
18 9.1 323.5 -0.5  
19 7.6 318.2 0.1  
20 5.8 315.4 0.7  
21 5.2 324.8 0.2  
22 4.5 328.7 0.2  
23 3.8 321.0 1.3  
24 3.0 293.3 1.0  
1 2.5 273.2 1.5  
2 2.6 274.4 1.1  
3 2.1 224.1 2.0  
4 2.1 318.4 1.2  
5 2.4 267.7 1.4  
6 2.2 138.0 1.3  
7 4.7 120.6 0.4  
8 7.1 117.3 0.1  
9 9.9 120.5 -0.8  
10 11.8 129.9 -1.3  
11 12.0 126.7 -1.4  
12 11.7 125.8 -1.5  
13 11.9 127.3 -1.5  
14 11.5 135.1 -0.3  
15 11.1 152.0 -1.3  
16 10.7 143.8 -0.8  
17 8.0 136.9 -0.7  
18 5.9 123.9 0.5  
19 2.4 260.4 2.1  
20 1.8 193.3 3.5  
21 3.9 125.1 4.8  
22 5.3 120.1 4.1  
23 6.4 131.1 2.5  
24 7.3 164.0 1.0  
1 9.5 176.8 1.5  
2 5.6 172.8 0.3  
3 8.0 272.7 0.9  
4 10.1 303.6 -0.1

STOP TIME MAY 25, 1990 HOUR 3 MINUTE 46

STARTING TIME MAY 25,1990 HOUR 5 MINUTE 12

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	14.5	303.1	-0.6
6	19.3	303.2	-0.8
7	19.0	312.2	-0.5
8	20.3	322.9	-1.0
9	17.9	332.8	-1.2
10	14.7	342.2	-1.2
11	15.4	342.7	-1.5
12	14.9	347.1	-1.6
13	13.2	345.4	-1.5
14	11.4	346.1	-1.5
15	11.1	346.0	-1.5
16	9.5	342.1	-1.4
17	8.0	336.4	-1.0
18	4.3	314.8	0.4
19	3.1	284.3	0.6
20	2.9	286.0	1.2
21	2.8	282.3	1.2
22	2.5	291.1	1.9
23	2.1	232.8	1.0
24	1.5	238.4	2.3
1	1.4	262.3	2.5
2	1.4	179.7	2.7
3	1.4	148.1	2.8
4	1.4	201.2	3.2
5	4.2	219.2	2.2
6	2.3	216.9	2.0
7	3.2	241.3	0.6
8	4.0	254.0	0.5
9	4.2	272.7	-0.7
10	6.2	248.9	-1.1
11	4.1	290.3	-1.4
12	3.3	76.9	-1.6
13	3.9	3.0	-0.7
14	4.0	46.1	-1.3
15	3.5	75.5	-0.5
16	5.3	101.5	-1.1
17	5.3	127.9	-0.4
18	4.8	127.5	1.6
19	4.6	118.4	2.6

STOP TIME MAY 26,1990 HOUR 18 MINUTE 22

RELEASE NUMBER 90042      CONTAINMENT PURGE

STARTING TIME      MAY 26,1990      HOUR 21 MINUTE 52

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
21	5.8	126.5	2.1
22	6.8	116.6	2.5
23	8.1	122.6	3.2
24	8.3	125.3	2.5
1	9.4	142.6	0.4
2	10.5	143.4	0.6
3	9.2	131.2	1.2
4	13.3	156.4	-0.1
5	15.9	158.8	0.3
6	16.0	162.6	-0.5
7	15.9	165.3	-0.6
8	16.7	167.0	0.2
9	18.1	172.2	-0.5
10	17.8	188.7	-0.8
11	19.5	194.9	-0.4
12	17.8	189.5	-1.2
13	16.5	197.0	5.2
14	15.0	202.0	-0.5
15	10.3	186.9	-0.8
16	10.2	168.2	-0.6
17	13.4	175.9	-0.4
18	18.5	180.4	-0.4

STOP TIME      MAY 27,1990      HOUR 17 MINUTE 15

STARTING TIME      MAY 28,1990      HOUR 8 MINUTE 46

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
8	3.4	283.9	1.3
9	5.5	301.2	0.2
10	6.4	320.5	-0.6
11	7.6	324.4	-1.2
12	6.5	334.9	-1.2
13	4.2	343.5	-1.1
14	6.3	349.2	-1.2
15	4.8	14.2	-1.2
16	3.9	330.7	-1.1
17	3.8	309.8	-0.8
18	3.3	297.3	0.4
19	2.1	250.3	1.1
20	2.1	262.0	2.5
21	2.2	287.4	3.8
22	2.4	121.3	5.3
23	3.4	113.5	6.2
24	3.4	120.7	6.7



1	2.0	56.9	7.9
2	2.4	84.2	8.3
3	2.7	75.0	6.9
4	4.1	79.8	2.5
5	6.6	165.2	2.2
6	4.8	129.3	2.6
7	4.2	105.7	1.8
8	7.2	122.4	1.9
9	12.0	179.7	1.2
10	13.8	186.7	-0.7
11	11.7	191.8	-1.2
12	12.1	185.8	-1.3
13	11.9	176.7	-1.1
14	9.4	157.6	-1.1
15	10.4	129.2	-1.0
16	11.3	125.8	-0.9
17	8.1	121.1	-0.2
18	9.1	118.9	0.2

STOP TIME      MAY 29, 1990      HOUR 17 MINUTE 5



RELEASE NUMBER 90043 CONTAINMENT PURGE

STARTING TIME MAY 31, 1990 HOUR 21 MINUTE 0

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
21	1.3	259.9	0.9
22	1.3	210.8	0.4
23	1.3	205.4	1.4
24	1.3	187.9	2.5
1	3.7	158.1	2.1

STOP TIME JUNE 1, 1990 HOUR 0 MINUTE 53

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RELEASE NUMBER 90044

CONTAINMENT PURGE

STARTING TIME JUNE 1, 1990 HOUR 17 MINUTE 15

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	6.4	308.7	-0.3
18	4.6	307.2	1.0
19	3.7	275.0	1.1
20	6.0	290.3	2.1
21	4.6	306.7	2.3
22	5.1	294.5	2.3
23	3.8	283.2	2.1
24	2.5	288.1	1.8
1	2.5	263.5	1.4
2	2.2	243.0	2.0
3	2.2	253.8	2.4
4	2.2	155.0	3.6
5	2.4	199.1	4.2
6	2.1	42.7	5.6
7	1.9	269.0	6.5
8	3.8	255.3	2.6
9	3.6	181.0	0.8
10	3.0	203.9	-0.2
11	3.5	203.6	-1.2
12	4.8	217.8	-1.4
13	5.6	199.7	-1.6
14	6.0	212.8	-1.5
15	6.7	187.3	-1.4
16	7.8	170.2	-1.1
17	7.2	165.3	-0.3
18	3.5	104.5	3.2
19	2.8	274.2	6.0
20	3.3	282.8	4.3
21	5.0	296.2	3.5
22	5.8	292.5	2.9
23	4.0	282.0	2.7
24	3.6	275.9	2.7
1	3.1	291.7	3.1
2	2.7	307.5	2.5
3	2.8	286.9	3.0
4	3.5	278.8	2.6
5	2.2	291.9	3.7
6	2.4	30.8	5.4
7	1.8	45.9	5.4
8	1.9	2.9	6.5
9	1.8	4.8	5.6
10	2.3	57.5	2.6
11	2.6	61.0	-0.8
12	5.1	168.0	-1.2
13	8.1	219.3	-1.3
14	7.3	242.1	-1.0
15	8.1	245.6	-0.9
16	6.8	261.5	-0.2
17	7.5	259.9	0.1

18	9.7	312.2	0.7
19	8.6	304.0	0.3
20	8.0	295.3	0.4
21	8.1	303.0	0.3
22	8.2	304.0	0.1
23	11.3	293.9	0.2
24	9.7	279.4	0.4
1	10.5	294.7	0.1
2	11.7	288.1	-0.2
3	13.2	305.6	-0.4
4	12.2	312.4	-0.4
5	10.4	307.7	-0.5
6	9.6	307.8	-0.6
7	11.8	309.4	-0.6
8	11.7	308.2	-0.6

STOP TIME JUNE 4, 1990 HOUR 7 MINUTE 24

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RELEASE NUMBER 90045

CONTAINMENT PURGE

STARTING TIME JUNE 7, 1990 HOUR 17 MINUTE 19

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
17	6.8	331.0	-0.7
18	5.8	328.6	-1.3
19	4.5	321.0	-0.6
20	4.1	318.2	-0.9
21	5.7	340.7	-0.8
22	5.7	333.3	-0.8
23	5.3	324.3	-0.9
24	5.8	323.6	-0.6
1	7.6	335.6	-0.5
2	7.6	346.7	-0.2
3	6.0	323.8	2.7
4	5.9	322.3	0.5
5	7.1	324.6	0.5
6	7.0	327.4	0.1
7	7.2	329.5	-0.2
8	6.9	342.6	-0.3
9	8.3	350.0	-0.6
10	10.4	2.4	-1.0
11	9.5	350.5	-1.6
12	9.3	344.2	-1.5
13	7.9	353.3	-1.6
14	8.5	338.5	-1.5
15	6.4	357.1	-1.6
16	5.0	7.6	-1.2
17	3.7	347.5	-1.2
18	3.6	353.3	-1.1

STOP TIME JUNE 8, 1990 HOUR 17 MINUTE 23



RELEASE NUMBER 90046

CONTAINMENT PURGE

STARTING TIME JUNE 9, 1990 HOUR 0 MINUTE 57

TIME HOUR	WS10 MPH	WD10 DEG	D110 DEG C
1	6.3	119.4	-0.7
2	4.9	84.6	-0.6
3	6.4	85.4	-1.3
4	5.1	84.4	-0.9
5	5.0	70.2	-0.9
6	6.0	71.5	-0.9
7	6.0	46.5	-1.7
8	6.1	80.8	-1.5
9	8.0	95.5	-1.3
10	7.9	98.1	-1.1
11	8.9	109.9	-1.2
12	8.5	113.8	-1.4
13	7.4	116.6	-1.4
14	5.7	80.2	-1.3
15	5.7	47.3	-1.4
16	6.5	21.0	-1.4
17	6.3	13.5	-1.0
18	5.3	45.2	-1.3
19	4.6	67.0	-1.2
20	4.4	64.0	-1.1
21	3.7	49.8	-1.4
22	3.5	47.5	-1.4
23	3.6	30.0	-1.4
24	3.7	31.5	-1.3
1	2.0	62.8	-1.0
2	1.9	177.2	-1.2
3	3.3	146.7	-1.0
4	4.5	139.1	-1.0
5	4.5	147.3	-0.9
6	4.9	159.1	-0.9
7	6.9	170.6	-0.9
8	7.9	159.9	-0.9
9	8.4	159.2	-0.9
10	9.9	180.7	-1.0
11	11.4	186.4	-1.6
12	12.0	188.0	-1.4
13	12.0	188.0	-1.4
14	13.8	190.0	-1.4
15	13.9	179.2	-1.2
16	15.3	170.6	-1.1
17	14.4	169.1	-0.9
18	15.5	164.7	-0.7
19	12.7	167.8	-0.5
20	15.7	166.2	-0.3
21	18.7	175.7	-0.3
22	21.4	178.1	-0.4
23	22.8	184.8	-0.4
24	22.5	188.8	-0.4
1	22.1	184.6	-0.4

2	12.0	169.1	-0.5
3	10.8	167.6	-0.5
4	9.5	161.9	-0.6
5	9.4	172.3	-0.5
6	9.7	183.0	-0.4
7	5.8	144.7	-0.3
8	3.7	167.4	-0.1
9	4.4	211.9	0.3
10	5.5	236.7	-0.3
11	5.4	288.3	-1.1
12	6.9	324.3	-1.3
13	7.0	335.5	-1.0
14	6.5	340.7	-1.3
15	6.8	353.2	-1.2
16	6.3	352.8	-1.3
17	5.3	347.9	-0.6
18	4.9	335.3	-0.7
19	4.8	338.8	-0.4
20	3.2	303.4	0.2
21	3.8	301.8	0.3
22	3.9	332.9	-0.2
23	4.4	325.7	0.2
24	5.2	9.1	-0.5
1	3.2	10.6	-0.3
2	4.4	55.0	-0.4
3	7.4	53.0	-0.9
4	6.9	66.0	-1.0
5	6.1	64.1	-1.0
6	6.4	26.7	-1.1
7	8.0	359.4	-1.1
8	8.6	348.8	-1.1

STOP TIME JUNE 12, 1990 HOUR 7 MINUTE 19

RELEASE NUMBER 90047      CONTAINMENT PURGE

STARTING TIME      JUNE 14, 1990      HOUR 16 MINUTE 30

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
16	9.2	172.5	-0.2
17	7.5	167.4	0.3
18	8.6	177.1	0.2
19	9.1	198.5	1.2
20	11.8	207.8	3.1
21	12.3	210.2	3.6
22	9.2	209.7	4.2
23	5.0	328.8	2.3
24	3.2	310.5	1.8
1	3.0	288.6	1.6
2	3.8	327.9	0.7
3	5.8	318.5	0.3
4	10.2	326.9	-0.5
5	7.7	316.1	0.2
6	11.3	315.7	-0.5
7	10.6	308.9	-0.7
8	11.0	321.1	-0.9
9	11.4	324.6	-0.9
10	11.3	326.4	-0.5
11	10.5	324.9	-1.0
12	10.7	325.6	-1.2

STOP TIME      JUNE 15, 1990      HOUR 11 MINUTE 8

STARTING TIME      JUNE 15, 1990      HOUR 11 MINUTE 58

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
11	10.5	324.9	-1.0
12	10.7	325.6	-1.2
13	8.5	326.9	-1.5
14	9.5	322.5	-1.5
15	9.7	315.6	-1.6
16	9.4	307.1	-1.4
17	8.4	302.2	-1.0
18	7.5	305.7	-0.7
19	6.9	303.5	-0.6
20	6.0	293.3	-0.6
21	5.7	303.6	-0.3
22	4.0	312.9	-0.1
23	3.2	311.3	-0.2
24	4.0	300.7	-0.3
1	4.9	300.5	-0.9
2	5.4	307.5	-0.9
3	5.1	308.9	-1.0
4	4.6	312.5	-0.7



5	5.0	320.2	-1.2
6	4.8	320.9	-1.0
7	3.6	312.6	-1.1
8	3.4	321.5	-0.8
9	4.7	8.8	-1.1
10	4.7	19.4	-1.2
11	5.6	19.5	-1.4
12	7.0	14.5	-1.5
13	6.9	351.3	-1.4
14	5.8	328.6	-1.2
15	7.2	321.9	-1.1
16	6.3	345.4	-1.3
17	6.6	352.7	-1.1
18	5.7	356.6	-0.9
19	6.1	339.6	-0.7
20	5.7	320.5	-0.2
21	7.1	309.2	-0.2
22	8.9	309.6	-0.3
23	6.8	310.7	-0.6
24	6.1	314.2	-0.6
1	6.8	308.8	-0.6
2	8.5	317.5	-0.5
3	9.4	315.5	-0.3
4	9.1	314.8	-0.8
5	8.8	318.5	0.9
6	7.8	322.7	-0.7
7	7.4	310.9	-0.8
8	8.9	308.4	0.1
9	8.1	307.1	-0.8
10	9.0	320.4	-1.2
11	8.5	326.5	-1.2
12	9.3	321.5	-1.4
13	9.8	316.5	1.2
14	8.6	315.6	-0.5
15	7.1	312.3	-0.4
16	5.4	314.9	-0.3
17	4.3	297.8	-0.2
18	3.7	305.5	2.0
19	4.2	284.1	0.4
20	3.6	293.3	1.0
21	3.4	281.8	2.1
22	3.9	293.6	2.7
23	4.2	298.5	1.8
24	3.8	287.3	1.9
1	3.4	294.4	1.5

STOP TIME JUNE 18, 1990 HOUR 0 MINUTE 9



RELEASE NUMBER 90048      CONTAINMENT PURGE

STARTING TIME      JUNE 21, 1990      HOUR 1 MINUTE 38

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
1	2.8	296.3	2.1
2	3.0	292.1	1.6
3	3.3	304.2	1.7
4	2.7	298.6	2.1
5	2.6	262.5	1.1
6	3.9	253.9	0.7
7	4.3	262.5	2.2
8	4.6	31.4	3.4
9	2.7	70.9	1.8
10	2.5	303.0	0.3
11	2.8	112.0	-1.2
12	4.4	163.1	-0.7
13	7.3	189.0	-1.1

STOP TIME      JUNE 21, 1990      HOUR 12 MINUTE 28

STARTING TIME      JUNE 21, 1990      HOUR 13 MINUTE 18

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
13	7.3	189.0	-1.1
14	7.1	176.9	-1.0
15	7.8	175.4	-0.8
16	5.5	159.8	0.1
17	5.0	140.9	-0.2
18	4.2	125.7	0.1
19	4.2	115.7	0.3
20	3.0	102.9	-0.1

STOP TIME      JUNE 21, 1990      HOUR 19 MINUTE 22

RELEASE NUMBER 90048 CONTAINMENT PURGE  
 STARTING TIME JUNE 21, 1990 HOUR 20 MINUTE 38

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
20	3.0	102.9	-0.1
21	3.6	95.7	0.3
22	4.0	107.0	0.2
23	3.1	110.4	1.3
24	3.4	93.3	1.6
1	4.0	81.5	2.3
2	5.6	309.4	3.4
3	4.4	93.6	2.8
4	3.2	304.1	2.6
5	3.3	305.4	0.6
6	3.0	320.6	0.2
7	3.1	291.2	-0.2
8	3.9	337.7	-0.7
9	4.9	355.0	-0.8
10	5.7	12.6	-1.3
11	6.5	16.6	-1.5
12	7.2	3.3	-1.6
13	7.6	352.3	-0.3
14	9.5	349.0	-1.4
15	7.8	346.6	-1.2
16	7.7	336.8	-1.1
17	8.1	343.5	-1.0
18	5.9	341.0	-0.9
19	5.8	336.5	-0.9
20	8.9	322.6	-0.8
21	9.7	323.0	-0.6
22	10.2	324.9	-0.9
23	8.8	328.7	-0.7
24	9.0	333.5	-0.7
1	11.4	325.0	-0.8
2	10.2	326.7	-0.9
3	8.9	326.8	-0.8
4	8.3	328.6	-0.8
5	10.8	325.4	-0.9
6	10.6	329.0	-0.9
7	9.0	327.2	-0.9
8	8.1	320.1	-0.9
9	9.2	324.5	-1.0
10	11.7	318.7	0.1
11	10.4	317.4	-0.5
12	10.6	319.5	-0.8
13	11.1	319.1	-1.0
14	10.2	322.8	-1.0
15	10.8	324.2	-1.1
16	8.6	324.1	1.6
17	6.6	318.7	2.2
18	6.4	323.3	0.1
19	7.0	325.2	-0.5
20	6.8	323.5	-0.4

21	6.4	324.0	-0.4
22	4.4	314.4	-0.3
23	4.5	305.5	-0.2
24	5.5	302.2	-0.2
1	5.3	298.7	-0.3
2	4.8	300.4	-0.2
3	4.8	299.6	-0.3
4	5.0	299.4	0.3
5	5.1	301.0	0.9
6	5.1	304.3	0.1
7	4.3	312.7	-0.1
8	3.5	313.3	0.6
9	5.3	314.7	-0.5
10	6.3	321.9	-1.0
11	5.8	318.6	-1.1
12	5.1	306.4	-1.3
13	4.5	295.9	-1.3
14	4.9	288.0	-1.3
15	4.7	287.7	-0.9
16	3.1	278.3	-0.6
17	3.3	254.2	0.3
18	3.5	243.2	0.8
19	3.6	250.6	0.9
20	3.0	245.0	0.8
21	3.0	255.5	1.5
22	3.2	232.2	2.0
23	3.3	165.5	2.4
24	4.5	181.5	3.0
1	5.5	224.0	3.8
2	3.5	141.5	3.3
3	3.8	174.4	2.5
4	5.3	114.5	2.1

STOP TIME      JUNE 25, 1990      HOUR 3 MINUTE 43



RELEASE NUMBER 90049 CONTAINMENT PURGE  
 STARTING TIME JUNE 28, 1990 HOUR 15 MINUTE 15

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
16	7.2	137.1	-0.7
17	6.0	106.9	-0.3
18	13.1	204.1	1.5
19	11.7	227.6	1.7
20	12.1	253.9	1.4
21	8.9	276.8	0.3
22	7.7	277.4	0.8
23	8.9	283.8	2.5
24	8.6	299.2	0.1
1	8.4	294.0	-0.3
2	6.6	287.3	-0.3
3	7.3	262.9	0.2
4	7.3	267.9	0.2
5	9.3	262.5	0.6
6	9.6	270.7	0.3
7	9.4	275.1	-0.4
8	8.7	279.4	-0.3
9	8.6	285.2	-0.6
10	9.9	317.4	-1.2
11	8.8	326.9	-1.6
12	8.9	314.7	-1.7
13	7.2	311.5	-1.5
14	6.4	295.0	-1.3
15	4.9	281.8	-1.6
16	3.0	256.2	-1.3

STOP TIME JUNE 29, 1990 HOUR 15 MINUTE 28



RELEASE NUMBER 90001      DECAY TANK PURGE

STARTING TIME      APR 10, 1990      HOUR 21 MINUTE 10

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
21	2.4	265.0	2.0
22	2.4	270.0	2.0
23	2.4	280.0	2.0
24	2.4	325.3	2.0
1	4.2	115.0	2.9
2	3.6	120.0	1.7
3	3.0	120.0	1.1
4	2.4	125.0	1.5
5	2.3	120.0	2.1

STOP TIME      APR 11, 1990      HOUR 4 MINUTE 11

RELEASE NUMBER 90002      DECAY TANK PURGE

STARTING TIME      APR 11, 1990      HOUR 5 MINUTE 50

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	2.3	120.0	2.1
6	2.0	115.0	1.9
7	1.8	105.1	2.9
8	2.1	125.0	2.3
9	2.4	135.0	1.5
10	9.4	137.2	-0.5
11	4.4	236.9	-1.3
12	4.7	271.3	-1.5
13	6.3	309.7	-1.8
14	11.5	314.5	-1.9

STOP TIME      APR 11, 1990      HOUR 13 MINUTE 23

RELEASE NUMBER 90003 DFC V TANK PURGE

STARTING TIME MAY 1, 1990 HOUR 21 MINUTE 15

TIME HOUR	WS10 MPH	WJ10 DEG	DT110 DEG C
21	10.0	330.6	1.3
22	10.0	331.4	0.2
23	8.5	331.0	-0.3
24	9.3	333.9	-0.5
1	11.2	339.4	-0.5
2	11.8	330.9	-0.9
3	12.1	337.2	-0.8
4	11.3	240.9	-0.9

STOP TIME MAY 2, 1990 HOUR 3 MINUTE 45

RELEASE NUMBER 90004 DECAV TANK PURGE

STARTING TIME MAY 2, 1990 HOUR 4 MINUTE 57

TIME HOUR	WS10 Mph	WS10 DEG	DT110 DEG C
4	11.3	340.9	-0.9
5	11.5	336.1	-1.0
6	11.1	337.8	-0.6
7	11.3	333.5	-1.1
8	10.5	338.9	-0.4
9	10.5	338.3	-1.0
10	11.1	339.9	-0.9
11	10.0	345.0	-1.0
12	10.8	341.5	-1.1

STOP TIME MAY 2, 1990 HOUR 11 MINUTE 33



RELEASE NUMBER 90005

DECAY TANK PURGE

STARTING TIME MAY 2, 1990 HOUR 11 MINUTE 48

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
11	10.0	345.0	-1.0
12	10.8	341.5	-1.1
13	11.0	344.3	-1.0
14	9.5	341.5	-1.0
15	8.8	340.9	-1.1
16	8.4	0.2	-1.0
17	6.1	21.3	-1.0
18	5.2	32.2	-1.2
19	3.9	77.4	-0.3
20	3.7	205.3	0.2

STOP TIME MAY 2, 1990 HOUR 19 MINUTE 39

RELEASE NUMBER 90006 DECAY TANK PURGE

STARTING TIME MAY 17, 1990 HOUR 13 MINUTE 14

TIME  
HOUR

WS10 WD10 DT110  
MPH DEG DEG C

13 1.3 220.1 -1.0  
14 3.2 204.5 -1.0

STOP TIME MAY 17, 1990 HOUR 13 MINUTE 25

STARTING TIME MAY 17, 1990 HOUR 13 MINUTE 26

TIME  
HOUR

WS10 WD10 DT110  
MPH DEG DEG C

13 1.3 220.1 -1.0  
14 3.2 204.5 -1.0  
15 6.4 341.8 -0.7  
16 7.8 345.6 -1.3  
17 8.7 332.0 -1.1  
18 7.0 324.0 -0.2  
19 7.0 324.8 -0.5  
20 9.8 335.7 -1.3  
21 8.6 342.5 -1.0

STOP TIME MAY 17, 1990 HOUR 20 MINUTE 35

RELEASE NUMBER 90007      DECAY TANK PURGE

ERROR RELEASE NO. 9000711 PAST STOP



RELEASE NUMBER 90008 DECAV TANK PURGE

STARTING TIME MAY 27, 1990 HOUR 17 MINUTE 32

TIME  
HOUR

WS10 WD10 DT110  
MPH DEG DEG C

17 13.4 175.9 -0.4  
18 18.5 180.4 -0.4

STOP TIME MAY 27, 1990 HOUR 17 MINUTE 38

STARTING TIME MAY 27, 1990 HOUR 17 MINUTE 38

TIME  
HOUR

WS10 WD10 DT110  
MPH DEG DEG C

17 13.4 175.9 -0.4  
18 18.5 180.4 -0.4  
19 15.3 180.1 -0.6  
20 17.5 188.4 -0.3  
21 10.3 184.7 -0.5

STOP TIME MAY 27, 1990 HOUR 20 MINUTE 7

RELEASE NUMBER 90008 DECAV TANK PURGE

STARTING TIME MAY 27, 1990 HOUR 20 MINUTE 8

TIME  
HOUR

WS10 WD10 DT110  
MPH DEG DEG C

20	17.5	168.4	-0.3
21	10.3	184.7	-0.5
22	8.7	172.3	-0.4
23	10.3	172.7	-0.2

STOP TIME MAY 27, 1990 HOUR 22 MINUTE 30

STARTING TIME MAY 27, 1990 HOUR 22 MINUTE 30

TIME  
HOUR

WS10 WD10 DT110  
MPH DEG DEG C

22	8.7	172.3	-0.4
23	10.3	172.7	-0.2
24	6.6	213.4	-0.4

STOP TIME MAY 27, 1990 HOUR 23 MINUTE 10

RELEASE NUMBER 90009		DECAY TANK PURGE	
TIME	STARTING TIME	STOP TIME	DT110
HOUR	MINUTE	MINUTE	DEG C
1	52	30	0.3
2		287.2	1.4
3		256.2	2.7
4		160.1	3.5
5		298.5	0.6
6		7.1	0.3
7		316.8	1.3
8		319.4	1.3
9		309.3	0.2
		283.9	
		301.2	

RELEASE NUMBER 90010      DECAY TANK PURGE

STARTING TIME      JUNE 26, 1990      HOUR 5 MINUTE 4

TIME HOUR	WS10 MPH	WD10 DEG	DT110 DEG C
5	4.6	252.3	-0.2
6	3.2	2.8	0.1
7	2.8	98.3	1.2
8	2.1	87.6	2.8
9	1.8	6.4	2.1
10	2.4	253.8	1.7
11	3.4	294.9	-0.1
12	4.7	299.8	-0.2

STOP TIME      JUNE 26, 1990      HOUR 11 MINUTE 40



SECTION VII  
POTENTIAL DOSES TO INDIVIDUALS AND POPULATIONS

(Regulatory Guide 1.21.)

January 1, 1990 - June 31, 1990

## POTENTIAL DOSES TO INDIVIDUALS AND POPULATIONS

### A. Potential Semiannual Doses to Individuals from Gaseous Releases

Total body, skin and organ doses from ground releases were calculated in millirem (mrem) to an average adult, teenager, child and infant using the annual configuration of the GASPAR program. Results to each receptor are shown in Tables VII-A-1 through VII-A-30. In its annual configuration, GASPAR assumes that all release rates are entered in curies per year (Ci/yr). If the total curies released per isotope during the semiannual period are assumed released for an annual period (Ci/yr), this release rate reduction is conveniently offset by the annual usage or dose factors, thereby allowing GASPAR to calculate semiannual doses.

The inputs to GASPAR for the semiannual period from January 1, 1990 through June 30, 1990 were as follows:

- (1) All gaseous effluents were as described in Section III.
- (2) Entrained gases (Xe-133, XENON-131m and Xe-135) from Liquid effluents were described in Section IV.
- (3) Semiannual "X/Q's" at the actual receptor locations, which were corrected for open terrain, plume depletion, and radioactive decay factor were calculated according to Regulatory Guide 1.111. Also included were semiannual deposition rates corrected for the open terrain factor.
- (4) The production, intake and grazing fractions were as follows: 1.0 for fresh leafy vegetation grown locally, 0.5 for the pasture grazing season, 0.76 for vegetation intake grown in gardens, 1 for daily intake of animals while on pasture and 8 g/m<sup>3</sup> for the air water concentrations.

A. Potential Semiannual Doses to Individuals from Gaseous Releases (Con't)

- (5) All dose factors, transport times from receptor to individual, and usage factors were defined by Regulatory Guide 1.109 in GASPAR.
- (6) Site specific information, within a five mile radius of the plant, on types of receptors located in each sector was used. That is, if a cow was not present in a sector, then the milk pathway for that sector was not considered. If it was present, then its actual sector distance was used.

These inputs introduce a most conservative approach for the following reasons:

- (1) The open terrain and deposition corrections increase semiannual "X/Q's" by a factor ranging between 1.0 and 4.0.
- (2) The production, intake and grazing fractions, as defined in the input definition statement, represent an environmental area in an extremely conservative manner.

B. Potential Semiannual Doses to Population from Gaseous Releases

The GASPAR program in its annual configuration was also used to calculate the ALARA integrated population dose summary for the total body, skin and organ doses in manrems for all individuals within a 50 mile radius population. Results are shown in Table VII-C-1. The population integrated dose is the summation of the dose received by all individuals and has units of man-thyroid-rem when applied to the summation of thyroid doses. The same inputs were used as in the individual case with the addition of the following:

- (1) A total population of 734,668, based on the 1980 census, was used to define the sector segments within a 50 mile radius of the plant.

## Potential Semiannual Doses to Population from Gaseous Releases (Con't)

- (2) Total productions for milk, meat and vegetation were based on 1973 annual data for Nebraska as recommended by the NRC for use in GASPAR.

### C. Potential Semiannual Doses to Individuals from Liquid Releases

The body, skin and organ mrem for liquid releases were calculated for all significant liquid pathways using the annual configuration of the LADTAP program. Dose conversion factors used by LADTAP for ingestion and shoreline deposition are shown in Table VII-D-1. Results are shown in Tables VII-D-2 through VII-D-9.

The inputs to LADTAP for the semiannual period from January through June 1990 were as follows:

- (1) All liquid effluents were as described in Section IV, except for the entrained gases (Xe-133, Xe-131m, and Xe-135).
- (2) A plant discharge rate of 802 cubic feet per second (CFS) or  $8.02E+02$  was used.
- (3) Dilution factors (inverse of the mixing ratios) were computed based on Regulatory Guide 1.113 (equation 7 in Section 2.a.1 of Appendix A) for a one-dimensional transport model.
- (4) A drinking water transport time of 6.6 hours to the Omaha intake and 7.0 hours to the Council Bluffs intake for the ALARA doses in Table VII-D-2 through VII-D-5 was used. For Tables VII-D-6 through VII-D-9, a transport time of 0.0 was used from the plant to the discharge site.
- (5) A shorewidth factor of 0.2 was used.



## Potential Semiannual Doses to Individuals from Liquid Releases (Con't)

- (6) All consumption rates, using rates, and transport times from receptor to individual were as defined by Regulatory Guide 1.109 in LADTAP.

The discharge site in Tables VII-D-6 through VII-D-9 was chosen to present a most conservative estimate of mrem dose for an average adult, teenager, child and infant. A conservative approach is also presented by the assumption that Omaha and Council Bluffs receive all drinking water from the Missouri River.

### D. Potential Semiannual Doses to Population from Liquid Releases

The LADTAP program in its annual configuration was also used to calculate the total body and organ doses for the population of 734,668 within a 50 mile radius of the plant. Results are shown in Tables VII-E-1 through VII-E-6. The same input was used as in the individual cases with the addition of the following:

- (1) Dilution factors and transport times for the pathways of sportfish, commercial fish, recreation and biota were calculated based on a distance of two miles downstream as approximately the distance to the nearest recreational facility - DeSoto Bend National Wildlife Refuge.
- (2) The total fish harvest for both sport and commercial purposes was calculated using an average commercial fish catch for Nebraska.

### E. Direct Radiation Doses to Individuals and Population

Direct radiation doses, attributed to the gamma radiation emitted from the containment structure, were not observed above local background at any TLD sample locations for this semiannual period.

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 1 RES, VEG  
 AT 4.58 MILES N

BETA AIR DOSE = 1.10E-03 MILLRADS  
 GAMMA AIR DOSE = 3.80E-04 MILLRADS

TABLE VII-A-1

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.23E-04	2.23E-04	2.23E-04	2.23E-04	2.23E-04	2.23E-04	2.34E-04	6.28E-04
GROUND	5.03E-08	5.03E-08	5.03E-08	5.03E-08	5.03E-08	5.03E-08	5.03E-08	6.11E-08
VEGET								
ADULT	2.94E-05	2.91E-05	7.60E-07	2.94E-05	2.96E-05	1.31E-04	2.90E-05	2.90E-05
TEEN	3.36E-05	3.33E-05	8.80E-07	3.35E-05	3.38E-05	1.18E-04	3.33E-05	3.33E-05
CHILD	5.20E-05	5.16E-05	1.50E-06	5.19E-05	5.21E-05	1.80E-04	5.15E-05	5.15E-05
INHAL								
ADULT	1.61E-05	1.61E-05	5.37E-08	1.61E-05	1.62E-05	3.25E-05	1.61E-05	1.61E-05
TEEN	1.62E-05	1.62E-05	7.05E-08	1.63E-05	1.63E-05	3.66E-05	1.62E-05	1.62E-05
CHILD	1.44E-05	1.43E-05	8.84E-08	1.44E-05	1.44E-05	3.74E-05	1.43E-05	1.43E-05
INFANT	8.26E-06	8.24E-06	6.37E-08	8.30E-06	8.31E-06	2.94E-05	8.23E-06	8.23E-06

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 2 RES. VEG  
 AT 1.92 MILES NNE

BETA AIR DOSE = 5.69E-03 MILLRADS  
 GAMMA AIR DOSE = 1.98E-03 MILLRADS

TABLE VII-A-2

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.16E-03	1.16E-03	1.16E-03	1.16E-03	1.16E-03	1.16E-03	1.22E-03	3.26E-03
GROUND	2.61E-07	2.61E-07	2.61E-07	2.61E-07	2.61E-07	2.61E-07	2.61E-07	3.17E-07
VEGET								
ADULT	1.51E-04	1.50E-04	3.94E-06	1.51E-04	1.52E-04	6.81E-04	1.49E-04	1.49E-04
TEEN	1.73E-04	1.71E-04	4.55E-06	1.72E-04	1.74E-04	6.12E-04	1.71E-04	1.71E-04
CHILD	2.67E-04	2.65E-04	7.76E-06	2.67E-04	2.68E-04	9.33E-04	2.65E-04	2.65E-04
INHAL								
ADULT	8.29E-05	8.28E-05	2.96E-07	8.30E-05	8.32E-05	1.72E-04	8.27E-05	8.27E-05
TEEN	8.34E-05	8.33E-05	3.87E-07	8.36E-05	8.39E-05	1.94E-04	8.32E-05	8.32E-05
CHILD	7.38E-05	7.36E-05	4.84E-07	7.40E-05	7.43E-05	1.99E-04	7.36E-05	7.36E-05
INFANT	4.25E-05	4.23E-05	3.47E-07	4.27E-05	4.28E-05	1.57E-04	4.23E-05	4.23E-05



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 3 RES  
 AT 1.52 MILES NE

BETA AIR DOSE = 7.05E-03 MILLRADS  
 GAMMA AIR DOSE = 2.45E-03 MILLRADS

TABLE VII-A-3

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.44E-03	1.44E-03	1.44E-03	1.44E-03	1.44E-03	1.44E-03	1.51E-03	4.04E-03
GROUND	2.64E-07	2.64E-07	2.64E-07	2.64E-07	2.64E-07	2.64E-07	2.64E-07	3.21E-07
INHAL								
ADULT	1.03E-04	1.02E-04	3.70E-07	1.03E-04	1.03E-04	2.13E-04	1.02E-04	1.02E-04
TEEN	1.03E-04	1.03E-04	4.85E-07	1.03E-04	1.04E-04	2.41E-04	1.03E-04	1.03E-04
CHILD	9.13E-05	9.11E-05	6.06E-07	9.16E-05	9.19E-05	2.47E-04	9.11E-05	9.10E-05
INFANT	5.26E-05	5.24E-05	4.34E-07	5.28E-05	5.29E-05	1.95E-04	5.24E-05	5.24E-05



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 4 VEG  
 AT 3.38 MILES NE

BETA AIR DOSE =  $1.34\text{E}-03$  MILLRADS  
 GAMMA AIR DOSE =  $4.62\text{E}-04$  MILLRADS

TABLE VII-A-4

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	$2.71\text{E}-04$	$2.71\text{E}-04$	$2.71\text{E}-04$	$2.71\text{E}-04$	$2.71\text{E}-04$	$2.71\text{E}-04$	$2.64\text{E}-04$	$7.63\text{E}-04$
GROUND	$3.70\text{E}-08$	$3.70\text{E}-08$	$3.70\text{E}-08$	$3.70\text{E}-08$	$3.70\text{E}-08$	$3.70\text{E}-08$	$3.70\text{E}-08$	$4.50\text{E}-08$
VEGET								
ADULT	$3.54\text{E}-05$	$3.52\text{E}-05$	$5.59\text{E}-07$	$3.54\text{E}-05$	$3.56\text{E}-05$	$1.11\text{E}-04$	$3.52\text{E}-05$	$3.52\text{E}-05$
TEEN	$4.05\text{E}-05$	$4.03\text{E}-05$	$6.47\text{E}-07$	$4.05\text{E}-05$	$4.06\text{E}-05$	$1.03\text{E}-04$	$4.03\text{E}-05$	$4.03\text{E}-05$
CHILD	$6.27\text{E}-05$	$6.24\text{E}-05$	$1.10\text{E}-06$	$6.27\text{E}-05$	$6.28\text{E}-05$	$1.57\text{E}-04$	$6.24\text{E}-05$	$6.24\text{E}-05$

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
SPECIAL LOCATION # 5 RES. VEG  
AT 4.82 MILES ENE

BETA AIR DOSE = 6.85E-04 MILLRADS  
GAMMA AIR DOSE = 2.35E-04 MILLRADS

TABLE VII-A-5

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.38E-04	1.38E-04	1.38E-04	1.38E-04	1.38E-04	1.38E-04	1.45E-04	3.89E-04
GROUND	1.49E-08	1.49E-08	1.49E-08	1.49E-08	1.49E-08	1.49E-08	1.49E-08	1.81E-08
VEGET								
ADULT	1.82E-05	1.82E-05	2.26E-07	1.82E-05	1.83E-05	4.86E-05	1.82E-05	1.82E-05
TEEN	2.09E-05	2.08E-05	2.62E-07	2.09E-05	2.09E-05	4.61E-05	2.08E-05	2.08E-05
CHILD	3.23E-05	3.22E-05	4.47E-07	3.23E-05	3.24E-05	7.05E-05	3.22E-05	3.22E-05
INHAL								
ADULT	1.01E-05	1.01E-05	3.33E-08	1.01E-05	1.01E-05	2.03E-05	1.01E-05	1.01E-05
TEEN	1.01E-05	1.01E-05	4.37E-08	1.02E-05	1.02E-05	2.28E-05	1.01E-05	1.01E-05
CHILD	8.97E-06	8.95E-06	5.49E-08	8.99E-06	9.02E-06	2.33E-05	8.95E-06	8.95E-06
INFANT	5.16E-06	5.15E-06	3.95E-08	5.19E-06	5.20E-06	1.83E-05	5.15E-06	5.15E-06

BETA AIR DOSE = 1.24E-03 MILLRADS  
 GAMMA AIR DOSE = 4.28E-04 MILLRADS

TABLE VII-A-6

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.51E-04	2.51E-04	2.51E-04	2.51E-04	2.51E-04	2.51E-04	2.63E-04	7.08E-04
GROUND	2.61E-08	2.61E-08	2.61E-08	2.61E-08	2.61E-08	2.61E-08	2.61E-08	3.16E-08
VEGET								
ADULT	3.31E-05	3.30E-05	3.95E-07	3.31E-05	3.32E-05	8.60E-05	3.29E-05	3.29E-05
TEEN	3.78E-05	3.77E-05	4.57E-07	3.78E-05	3.79E-05	8.17E-05	3.77E-05	3.77E-05
CHILD	5.86E-05	5.84E-05	7.78E-07	5.85E-05	5.87E-05	1.25E-04	5.83E-05	5.83E-05
INHAL								
ADULT	1.83E-05	1.82E-05	6.06E-08	1.83E-05	1.83E-05	3.68E-05	1.82E-05	1.82E-05
TEEN	1.84E-05	1.84E-05	7.95E-08	1.84E-05	1.85E-05	4.13E-05	1.83E-05	1.83E-05
CHILD	1.63E-05	1.62E-05	9.98E-08	1.63E-05	1.64E-05	4.22E-05	1.62E-05	1.62E-05
INFANT	9.36E-06	9.33E-06	7.19E-08	9.41E-06	9.42E-06	3.32E-05	9.33E-06	9.33E-06

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 7 RES  
 AT 4.20 MILES ESE

BETA AIR DOSE = 2.26E-03 MILLRADS  
 GAMMA AIR DOSE = 7.78E-04 MILLRADS

TABLE VII-A-7

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	4.56E-04	4.56E-04	4.56E-04	4.56E-04	4.56E-04	4.56E-04	4.78E-04	1.29E-03
GROUND	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	4.70E-08	5.71E-08
INHAL								
ADULT	3.31E-05	3.31E-05	1.11E-07	3.32E-05	3.33E-05	6.69E-05	3.31E-05	3.31E-05
TEEN	3.33E-05	3.33E-05	1.46E-07	3.34E-05	3.35E-05	7.53E-05	3.33E-05	3.33E-05
CHILD	2.95E-05	2.94E-05	1.83E-07	2.96E-05	2.97E-05	7.70E-05	2.94E-05	2.94E-05
INFANT	1.70E-05	1.69E-05	1.31E-07	1.71E-05	1.71E-05	6.05E-05	1.69E-05	1.69E-05



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 8 VEG  
 AT 5.04 MILES ESE

BETA AIR DOSE = 1.65E-03 MILLRADS  
 GAMMA AIR DOSE = 5.67E-04 MILLRADS

TABLE VII-A-8

PATHWAY	T.BODY	GI-TRACT	LONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	3.32E-04	3.32E-04	3.32E-04	3.32E-04	3.32E-04	3.32E-04	3.48E-04	9.37E-04
GROUND	3.37E-08	3.37E-08	3.37E-08	3.37E-08	3.37E-08	3.37E-08	3.37E-08	4.10E-08
VEGET								
ADULT	4.38E-05	4.36E-05	5.11E-07	4.38E-05	4.39E-05	1.12E-04	4.36E-05	4.36E-05
TEEN	5.01E-05	4.99E-05	5.91E-07	5.01E-05	5.02E-05	1.07E-04	4.99E-05	4.99E-05
CHILD	7.76E-05	7.73E-05	1.01E-06	7.75E-05	7.77E-05	1.64E-04	7.72E-05	7.72E-05

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 9 RES, VEG  
 AT 1.69 MILES SE

BETA AIR DOSE = 1.18E-02 MILLRADS  
 GAMMA AIR DOSE = 4.12E-03 MILLRADS

TABLE VII-A-9

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.42E-03	2.42E-03	2.42E-03	2.42E-03	2.42E-03	2.42E-03	2.54E-03	6.79E-03
GROUND	6.10E-07	6.10E-07	6.10E-07	6.10E-07	6.10E-07	6.10E-07	6.10E-07	7.41E-07
VEGET								
ADULT	3.15E-04	3.12E-04	9.19E-06	3.15E-04	3.17E-04	1.55E-03	3.11E-04	3.11E-04
TEEN	3.60E-04	3.57E-04	1.06E-05	3.59E-04	3.62E-04	1.39E-03	3.56E-04	3.56E-04
CHILD	5.57E-04	5.52E-04	1.81E-05	5.56E-04	5.59E-04	2.11E-03	5.51E-04	5.51E-04
INHAL								
ADULT	1.73E-04	1.72E-04	6.21E-07	1.73E-04	1.73E-04	3.59E-04	1.72E-04	1.72E-04
TEEN	1.74E-04	1.73E-04	8.13E-07	1.74E-04	1.75E-04	4.05E-04	1.73E-04	1.73E-04
CHILD	1.54E-04	1.53E-04	1.02E-06	1.54E-04	1.55E-04	4.15E-04	1.53E-04	1.53E-04
INFANT	8.84E-05	8.82E-05	7.29E-07	8.89E-05	8.90E-05	3.28E-04	8.81E-05	8.81E-05

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATIONS # 10 BEEF  
 AT 4.75 MILES SE

BETA AIR DOSE = 1.44E-03 MILLRADS  
 GAMMA AIR DOSE = 4.98E-04 MILLRADS

TABLE VII-A-10

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.92E-04	2.92E-04	2.92E-04	2.92E-04	2.92E-04	2.92E-04	3.06E-04	8.23E-04
GROUND	5.63E-08	5.63E-08	5.63E-08	5.63E-08	5.63E-08	5.63E-08	5.63E-08	6.84E-08
MEAT								
ADULT	5.50E-06	5.49E-06	3.83E-08	5.52E-06	5.55E-06	1.94E-05	5.48E-06	5.48E-06
TEEN	3.29E-06	3.27E-06	3.02E-08	3.30E-06	3.33E-06	1.33E-05	3.27E-06	3.27E-06
CHILD	3.98E-06	3.95E-06	5.29E-08	3.99E-06	4.02E-06	1.91E-05	3.95E-06	3.95E-06

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION 0 11 RES  
 AT 0.89 MILES SSE

BETA AIR DOSE = 3.58E-02 MILLRADS  
 GAMMA AIR DOSE = 1.25E-02 MILLRADS

TABLE VII-A-11

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	7.36E-03	7.36E-03	7.36E-03	7.36E-03	7.36E-03	7.36E-03	7.71E-03	2.06E-02
GROUND	2.87E-06	2.87E-06	2.87E-06	2.87E-06	2.87E-06	2.87E-06	2.87E-06	3.48E-06
INHAL								
ADULT	5.20E-04	5.20E-04	1.92E-06	5.21E-04	5.22E-04	1.09E-03	5.19E-04	5.19E-04
TEEN	5.24E-04	5.23E-04	2.52E-06	5.25E-04	5.27E-04	1.23E-03	5.23E-04	5.22E-04
CHILD	4.63E-04	4.62E-04	3.14E-06	4.65E-04	4.66E-04	1.27E-03	4.62E-04	4.62E-04
INFANT	2.67E-04	2.66E-04	2.25E-06	2.68E-04	2.68E-04	1.00E-03	2.66E-04	2.66E-04



BETA AIR DOSE = 3.23E-02 MILLRADS  
 GAMMA A, B DOSE = 1.13E-02 MILLRADS

TABLE VII A-12

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	5.62E-03	5.62E-03	6.62E-03	6.62E-03	6.62E-03	6.62E-03	6.94E-03	1.85E-02
GROUND	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	2.49E-06	3.02E-06
VEGET								
ADULT	8.59E-04	8.49E-04	3.74E-05	8.60E-04	8.71E-04	5.90E-03	8.44E-04	8.44E-04
TEEN	9.82E-04	9.70E-04	4.33E-05	9.81E-04	9.91E-04	5.16E-03	9.66E-04	9.66E-04
CHILD	1.52E-03	1.50E-03	7.39E-05	1.52E-03	1.53E-03	7.86E-03	1.50E-03	1.50E-03

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCAT # 13 BEEF  
 AT 2.51 MILES SSE

BETA AIR DOSE = 3.32E-03 MILLRADS  
 GAMMA AIR DOSE = 1.15E-03 MILLRADS

TABLE VII-A-13

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.77E-04	6.77E-04	6.77E-04	6.77E-04	6.77E-04	6.77E-04	7.10E-04	1.90E-03
GROUND	2.02E-07	2.02E-07	2.02E-07	2.02E-07	2.02E-07	2.02E-07	2.02E-07	2.45E-07
MEAT								
ADULT	1.26E-05	1.26E-05	1.37E-07	1.27E-05	1.28E-05	6.22E-05	1.25E-05	1.25E-05
TEEN	7.54E-06	7.49E-06	1.09E-07	7.59E-06	7.68E-06	4.34E-05	7.47E-06	7.47E-06
CHILD	9.12E-03	9.04E-06	1.89E-07	9.19E-06	9.29E-06	6.33E-05	9.02E-06	9.02E-06

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 14 RES, VEG  
 AT 0.74 MILES S

BETA AIR DOSE = 5.69E-02 MILLRADS  
 GAMMA AIR DOSE = 1.99E-02 MILLRADS

TABLE VII-A-14

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.17E-02	1.17E-02	1.17E-02	1.17E-02	1.17E-02	1.17E-02	1.23E-02	3.27E-02
GROUND	3.02E-06	3.02E-06	3.02E-06	3.02E-06	3.02E-06	3.02E-06	3.02E-06	3.67E-06
VEGET								
ADULT	1.50E-03	1.49E-03	4.54E-05	1.31E-03	1.52E-03	7.63E-03	1.49E-03	1.49E-03
TEEN	1.72E-03	1.71E-03	5.26E-05	1.72E-03	1.73E-03	6.80E-03	1.70E-03	1.70E-03
CHILD	2.67E-03	2.64E-03	8.96E-05	2.66E-03	2.67E-03	1.04E-02	2.64E-03	2.64E-03
INHAL								
ADULT	8.25E-04	8.24E-04	3.08E-06	8.26E-04	8.29E-04	1.74E-03	8.23E-04	8.23E-04
TEEN	8.31E-04	8.29E-04	4.03E-06	8.33E-04	8.36E-04	1.97E-03	8.29E-04	8.29E-04
CHILD	7.35E-04	7.33E-04	5.03E-06	7.37E-04	7.40E-04	2.02E-03	7.33E-04	7.33E-04
INFANT	4.23E-04	4.21E-04	3.60E-06	4.25E-04	4.26E-04	1.60E-03	4.21E-04	4.21E-04



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 15 BEEF PORK  
 AT 2.78 MILES S

BETA AIR DOSE = 2.68E-03 MILLRADS  
 GAMMA AIR DOSE = 9.29E-04 MILLRADS

TABLE VII-A-15

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	5.45E-04	5.45E-04	5.45E-04	5.45E-04	5.45E-04	5.45E-04	5.72E-04	1.53E-03
GROUND	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.10E-07	1.34E-07
MEAT								
ADULT	1.02E-05	1.01E-05	7.49E-08	1.02E-05	1.07E-05	3.72E-05	1.01E-05	1.01E-05
TEEN	6.07E-06	6.04E-06	5.91E-08	6.10E-06	6.15E-06	2.57E-05	6.03E-06	6.03E-06
CHILD	7.34E-06	7.29E-06	1.03E-07	7.37E-06	7.43E-06	3.70E-05	7.28E-06	7.28E-06



FOPT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 16 RES  
 AT 0.66 MILES SSW

BETA AIR DOSE =  $3.71E-02$  MILLRADS  
 GAMMA AIR DOSE =  $1.30E-02$  MILLRADS

TABLE VII-A-16

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	$7.62E-03$	$7.62E-03$	$7.62E-03$	$7.62E-03$	$7.62E-03$	$7.62E-03$	$7.99E-03$	$2.13E-02$
GROUND	$1.65E-06$	$1.65E-06$	$1.65E-06$	$1.65E-06$	$1.65E-06$	$1.65E-06$	$1.65E-06$	$2.00E-06$
INHAL								
ADULT	$5.39E-04$	$5.39E-04$	$2.03E-06$	$5.40E-04$	$5.42E-04$	$1.14E-03$	$5.38E-04$	$5.38E-04$
TEEN	$5.43E-04$	$5.42E-04$	$2.65E-06$	$5.44E-04$	$5.46E-04$	$1.29E-03$	$5.41E-04$	$5.41E-04$
CHILD	$4.80E-04$	$4.9E-04$	$3.31E-06$	$4.32E-04$	$4.83E-04$	$1.33E-03$	$4.79E-04$	$4.79E-04$
INFANT	$2.76E-04$	$2.7E-04$	$2.37E-06$	$2.78E-04$	$2.78E-04$	$1.05E-03$	$2.75E-04$	$2.75E-04$

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 1 BEEF  
 AT 0.67 MILES SSW

BETA AIR DOSE =  $3.64E-02$  MILLRADS  
 GAMMA AIR DOSE =  $1.27E-02$  MILLRADS

TABLE VII-A-17

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	$7.46E-03$	$7.46E-03$	$7.46E-03$	$7.46E-03$	$7.46E-03$	$7.46E-03$	$7.83E-03$	$2.05E-02$
GROUND	$1.60E-06$	$1.60E-06$	$1.60E-06$	$1.60E-06$	$1.60E-06$	$1.60E-06$	$1.60E-06$	$1.95E-06$
MEAT								
ADULT	$1.35E-04$	$1.36E-04$	$1.09E-06$	$1.37E-04$	$1.38E-04$	$5.30E-04$	$1.36E-04$	$1.36E-04$
TEEN	$8.15E-05$	$8.11E-05$	$8.59E-07$	$8.19E-05$	$8.26E-05$	$3.66E-04$	$8.09E-05$	$8.09E-05$
CHILD	$9.85E-05$	$9.79E-05$	$1.50E-06$	$9.91E-05$	$9.99E-05$	$5.29E-04$	$9.78E-05$	$9.78E-05$

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 2 VEG  
 AT 0.75 MILES SSW

BETA AIR DOSE = 3.37E-02 MILLRADS  
 GAMMA AIR DOSE = 1.18E-02 MILLRADS

TABLE VII-A-18

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.92E-03	6.92E-03	6.92E-03	6.92E-03	6.92E-03	6.92E-03	7.26E-03	1.94E-02
GROUND	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.48E-06	1.80E-06
VEGET								
ADULT	8.85E-04	8.79E-04	2.22E-05	8.85E-04	8.92E-04	3.88E-03	8.76E-04	8.76E-04
TEEN	1.01E-03	1.01E-03	2.57E-05	1.01E-03	1.02E-03	3.50E-03	1.00E-03	1.00E-03
CHILD	1.57E-03	1.55E-03	4.39E-05	1.56E-03	1.57E-03	3.34E-03	1.55E-03	1.55E-03



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 3 RES  
 AT 0.75 MILES SW

BETA AIR DOSE = 2.88E-02 MILLRADS  
 GAMMA AIR DOSE = 1.01E-02 MILLRADS

TABLE VII-A-19

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	5.91E-03	5.91E-03	5.91E-03	5.91E-03	5.91E-03	5.91E-03	6.20E-03	1.66E-02
GROUND	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.36E-06	1.66E-06
INHAL								
ADULT	4.16E-04	4.15E-04	1.55E-06	4.16E-04	4.17E-04	8.75E-04	4.15E-04	4.15E-04
TEEN	4.19E-04	4.18E-04	2.02E-06	4.20E-04	4.21E-04	9.89E-04	4.18E-04	4.17E-04
CHILD	3.70E-04	3.69E-04	2.53E-06	3.71E-04	3.73E-04	1.02E-03	3.69E-04	3.69E-04
INFANT	2.13E-04	2.12E-04	1.81E-06	2.14E-04	2.15E-04	8.05E-04	2.12E-04	2.12E-04



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 4 BEEF  
 AT 0.91 MILES SW

BETA AIR DOSE =  $3.67\text{E}-02$  MILLRADS  
 GAMMA AIR DOSE =  $1.28\text{E}-02$  MILLRADS

TABLE VII-A-20

PATHWAY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	$7.54\text{E}-03$	$7.54\text{E}-03$	$7.54\text{E}-03$	$7.54\text{E}-03$	$7.54\text{E}-03$	$7.90\text{E}-03$	$2.11\text{E}-02$
GROUND	$1.66\text{E}-06$	$1.66\text{E}-06$	$1.66\text{E}-06$	$1.66\text{E}-06$	$1.66\text{E}-06$	$1.66\text{E}-06$	$2.01\text{E}-06$
MEAT							
ADULT	$1.38\text{E}-04$	$1.37\text{E}-04$	$1.12\text{E}-06$	$1.38\text{E}-04$	$1.39\text{E}-04$	$5.44\text{E}-04$	$1.37\text{E}-04$
TEEN	$8.23\text{E}-05$	$8.19\text{E}-05$	$8.87\text{E}-07$	$8.27\text{E}-05$	$8.34\text{E}-05$	$3.77\text{E}-04$	$8.17\text{E}-05$
CHILD	$9.95\text{E}-05$	$9.88\text{E}-05$	$1.55\text{E}-06$	$1.00\text{E}-04$	$1.01\text{E}-04$	$5.44\text{E}-04$	$9.87\text{E}-05$

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 5 VEG  
 AT 0.85 MILES SW

BETA AIR DOSE = 2.06E-02 MILLRADS  
 GAMMA AIR DOSE = 7.21E-03 MILLRADS

TABLE VII-A-21

PATHWAY /	T. BODY	GI TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	4.24E-03	4.24E-03	4.24E-03	4.24E-03	4.24E-03	4.24E-03	4.44E-03	1.18E-02
GROUND	9.58E-07	9.58E-07	9.58E-07	9.58E-07	9.58E-07	9.58E-07	9.58E-07	1.16E-06
VEGET								
ADULT	5.39E-04	5.35E-04	1.44E-05	5.39E-04	5.43E-04	2.48E-03	5.33E-04	5.33E-04
TEEN	6.17E-04	6.12E-04	1.66E-05	6.16E-04	6.20E-04	2.22E-03	6.10E-04	6.10E-04
CHILD	9.55E-04	9.46E-04	2.84E-05	9.53E-04	9.58E-04	3.39E-03	9.45E-04	9.45E-04

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 6 RES, VEG  
 AT 1.04 MILES WSW

BETA AIR DOSE = 9.63E-03 MILLRADS  
 GAMMA AIR DOSE = 3.38E-03 MILLRADS

TABLE VII-A-22

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.98E-03	1.98E-03	1.98E-03	1.98E-03	1.98E-03	1.98E-03	2.08E-03	5.54E-03
GROUND	4.35E-07	4.35E-07	4.35E-07	4.35E-07	4.35E-07	4.35E-07	4.35E-07	5.28E-07
VEGET								
ADULT	2.52E-04	2.50E-04	6.53E-06	2.52E-04	2.54E-04	1.13E-03	2.50E-04	2.50E-04
TEEN	2.89E-04	2.86E-04	7.55E-06	2.88E-04	2.90E-04	1.02E-03	2.86E-04	2.86E-04
CHILD	4.47E-04	4.43E-04	1.29E-05	4.46E-04	4.48E-04	1.55E-03	4.43E-04	4.43E-04
INHAL								
ADULT	1.39E-04	1.38E-04	5.12E-07	1.39E-04	1.39E-04	2.91E-04	1.38E-04	1.38E-04
TEEN	1.40E-04	1.39E-04	6.70E-07	1.40E-04	1.40E-04	3.29E-04	1.39E-04	1.39E-04
CHILD	1.23E-04	1.23E-04	8.37E-07	1.24E-04	1.24E-04	3.38E-04	1.23E-04	1.23E-04
INFANT	7.10E-05	7.08E-05	5.99E-07	7.14E-05	7.15E-05	2.67E-04	7.08E-05	7.08E-05



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 7 BEEF  
 AT 3.48 MILES WSW

BETA AIR DOSE =  $6.94\text{E-}04$  MILLRADS  
 GAMMA AIR DOSE =  $2.40\text{E-}04$  MILLRADS

TABLE VII-A-23

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	$1.41\text{E-}04$	$1.41\text{E-}04$	$1.41\text{E-}04$	$1.41\text{E-}04$	$1.41\text{E-}04$	$1.41\text{E-}04$	$1.48\text{E-}04$	$3.96\text{E-}04$
GROUND	$2.08\text{E-}08$	$2.08\text{E-}08$	$2.08\text{E-}08$	$2.08\text{E-}08$	$2.08\text{E-}08$	$2.08\text{E-}08$	$2.08\text{E-}08$	$2.53\text{E-}08$
MEAT								
ADULT	$2.62\text{E-}06$	$2.61\text{E-}06$	$1.41\text{E-}08$	$2.62\text{E-}06$	$2.63\text{E-}06$	$7.73\text{E-}06$	$2.61\text{E-}06$	$2.11\text{E-}06$
TEEN	$1.56\text{E-}06$	$1.56\text{E-}06$	$1.12\text{E-}08$	$1.57\text{E-}06$	$1.58\text{E-}06$	$5.28\text{E-}06$	$1.55\text{E-}06$	$1.55\text{E-}06$
CHILD	$1.89\text{E-}06$	$1.88\text{E-}06$	$1.95\text{E-}08$	$1.89\text{E-}06$	$1.91\text{E-}06$	$7.48\text{E-}06$	$1.88\text{E-}06$	$1.88\text{E-}06$



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 8 RES. VEG  
 AT 1.20 MILES W

BETA AIR DOSE = 1.26E-02 MILLRADS  
 GAMMA AIR DOSE = 4.42E-03 MILLRADS

TABLE VII-A-24

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.60E-03	2.60E-03	2.60E-03	2.60E-03	2.60E-03	2.60E-03	2.72E-03	7.26E-03
GROUND	5.38E-07	5.38E-07	5.38E-07	5.38E-07	5.38E-07	5.38E-07	5.38E-07	6.53E-07
VEGET								
ADULT	3.30E-04	3.28E-04	8.08E-06	3.30E-04	3.32E-04	1.42E-03	3.27E-04	3.27E-04
TEEN	3.77E-04	3.75E-04	9.35E-06	3.77E-04	3.79E-04	1.28E-03	3.74E-04	3.74E-04
CHILD	5.85E-04	5.80E-04	1.59E-05	5.84E-04	5.86E-04	1.95E-03	5.79E-04	5.79E-04
INHAL								
ADULT	1.81E-04	1.81E-04	6.62E-07	1.82E-04	1.82E-04	3.79E-04	1.81E-04	1.81E-04
TEEN	1.83E-04	1.82E-04	8.66E-07	1.83E-04	1.84E-04	4.28E-04	1.82E-04	1.82E-04
CHILD	1.62E-04	1.61E-04	1.08E-06	1.62E-04	1.63E-04	4.40E-04	1.61E-04	1.61E-04
INFANT	9.30E-05	9.27E-05	7.76E-07	9.35E-05	9.36E-05	3.48E-04	9.26E-05	9.26E-05

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 9 BEEF  
 AT 2.09 MILES W

NEUTRON AIR DOSE = 3.70E-03 MILLRADS  
 GAMMA AIR DOSE = 1.29E-03 MILLRADS

TABLE VII-A-25

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	7.56E-04	7.56E-04	7.56E-04	7.56E-04	7.56E-04	7.56E-04	7.93E-04	2.12E-03
GROUND	1.25E-07	1.25E-07	1.25E-07	1.25E-07	1.25E-07	1.25E-07	1.25E-07	1.52E-07
MEAT								
ADULT	1.39E-05	1.39E-05	8.48E-08	1.40E-05	1.40E-05	4.46E-05	1.39E-05	1.39E-05
TEEN	8.31E-06	1.28E-06	6.69E-08	8.34E-06	8.40E-06	3.05E-05	9.27E-06	8.27E-06
CHILD	1.00E-05	1.00E-05	1.17E-07	1.01E-05	1.02E-05	4.36E-05	9.99E-06	9.99E-06

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCAL # 10 RES. VEG  
 AT 2.00 MILES WNW

BETA AIR DOSE = 0.65E-03 MILLRADS  
 GAMMA AIR DOSE = 2.31E-03 MILLRADS

TABLE VII-A-26

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.35E-03	1.35E-03	1.35E-03	1.35E-03	1.35E-03	1.35E-03	1.42E-03	3.80E-03
GROUND	1.92E-07	1.92E-07	1.92E-07	1.92E-07	1.92E-07	1.92E-07	1.92E-07	2.34E-07
VEGET								
ADULT	1.75E-04	.74E-04	2.90E-06	1.75E-04	1.76E-04	5.65E-04	1.74E-04	1.74E-04
TEEN	2.00E-04	1.99E-04	3.36E-06	2.00E-04	2.01E-04	5.24E-04	1.99E-04	1.99E-04
CHILD	3.10E-04	3.08E-04	5.73E-06	3.09E-04	3.10E-04	8.01E-04	3.08E-04	3.08E-04
INHAL								
ADULT	9.63E-05	9.63E-05	3.43E-07	9.65E-05	9.68E-05	1.99E-04	9.62E-05	9.62E-05
TEEN	9.70E-05	9.69E-05	4.49E-07	9.72E-05	9.76E-05	2.25E-04	9.68E-05	9.68E-05
CHILD	8.58E-05	8.56E-05	5.62E-07	8.60E-05	8.63E-05	2.31E-04	8.56E-05	8.56E-05
INFANT	4.94E-05	4.92E-05	4.03E-07	4.96E-05	4.97E-05	1.82E-04	4.92E-05	4.92E-05



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 11 PORK  
 AT 2.76 MILES WNW

BETA AIR DOSE = 3.38E-03 MILLRADS  
 GAMMA AIR DOSE = 1.17E-03 MILLRADS

TABLE VII-A-27

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.85E-04	6.85E-04	6.85E-04	6.85E-04	6.85E-04	6.85E-04	7.18E-04	1.93E-03
GROUND	8.90E-08	8.90E-08	8.90E-08	8.90E-08	8.90E-08	8.90E-08	8.90E-08	1.08E-07
MEAT								
ADULT	1.28E-05	1.27E-05	6.05E-08	1.28E-05	1.28E-05	3.46E-05	1.27E-05	1.27E-05
TEEN	7.62E-06	7.60E-06	4.78E-08	7.64E-06	7.68E-06	2.35E-05	7.59E-06	7.59E-06
CHILD	9.21E-06	9.17E-06	8.36E-08	9.24E-06	9.28E-06	3.31E-05	9.16E-06	9.16E-06

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCAT. # 12 RES. VEG  
 AT 2.45 MILES NW

BETA AIR DOSE = 5.25E-03 MILLRADS  
 GAMMA AIR DOSE = 1.81E-03 MILLRADS

TABLE VII-A-28

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.06E-03	1.06E-03	1.06E-03	1.06E-03	1.06E-03	1.06E-03	1.12E-03	2.99E-03
GROUND	1.81E-07	1.81E-07	1.81E-07	1.81E-07	1.81E-07	1.81E-07	1.81E-07	2.20E-07
VEGET								
ADULT	1.38E-04	1.37E-04	2.73E-06	1.38E-04	1.39E-04	5.05E-04	1.37E-04	1.37E-04
TEEN	1.58E-04	1.57E-04	3.16E-06	1.58E-04	1.59E-04	4.62E-04	1.57E-04	1.57E-04
CHILD	2.45E-04	2.43E-04	5.39E-06	2.44E-04	2.45E-04	7.06E-04	2.43E-04	2.43E-04
INHAL								
ADULT	7.61E-05	7.60E-05	2.67E-07	7.62E-05	7.64E-05	1.56E-04	7.59E-05	7.59E-05
TEEN	7.66E-05	7.65E-05	3.49E-07	7.68E-05	7.70E-05	1.76E-04	7.64E-05	7.64E-05
CHILD	6.78E-05	6.76E-05	4.37E-07	6.79E-05	6.82E-05	1.81E-04	6.76E-05	6.76E-05
INFANT	3.90E-05	3.89E-05	3.14E-07	3.92E-05	3.92E-05	1.42E-04	3.89E-05	3.88E-05

FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 13 PORK, BEEF, COW  
 AT 3.49 MILES NW

BETA AIR DOSE = 2.59E-03 MILLRADS  
 GAMMA AIR DOSE = 8.90E-04 MILLRADS

TABLE VII-A-29

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	5.21E-04	5.21E-04	5.21E-04	5.21E-04	5.21E-04	5.21E-04	5.47E-04	1.47E-03
GROUND	7.96E-08	7.96E-08	7.96E-08	7.96E-08	7.96E-08	7.96E-08	7.96E-08	9.67E-08
MEAT								
ADULT	9.79E-06	9.77E-06	5.43E-08	9.81E-06	9.85E-06	2.94E-05	9.75E-06	9.75E-06
TEEN	5.84E-06	5.83E-06	4.28E-08	5.87E-06	5.90E-06	2.00E-05	5.82E-06	5.82E-06
CHILD	7.07E-06	7.03E-06	7.49E-08	7.09E-06	7.13E-06	2.85E-05	7.03E-06	7.03E-06
COW MILK								
ADULT	2.34E-05	2.31E-05	6.17E-07	2.37E-05	2.43E-05	2.66E-04	2.29E-05	2.29E-05
TEEN	3.06E-05	3.01E-05	1.11E-06	3.13E-05	3.24E-05	4.60E-04	2.98E-05	2.98E-05
CHILD	4.86E-05	4.74E-05	2.65E-06	4.97E-05	5.14E-05	8.98E-04	4.71E-05	4.71E-05
INFANT	7.43E-05	7.17E-05	5.44E-06	7.78E-05	7.89E-05	2.14E-03	7.15E-05	7.15E-05



FORT CALHOUN RECEPTORS IN ALL SECTORS 07-20-90  
 SPECIAL LOCATION # 14 RES. VEG  
 AT 2.05 MILES NNW

BETA AIR DOSE = 5.74E-03 MILLRADS  
 GAMMA AIR DOSE = 2.00E-03 MILLRADS

TABLE VII-A-30

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.17E-03	1.17E-03	1.17E-03	1.17E-03	1.17E-03	1.17E-03	1.25E-03	3.29E-03
GROUND	3.54E-07	3.54E-07	3.54E-07	3.54E-07	3.54E-07	3.54E-07	3.54E-07	4.30E-07
VEGET								
ADULT	1.51E-04	1.50E-04	5.33E-06	1.52E-04	1.53E-04	8.69E-04	1.49E-04	1.49E-04
TEEN	1.73E-04	1.71E-04	6.17E-06	1.73E-04	1.74E-04	7.68E-04	1.71E-04	1.71E-04
CHILD	2.68E-04	2.65E-04	1.05E-05	2.67E-04	2.69E-04	1.17E-03	2.65E-04	2.65E-04
INHAL								
ADULT	8.29E-05	8.28E-05	2.95E-07	8.30E-05	8.32E-05	1.71E-04	8.27E-05	8.27E-05
TEEN	8.34E-05	8.33E-05	3.87E-07	8.36E-05	8.39E-05	1.93E-04	8.32E-05	8.32E-05
CHILD	7.38E-05	7.36E-05	4.84E-07	7.40E-05	7.43E-05	1.99E-04	7.36E-05	7.36E-05
INFANT	4.25E-05	4.23E-05	3.47E-07	4.27E-05	4.28E-05	1.57E-04	4.23E-05	4.23E-05

TABLE VII-B-1

\* FORT CALHOUN 1      DOSE CONTRIBUTIONS FROM GASEOUS EFFLUENTS  
UNRESTRICTED AREA BOUNDARY  
REQUIRED BY TECHNICAL SPECIFICATION 5.9.4.b.

SEMIANNUAL FOR JAN TO    JUN 90

MAXIMUM SITE BOUNDARY GAMMA AIR DOSE =    1.51E-02 MILLIRAD  
MAXIMUM SITE BOUNDARY BETA AIR DOSE =    4.34E-02 MILLIRAD

\*Doses calculated using annual avg. X/Q according to the ODCM  
for most limiting Sector H. For comparison purposes with  
quarterly cumulative dose contributions (see Section I), pages  
I-3 and I-4 of this report.

TABLE VII-C-1

FORT CALHOUN SEMIANNUAL 01/90-06/90 TRI-EX TOWER DATA 07-25-90  
ALARA INTEGRATED POPULATION DOSE SUMMARY (MANREM)

PATHWAY	T. BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.23E-02 78.88%	1.23E-02 78.89%	1.23E-02 99.49%	1.23E-02 78.79%	1.23E-02 78.63%	1.23E-02 39.48%	1.32E-02 80.14%	4.24E-02 92.85%
GROUND	1.89E-06 0.01%	1.89E-06 0.01%	1.89E-06 0.02%	1.89E-06 0.01%	1.89E-06 0.01%	1.89E-06 0.01%	1.89E-06 0.01%	2.29E-06 0.01%
INHAL	1.26E-03 8.09%	1.26E-03 8.09%	4.43E-06 0.04%	1.27E-03 8.09%	1.27E-03 8.10%	2.59E-03 8.29%	1.26E-03 7.66%	1.26E-03 2.76%
VEGET	1.37E-03 8.78%	1.36E-03 8.70%	4.21E-05 0.34%	1.38E-03 8.82%	1.40E-03 8.93%	1.04E-02 33.40%	1.35E-03 8.21%	1.35E-03 2.96%
COW MILK	3.56E-04 2.28%	3.51E-04 2.25%	1.22E-05 0.10%	3.62E-04 2.32%	3.72E-04 2.37%	4.86E-03 15.57%	3.48E-04 2.12%	3.48E-04 0.76%
MEAT	3.06E-04 1.96%	3.05E-04 1.96%	2.10E-06 0.02%	3.07E-04 1.96%	3.09E-04 1.97%	1.02E-03 3.26%	3.05E-04 1.85%	3.05E-04 0.67%
TOTAL*	1.56E-02	1.56E-02	1.24E-02	1.56E-02	1.57E-02	3.12E-02	1.65E-02	4.57E-02



TABLE VII-D-1

T. CALHOUN SEMI-ANNUAL RELEASES FOR JAN 1990 TO JUN 1990 07-25-90 RETS  
 DISCHARGE=8.02E+02 CFS  
 50-MILE POPULATION=7.35E+05 FRACTION --- ADULT=0.66  
 TEENAGER=0.14  
 CHILD=0.20

FRESHWATER SITE

\* \* \* ADULT DOSE FACTORS \* \* \*

NUCLIDE	CURIE/.5YR	INGESTION DOSE FACTORS (MREM/PCI INTAKE)										SHORELINE (MREM/HR)/(PCI/M**2)		
		BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-ILLI	SKIN	TOTAL BODY	RECON			
38SR 89	1.09E-03	3.09E-04	0.00E+00	8.85E-06	0.00E+00	0.00E+00	0.00E+00	4.94E-05	6.50E-13	5.60E-13	1.00E+00			
38SR 90	1.59E-04	7.61E-03	0.00E+00	1.86E-03	0.00E+00	0.00E+00	0.00E+00	1.02E-04	0.00E+00	0.00E+00	1.00E+00			
27CO 57	9.09E-05	0.00E+00	1.75E-07	2.91E-07	0.00E+00	0.00E+00	0.00E+00	4.44E-06	1.00E-09	9.10E-10	1.00E+00			
43TC 99	2.48E-05	1.26E-07	1.86E-07	5.00E-08	0.00E+00	2.34E-06	1.58E-08	6.08E-06	0.00E+00	0.00E+00	1.00E+00			
24CR 51	3.93E-03	0.00E+00	0.00E+00	2.66E-09	1.59E-09	5.87E-10	3.53E-09	6.69E-07	2.60E-10	2.20E-10	1.00E+00			
53I 131	5.03E-03	4.16E-06	5.96E-06	3.41E-06	1.95E-03	1.02E-05	0.00E+00	1.57E-06	3.40E-09	2.80E-09	1.00E+00			
44RU 103	2.23E-04	1.85E-07	0.00E+00	7.98E-08	0.00E+00	7.07E-07	0.00E+00	2.10E-05	4.20E-09	3.60E-09	1.00E+00			
55CS 137	1.16E-01	7.98E-05	1.09E-04	7.15E-05	0.00E+00	3.71E-05	1.23E-05	2.10E-06	4.90E-09	4.20E-09	1.00E+00			
40ZR 95	1.59E-03	3.04E-08	9.76E-09	6.61E-09	0.00E+00	1.54E-08	0.00E+00	3.03E-05	5.80E-09	5.00E-09	1.00E+00			
41NB 95	3.77E-03	6.23E-09	3.46E-09	1.36E-09	0.00E+00	3.43E-09	0.00E+00	2.10E-05	6.00E-09	5.10E-09	1.00E+00			
55CS 134	2.34E-02	6.22E-05	1.48E-04	1.21E-04	0.00E+00	4.80E-05	1.59E-05	2.59E-06	1.40E-08	1.20E-08	1.00E+00			
27CO 58	1.57E-01	0.00E+00	7.46E-07	1.67E-06	0.00E+00	0.00E+00	0.00E+00	1.71E-05	8.20E-09	7.00E-09	1.00E+00			
25MN 54	3.64E-04	0.00E+00	4.57E-06	8.73E-07	0.00E+00	1.36E-06	0.00E+00	1.40E-05	6.80E-09	5.80E-09	1.00E+00			
30ZN 65	2.83E-05	4.85E-06	1.54E-05	6.97E-06	0.00E+00	1.03E-05	0.00E+00	9.70E-06	4.60E-09	4.00E-09	1.00E+00			
27CO 60	1.20E-02	0.00E+00	2.15E-06	4.72E-06	0.00E+00	0.00E+00	0.00E+00	4.02E-05	2.00E-08	1.70E-08	1.00E+00			
57LA 140	1.46E-03	2.50E-09	1.26E-09	3.34E-10	0.00E+00	0.00E+00	0.00E+00	9.25E-05	1.70E-08	1.50E-08	1.00E+00			
51SB 124	4.32E-03	2.81E-06	5.30E-08	1.11E-06	6.79E-09	0.00E+00	2.18E-06	7.95E-05	1.50E-08	1.30E-08	1.00E+00			
51SB 125	6.67E-02	2.23E-06	2.40E-08	4.48E-07	1.98E-09	0.00E+00	2.33E-04	1.97E-05	3.50E-09	3.10E-09	1.00E+00			
47AG 110M	5.20E-03	1.60E-07	1.48E-07	8.80E-08	0.00E+00	2.91E-07	0.00E+00	6.04E-05	2.10E-08	1.80E-08	1.00E+00			
34SE 75	2.60E-04	0.00E+00	2.63E-06	4.40E-07	0.00E+00	4.56E-06	0.00E+00	5.38E-07	0.00E+00	0.00E+00	1.00E+00			
51SB 126	1.31E-04	1.15E-06	2.34E-08	4.15E-07	7.05E-09	0.00E+00	7.05E-07	9.40E-05	1.00E-08	8.90E-09	1.00E+00			
1H 3	5.39E+01	0.00E+00	1.34E-07	1.34E-07	1.34E-07	1.34E-07	1.34E-07	1.34E-07	0.00E+00	0.00E+00	1.00E+00			

TABLE VII-D-1  
(Cont)

NUCLIDE	CURIE/ SVR	INGESTION DOSE FACTORS					SHORELINE		
		BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI	
									(MBREM/HR)/(PCI/80*2)
TEENAGER DOSE FACTORS									
(MBREM/HR)/(PCI/80*2)									
38SR	89	1.09E-03	4.60E-04	0.00E+00	1.32E-05	0.00E+00	0.00E+00	0.00E+00	4.99E-05
38SR	90	1.59E-04	1.04E-02	0.00E+00	2.57E-03	0.00E+00	0.00E+00	0.00E+00	2.20E-04
53I	131	5.03E-03	5.57E-06	7.87E-01	4.69E-08	2.27E-03	1.02E-05	0.00E+00	1.9E-06
48RU	103	2.23E-04	2.37E-07	0.00E+00	1.06E-07	0.00E+00	0.00E+00	0.00E+00	1.85E-01
55CS	137	1.16E-01	1.44E-04	5.05E-05	0.00E+00	3.71E-05	1.91E-05	1.92E-06	2.68E-05
40ZR	95	1.59E-03	3.72E-08	8.66E-09	0.00E+00	1.54E-08	0.00E+00	0.00E+00	2.68E-05
41NB	95	3.77E-03	7.24E-09	4.36E-09	2.46E-09	0.00E+00	3.43E-09	0.00E+00	1.78E-05
55CS	134	2.34E-02	8.05E-05	1.94E-04	9.06E-05	0.00E+00	4.80E-05	2.35E-05	2.24E-06
27CO	58	1.57E-01	0.00E+00	9.92E-07	2.26E-06	0.00E+00	0.00E+00	0.00E+00	1.34E-05
27CO	60	1.20E-02	0.00E+00	2.76E-06	6.30E-06	0.00E+00	0.00E+00	0.00E+00	3.31E-05
57LA	140	1.46E-03	3.48E-09	1.72E-09	4.55E-10	0.00E+00	0.00E+00	0.00E+00	9.48E-05
47AG	110M	5.20E-03	2.05E-07	1.94E-07	1.18E-07	0.00E+00	2.91E-07	0.00E+00	5.45E-05
TH	3	5.39E+01	0.00E+00	1.06E-07	1.06E-07	1.34E-07	1.06E-07	1.06E-07	1.06E-07



TABLE VII-D-2

\* \* \* AS LOW AS REASONABLY ACHIEVABLE \* \* \*

## A D U L T   D O S E S

	DOSE (MREM PER .5YR INTAKE)							
PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		8.60E-02	1.29E-01	8.92E-02	5.68E-04	4.35E-02	1.45E-02	1.24E-02
DRINKING		4.10E-04	7.76E-04	6.28E-04	5.42E-04	4.19E-04	8.12E-04	4.18E-04
SHORELINE	1.27E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04	1.09E-04
SWIMMING	0.00E+00	1.45E-06	1.45E-06	1.45E-06	1.45E-06	1.45E-06	1.45E-06	1.45E-06
BOATING	0.00E+00	7.25E-07	7.25E-07	7.25E-07	7.25E-07	7.25E-07	7.25E-07	7.25E-07
TOTAL	1.27E-04	8.65E-02	1.30E-01	9.00E-02	1.22E-03	4.40E-02	1.54E-02	1.29E-02

	USAGE (KG/YR,HR/YR)	DILUTION	TIME(HR)	SHOREWIDTH FACTOR=0.2
FISH	21.0	7.3	24.00	
DRINKING	730.0	30.8	18.60	
SHORELINE	12.0	7.3	0.00	
SWIMMING	12.0	7.3	0.00	
BOATING	12.0	7.3	0.00	

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		CS 137 86%	CS 137 78%	CS 137 74%	I 131 95%	CS 137 79%	CS 137 78%	CS 137 15%
		CS 134 13%	CS 134 21%	CS 134 25%	H 3 4%	CS 134 20%	CS 134 20%	NB 95 75%
								CS 134 3%
								CO 58 3%
DRINKING		SR 89 2%	CS 137 53%	SR 90 1%	I 131 55%	CS 137 33%	CS 137 5%	CS 137 1%
		SK 90 9%	CS 134 14%	CS 137 43%	H 3 44%	CS 134 8%	CS 134 1%	CO 58 18%
		CS 137 74%	H 3 30%	CS 134 14%		H 3 56%	SB 125 63%	CO 60 3%
		CS 134 11%		CO 58 1%			H 3 29%	SB 124 2%
		SB 125 1%		H 3 37%				SB 125 10%
								AG 110M 2%
SHORELINE								H 3 57%
	CS 137 64%	CS 137 64%						
	CS 134 8%	CS 134 8%						
	CO 58 3%	CO 58 3%						
	CO 60 14%	CO 60 13%						
SWIMMING	SB 125 8%	SB 125 8%						
		CS 137 18%						
		CS 134 10%						
		CO 58 44%						
		CO 60 8%						
		SB 124 2%						
		SB 125 8%						
		AG 110M 4%						



TABLE VII-D-3

\* \* \* \* AS LOW AS REASONABLY ACHIEVABLE \* \* \*

## TEENAGER DOSES

DOSE (MREM PER .5VR INTAKE)

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH								
DRINKING		8.74E-02	1.30E-01	4.88E-02	4.96E-04	3.31E-02	1.69E-02	8.14E-03
SHORELINE		3.84E-04	6.27E-04	3.37E-04	3.79E-04	2.93E-04	5.54E-04	2.48E-04
SWIMMING	7.08E-04	6.08E-04	6.08E-04	6.08E-04	6.08E-04	6.08E-04	6.08E-04	6.08E-04
BOATING	0.00E+00	8.10E-06	8.10E-06	8.10E-06	8.10E-06	8.10E-06	8.10E-06	8.10E-06
TOTAL	7.08E-04	4.05E-06	4.05E-06	4.05E-06	4.05E-06	4.05E-06	4.05E-06	4.05E-06
		8.84E-02	1.31E-01	4.98E-02	1.49E-03	3.41E-02	1.81E-02	9.01E-03

SHOREWIDTH FACTOR=0.2

TIME(HR)

DILUTION

USAGE (KG/VR.HR/VR)

FISH

DRINKING  
SHORELINE  
SWIMMING  
BOATING

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH								
	CS 137 86%	CS 137 78%	CS 137 73%	CS 137 96%	CS 137 79%	CS 137 79%	CS 137 79%	CS 137 16%
	CS 134 13%	CS 134 21%	CS 134 26%	H 3 3%	CS 134 20%	CS 134 19%	CS 134 19%	NB 95 74%
								CS 134 3%
								CO 58 3%
DRINKING								
	SR 89 2%	CS 137 61%	SR 90 2%	I 131 65%	CS 137 33%	CS 137 9%	CS 137 9%	CS 137 2%
	SR 90 9%	CS 134 16%	CS 137 40%	H 3 34%	CS 134 8%	CS 134 7%	CS 134 7%	CO 58 19%
	CS 137 74%	H 3 21%	CS 134 14%		H 3 56%	SB 125 64%	CO 60 3%	CO 60 3%
	CS 134 11%		CO 58 2%			SB 124 3%	SB 124 3%	SB 124 3%
			H 3 39%			H 23%	AG 110M 2%	AG 110M 2%
							H 3 53%	H 3 53%
SHORELINE								
	CS 137 64%	CS 137 64%						
	CS 134 8%	CS 134 8%						
	CO 58 3%	CO 58 3%						
	CO 60 14%	CO 60 13%						
	SB 125 8%	SB 125 8%						
SWIMMING								
	CS 137 18%	CS 137 18%						
	CS 134 10%	CS 134 10%						
	CO 58 44%	CO 58 44%						
	CO 60 8%	CO 60 8%						
	SB 124 2%	SB 124 2%						
	SB 125 8%	SB 125 8%						
	AG 110M 4%	AG 110M 4%						

TABLE VII-D-4

\* \* \* AS LOW AS REASONABLY ACHIEVABLE \* \* \*

## CHILD DOSES

DOSE (MREM PER .5YR INTAKE)

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		1.09E-01	1.15E-01	1.88E-02	5.09E-04	1.43E-02	1.34E-02	2.96E-03
DRINKING		1.08E-03	1.27E-03	4.60E-04	8.43E-04	2.93E-04	7.29E-04	3.57E-04
SHORELINE	1.48E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04	1.27E-04
SWIMMING	0.00E+00	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06
BOATING	0.00E+00	8.46E-07	8.46E-07	8.46E-07	8.46E-07	8.46E-07	8.46E-07	8.46E-07
TOTAL	1.48E-04	1.10E-01	1.17E-01	1.94E-02	1.48E-03	1.47E-02	1.43E-02	3.44E-03

USAGE (KG/YR,HR/YR)

DILUTION

TIME(HR)

SHOREWIDTH FACTOR=0.2

FISH	6.9	7.3	24.00
DRINKING	510.0	30.8	18.60
SHORELINE	14.0	7.3	0.00
SWIMMING	14.0	7.3	0.00
BOATING	14.0	7.3	0.00

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		CS 137 87% CS 134 12%	CS 137 79% CS 134 20%	CS 137 73% CS 134 26%	I 131 97% H 3 2%	CS 137 79% CS 134 20%	CS 137 80% CS 134 19%	CS 137 18% NB 95 71% CS 134 4% CO 58 3%
DRINKING		SR 89 3% SR 90 5% CS 137 78% CS 134 11%	CS 137 63% CS 134 15% H 3 19%	SR 90 3% CS 137 26% CS 134 9% CO 58 4% H 3 54%	I 131 70% H 3 29%	CS 137 33% CS 134 8% H 3 56%	CS 137 12% CS 134 3% SB 125 49% H 3 34%	CS 137 1% CO 58 11% CO 60 2% SB 124 2% SB 125 8% AG 110M 1% H 3 70%
SHORELINE	CS 137 64% CS 134 8% CO 58 3% CO 60 14% SB 125 8%	CS 137 64% CS 134 8% CO 58 3% CO 60 13% SB 125 8%						
SWIMMING		CS 137 18% CS 134 10% CO 58 44% CO 60 8% SB 124 2% SB 125 8% AG 110M 4%						

TABLE VII-D-5

* * * AS LOW AS REASONABLY ACHIEVABLE * * *											
I N F A N T D O S E S											
DOSE (MREM PER .5YR INTAKE)											
PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI			
FISH		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
DRINKING		1.40E-03	1.81E-03	3.89E-04	1.17E-03	1.90E-04	6.65E-04	3.11E-04			
SHORELINE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
TOTAL	0.00E+00	1.40E-03	1.81E-03	3.89E-04	1.17E-03	1.90E-04	6.65E-04	3.11E-04			
SHOREWIDTH FACTOR=0.2											
PATHWAY	USAGE (KG/YR.HR/YR)	DILUTION	TIME(HR)								
FISH	0.0	7.3	24.00								
DRINKING	330.0	30.8	18.60								
* * * ISOTOPE CONTRIBUTION * * *											
PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI			
DRINKING											
	SR 89	3%	CS 137 69%	SR 90 3%	I 131 78%	CS 137 33%	CS 137 22%	CS 137 1%			
	SR 90	4%	CS 134 15%	CS 137 18%	H 3 21%	CS 134 8%	CS 134 4%	CO 58 7%			
	CS 137	80%	H 3 13%	CS 134 6%	H 3 56%	SB 125 34%	SB 125 34%	CO 60 1%			
	CS 134	1%		CO 58 5%		H 3 37%	H 3 37%	SB 124 1%			
				CO 60 1%				SB 125 6%			
				H 3 63%				H 3 79%			



1

IMAGE EVALUATION  
TEST TARGET (MT-3)

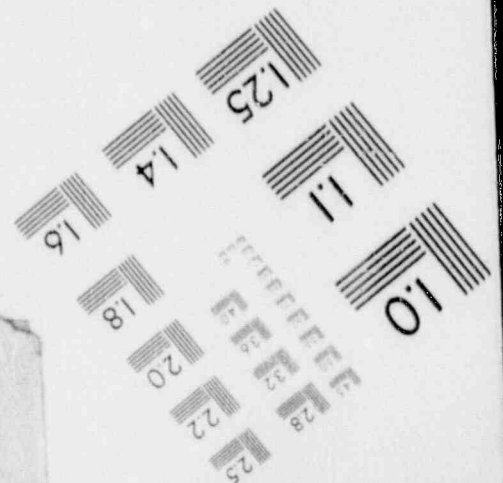
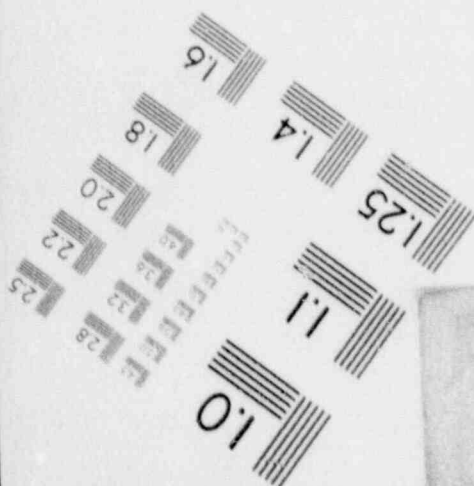
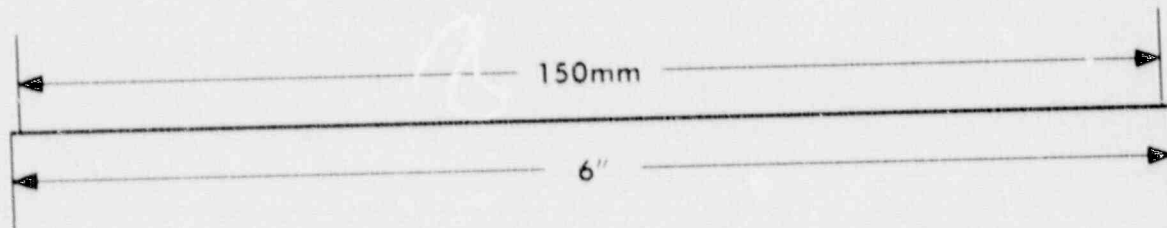
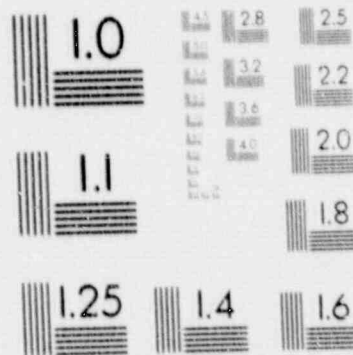
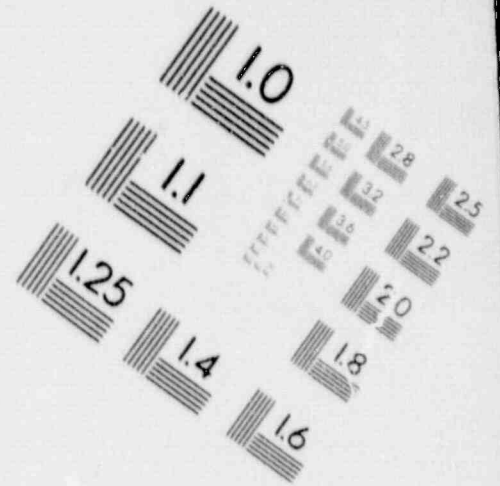
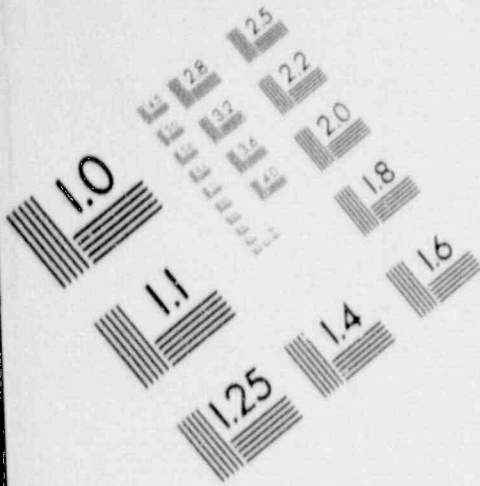


TABLE VII-D-6

LOCATION IS SITE DISCHG.

\* \* \* SELECTED LOCATION \* \* \*

## A D U L T D O S E S

DOSE (MREM PER SVR INTAKE)

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		6.28E-01	9.42E-01	6.51E-01	4.15E-03	3.18E-01	1.06E-01	9.07E-02
DRINKING		1.28E-02	2.39E-02	1.93E-02	1.69E-02	1.29E-02	2.50E-02	1.29E-02
SHORELINE	9.26E-04	7.95E-04	7.95E-04	7.95E-04	7.95E-04	7.95E-04	7.95E-04	7.95E-04
SWIMMING	0.00E+00	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05	1.06E-05
BOATING	0.00E+00	5.29E-06	5.29E-06	5.29E-06	5.29E-06	5.29E-06	5.29E-06	5.29E-06
TOTAL	9.26E-04	6.41E-01	9.67E-01	6.72E-01	2.19E-02	3.31E-01	1.32E-01	1.04E-01

SHOREWIDTH FACTOR=0.2

USAGE (KG/YR, HR/YR)	DILUTION	TIME (HR)
FISH	1.0	24.00
DRINKING	1.0	12.00
SHORELINE	1.0	0.00
SWIMMING	1.0	0.00
BOATING	1.0	0.00

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		CS 137 86% CS 134 13%	CS 137 78% CS 134 21%	CS 137 74% CS 134 25%	I 131 95% H 3 4%	CS 137 79% CS 134 20%	CS 137 78% CS 134 20%	CS 137 15% H 95 75% CS 134 3% CO 58 3%
DRINKING		SR 89 2% SR 90 9% CS 137 74% SB 125 1%	CS 137 53% CS 134 14% H 3 30%	SR 90 1% CS 137 43% CS 134 14% CO 58 1% H 3 37%	I 131 56% H 3 43%	CS 137 33% CS 134 8% H 3 56%	CS 137 5% CS 134 1% SB 125 63% H 3 29%	CS 137 1% CO 58 18% CO 60 3% SB 124 2% SB 125 10% AG 110M 2% H 3 56%
SHORELINE	CS 137 64% CS 134 8% CO 58 3% CO 60 14% SB 125 8%	CS 137 64% CS 134 8% CO 58 3% CO 60 13% SB 125 8%						
Swimbe		CS 137 18% CS 134 10% CO 58 44% CO 60 9% SB 124 2% SB 125 8% AG 110M 4%						

# TABLE VII-D-7

• • • SELECTED LOCATION • • •

LOCATION IS SITE DISCHG.

## TEENAGER DOSES

	DOSE (MREM PER .5VR INTAKE)							
PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		6.38E-01	9.47E-01	3.56E-01	3.62E-03	2.42E-01	1.24E-01	5.95E-02
DRINKING		1.18E-02	1.93E-02	1.04E-02	1.18E-02	9.02E-03	1.71E-02	7.65E-03
SHORELINE	5.17E-03	1.44E-03	4.44E-03	4.44E-03	4.44E-03	4.44E-03	4.44E-03	4.44E-03
SWIMMING	0.00E+00	5.91E-05	5.91E-05	5.91E-05	5.91E-05	5.91E-05	5.91E-05	5.91E-05
BOATING	0.00E+00	2.96E-05	2.96E-05	2.96E-05	2.96E-05	2.96E-05	2.96E-05	2.96E-05
TOTAL	5.17E-03	6.55E-01	9.70E-01	3.71E-01	2.00E-02	2.55E-01	1.45E-01	7.16E-02

	USAGE (KG/YR,HR/YR)	DILUTION	TIME(HR)	SHOREWIDTH FACTOR=0.2
FISH	16.0	1.0	24.00	
DRINKING	510.0	1.0	12.00	
SHORELINE	67.0	1.0	0.00	
SWIMMING	67.0	1.0	0.00	
BOATING	67.0	1.0	0.00	

• • • ISOTOPE CONTRIBUTION • • •

PATHWAY	SKIN		BONE		LIVER		TOTAL BODY		THYROID			KIDNEY		LUNG		GI-LLI		
FISH			CS 137	86%	CS 137	78%	CS 137	73%	I	131	96%	CS 137	79%	CS 137	79%	CS 137	16%	
			CS 134	13%	CS 134	21%	CS 134	26%	H	3	3%	CS 134	20%	CS 134	19%	NB 95	74%	
																CS 134	3%	
																CO 58	3%	
DRINKING			SR 89	2%	CS 137	61%	SR 90	2%	I	131	65%	CS 137	33%	CS 137	9%	CS 137	2%	
			SR 90	9%	CS 134	16%	CS 137	40%	H	3	34%	CS 134	8%	CS 134	2%	CO 58	19%	
			CS 137	74%	H 3	21%	CS 134	14%				H 3	56%	SB 125	64%	CO 60	3%	
			CS 134	11%			CO 58	2%						H 3	23%	LA 140	1%	
							H 3	39%								SB 124	3%	
																SB 125	12%	
																AG 110M	2%	
																H 3	53%	
SHORELINE	CS 137	64%	CS 137	64%														
	CS 134	8%	CS 134	8%														
	CO 58	3%	CO 58	3%														
	CO 60	14%	CO 60	13%														
	SB 125	8%	SB 125	8%														
SWIMMING			CS 137	18%														
			CS 134	10%														
			CO 58	44%														
			CO 60	8%														
			SB 124	2%														
			SB 125	8%														
			AG 110M	4%														



TABLE VII-D-8

\* \* \* SELECTED LOCATION \* \* \*

LOCATION IS SITE DISCHG.

## CHILD DOSES

	DOSE (MREM PER .5YR INTAKE)							
PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		7.97E-01	8.43E-01	1.37E-01	3.71E-03	1.04E-01	9.80E-02	2.16E-02
DRINKING		3.26E-02	3.92E-02	1.42E-02	2.64E-02	9.02E-03	2.24E-02	1.10E-02
SHORELINE	1.08E-03	9.27E-04	9.27E-04	9.27E-04	9.27E-04	9.27E-04	9.27E-04	9.27E-04
SWIMMING	0.00E+00	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05	1.24E-05
BOATING	0.00E+00	6.18E-06	6.18E-06	6.18E-06	6.18E-06	6.18E-06	6.18E-06	6.18E-06
TOTAL	1.08E-03	8.31E-01	8.83E-01	1.52E-01	3.11E-02	1.14E-01	1.21E-01	3.35E-02

	USAGE (KG/VR,HR/VR)	DILUTION	TIME(HR)	SHOREWIDTH FACTOR=0.2
FISH	6.9	1.0	24.00	
DRINKING	510.0	1.0	12.00	
SHORELINE	14.0	1.0	0.00	
SWIMMING	14.0	1.0	0.00	
BOATING	14.0	1.0	0.00	

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		CS 137 87% CS 134 12%	CS 137 79% CS 134 20%	CS 137 73% CS 134 26%	I 131 97% H 3 2%	CS 137 79% CS 134 20%	CS 137 80% CS 134 19%	CS 137 18% NB 95 71% CS 134 4% CO 58 3%
DRINKING		SR 89 3% SR 90 5% CS 137 78% CS 134 11%	CS 137 63% CS 134 15% H 3 19%	SR 90 3% CS 137 26% CS 134 9% CO 58 4% H 3 54%	I 131 70% H 3 29%	CS 137 33% CS 134 8% H 3 56%	CS 137 12% CS 134 3% SB 125 49% H 3 34%	CS 137 1% CO 58 11% CO 60 2% SB 124 2% SB 125 8% AG 110M 1% H 3 70%
SHORELINE	CS 137 64% CS 134 8% CO 58 3% CO 60 14% SB 125 8%	CS 137 64% CS 134 8% CO 58 3% CO 60 13% SB 125 8%						
SWIMMING		CS 137 18% CS 134 10% CO 58 44% CO 60 8% SB 124 2% SB 125 8% AG 110M 4%						

TABLE VII-D-9

• • • SELECTED LOCATION • • •

LOCATION IS SITE DISCHG.

# INFANT DOSES

PATHWAY	DOSE (MREM PER .5YR INTAKE)							
	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DRINKING		4.32E-02	5.58E-02	1.20E-02	3.67E-02	5.84E-03	2.05E-02	9.59E-03
SHORELINE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL	0.00E+00	4.32E-02	5.58E-02	1.20E-02	3.67E-02	5.84E-03	2.05E-02	9.59E-03

FISH	USAGE (KG/YR,HR/YR)	DILUTION	TIME(HR)	SHOREWIDTH FACTOR=0.2
	0.0	1.0	24.00	
DRINKING	330.0	1.0	12.00	

• • • ISOTOPE CONTRIBUTION • • •

PATHWAY	SKIN	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
DRINKING		SR 89 3%	CS 137 59%	SR 90 3%	I 131 79%	CS 137 33%	CS 137 22%	CS 137 1%
		SR 90 4%	CS 134 15%	CS 137 18%	H 3 20%	CS 134 8%	CS 134 4%	CO 58 7%
		CS 137 80%	H 3 13%	CS 134 6%		H 3 56%	SB 125 34%	CO 60 1%
		CS 134 11%		CO 58 5%			H 3 37%	SB 124 1%
				CO 60 1%				SB 125 6%
				H 3 63%				H 3 79%

TABLE VII-E-1

\* \* \* FISH CONSUMPTION POPULATION DOSES \* \* \*

MAN-REM

## SPORTFISH HARVEST

-----DOSE (MAN-REM)-----									
PATHWAY	AGE GROUP	USAGE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
FISH	ADULT	5.81E+04	2.34E-01	5.50E-01	2.42E-01	9.48E-04	1.18E-01	3.94E-02	3.08E-02
FISH	TEENAGER	9.29E+03	4.98E-02	7.39E-02	2.78E-02	1.72E-04	1.89E-02	9.65E-03	4.24E-03
FISH	CHILD	5.61E+03	8.72E-02	9.22E-02	1.50E-02	2.46E-04	1.14E-02	1.07E-02	2.17E-03
FISH	TOTAL	7.30E+04	3.71E-01	5.17E-01	2.85E-01	1.37E-03	1.48E-01	5.97E-02	3.72E-02

DILUTION 7.30E+00 CATCH 7.30E+04 TIME(HR)-INCLUDES FOOD PROCESSING TIME OF 1.68E+02 HR POPULATION=1.28E+04

AVERAGE INDIVIDUAL CONSUMPTION (KG/YR) ADULT=6.90E+00 TEEN=5.20E+00 CHILD=2.20E+00

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

AGE GROUP	BONE		LIVER		TOTAL BODY		THYROID		KIDNEY		LUNG		GI-LLI	
ADULT	CS 137	86%	CS 137	78%	CS 137	74%	I 131	92%	CS 137	79%	CS 137	78%	CS 137	17%
	CS 134	13%	CS 134	21%	CS 134	25%	H 3	7%	CS 134	20%	CS 134	20%	NB 95	73%
													CS 134	4%
													CO 58	3%
TEENAGER	CS 137	86%	CS 137	78%	CS 137	73%	I 131	94%	CS 137	79%	CS 137	79%	CS 137	18%
	CS 134	13%	CS 134	21%	CS 134	26%	H 3	5%	CS 134	20%	CS 134	19%	NB 95	72%
													CS 134	4%
													CO 58	4%
CHILD	CS 137	87%	CS 137	79%	CS 137	73%	I 131	95%	CS 137	79%	CS 137	80%	CS 137	20%
	CS 134	12%	CS 134	20%	CS 134	26%	H 3	4%	CS 134	20%	CS 134	19%	NB 95	69%
													CS 134	4%
													CO 58	3%



TABLE VII-E-2

\* \* \* FISH CONSUMPTION POPULATION DOSES \* \* \*

MAN-REM

\_\_\_\_\_  
COMMERCIAL HARVEST

-----DOSE (MAN-REM)-----										
PATHWAY	AGE GROUP	USAGE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI	
FISH	ADULT	3.35E+06	2.23E-02	3.35E-02	2.31E-02	7.15E-05	1.13E-02	3.76E-03	2.82E-03	
FISH	TEENAGER	5.35E+05	4.76E-03	7.05E-03	2.65E-03	1.29E-05	1.80E-03	9.21E-04	3.88E-04	
FISH	CHILD	3.23E+05	8.33E-03	8.80E-03	1.43E-03	1.84E-05	1.09E-03	1.02E-03	1.98E-04	
FISH	TOTAL	4.20E+06	3.54E-02	4.93E-02	2.72E-02	1.03E-04	1.42E-02	5.70E-03	3.40E-03	

DILUTION CATCH TIME(HR)-INCLUDES FOOD PROCESSING TIME OF 2.40E+02 HR POPULATION=7.35E+05  
7.30E+00 7.30E+04 2.41E+02

AVERAGE INDIVIDUAL CONSUMPTION (KG/YR) ADULT=6.90E+00 TEEN=5.20E+00 CHILD=2.20E+00

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

AGE GROUP	BONE		LIVER		TOTAL BODY		THYROID		KIDNEY		LUNG		GI-LLI	
ADULT	CS 137	86%	CS 137	78%	CS 137	74%	I 131	90%	CS 137	79%	CS 137	78%	CS 137	17%
	CS 134	13%	CS 134	21%	CS 134	25%	H 3	9%	CS 134	20%	CS 134	20%	NB 95	72%
													CS 134	4%
													CO 58	3%
TEENAGER	CS 137	86%	CS 137	78%	CS 137	73%	I 131	93%	CS 137	79%	CS 137	79%	CS 137	19%
	CS 134	13%	CS 134	21%	CS 134	26%	H 3	6%	CS 134	20%	CS 134	19%	NB 95	70%
													CS 134	4%
													CO 58	4%
CHILD	CS 137	87%	CS 137	79%	CS 137	73%	I 131	94%	CS 137	79%	CS 137	80%	CS 137	21%
	CS 134	12%	CS 134	20%	CS 134	26%	H 3	5%	CS 134	20%	CS 134	19%	NB 95	67%
													CS 134	4%
													CO 58	3%

\_\_\_\_\_  
NEPA DOSES

NOTE--TOTAL NEPA DOSE MUST INCLUDE SPORT CATCH. DOSES BELOW ARE FOR COMMERCIAL CATCH ONLY

-----DOSE (MAN-REM)-----										
PATHWAY	AGE GROUP	USAGE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI	
FISH	ADULT	5.81E+04	2.33E-01	3.50E-01	2.42E-01	7.48E-04	1.18E-01	3.93E-02	2.95E-02	
FISH	TEENAGER	9.29E+03	4.98E-02	7.38E-02	2.78E-02	1.35E-04	1.85E-02	9.64E-03	4.06E-03	
FISH	CHILD	5.61E+03	8.72E-02	9.21E-02	1.50E-02	1.93E-04	1.14E-02	1.07E-02	2.08E-03	
FISH	TOTAL	7.30E+04	3.70E-01	5.16E-01	2.85E-01	1.08E-03	1.48E-01	5.97E-02	3.56E-02	

TABLE VII-E-3

\* \* \* POPULATION WATER CONSUMPTION DOSES \* \* \*

-----DOSE (MAN-REM)-----																					
PATHWAY	AGE GROUP	USAGE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI												
DRINKING	ADULT	1.29E+08	7.26E-02	1.37E-01	1.11E-01	9.37E-02	7.42E-02	1.44E-01	7.38E-02												
DRINKING	TEENAGER	1.93E+07	1.45E-02	2.37E-02	1.27E-02	1.39E-02	1.11E-02	2.09E-02	9.33E-03												
DRINKING	CHILD	2.75E+07	5.70E-02	6.87E-02	2.48E-02	4.41E-02	1.58E-02	3.93E-02	1.92E-02												
DRINKING	TOTAL	1.76E+08	1.44E-01	2.30E-01	1.49E-01	1.52E-01	1.01E-01	2.04E-01	1.02E-01												
POPULATION=5.29E+05 DILUTION=3.08E+01 TRANSIT TIME=3.06E+01 HR (INCLUDING 24 HR FOR TREATMENT FACILITY)																					
AVERAGE INDIVIDUAL CONSUMPTION (L/YR)			ADULT=3.70E+02			TEEN=2.60E+02			CHILD=2.60E+02												
* * * ISOTOPE CONTRIBUTION * * *																					
AGE GROUP	BONE		LIVER		TOTAL BODY		THYROID		KIDNEY		LUNG	GI-LLI									
ADULT	SR	89	2%	CS	137	53%	SR	90	1%	I	131	54%	CS	137	33%	CS	137	5%	CS	137	1%
	SR	90	9%	CS	134	14%	CS	137	43%	H	3	45%	CS	134	8%	CS	134	1%	CO	58	18%
	CS	137	74%	H	3	30%	CS	134	14%				H	3	56%	SB	125	63%	CO	60	3%
	CS	134	11%				CO	58	1%				H	3	29%			SB	124	2%	
	SB	125	1%				H	3	38%									SB	125	10%	
																		AG	110M	2%	
TEENAGER	SR	89	2%	CS	137	61%	SR	90	2%	I	131	64%	CS	137	33%	CS	137	9%	CS	137	2%
	SR	90	9%	CS	134	16%	CS	137	40%	H	3	35%	CS	134	8%	S	134	2%	CO	58	19%
	CS	137	74%	H	3	21%	CS	134	14%				H	3	56%	SB	125	64%	CO	60	3%
	CS	134	11%				CO	58	2%				H	3	23%			SB	124	3%	
							H	3	39%									SB	125	12%	
																		AG	110M	2%	
CHILD	SR	89	3%	CS	137	63%	SR	90	3%	I	131	69%	CS	137	33%	CS	137	12%	CS	137	1%
	SR	90	5%	CS	134	15%	CS	137	26%	H	3	30%	CS	134	8%	CS	134	3%	CO	58	11%
	CS	137	78%	H	3	19%	CS	134	9%				H	3	56%	SB	125	49%	CO	60	2%
	CS	134	11%				CO	58	4%				H	3	34%			SB	124	2%	
							H	3	54%									SB	125	8%	
																		AG	110M	1%	

TABLE VII-E-4

-----DOSE (MAN-REM)-----																		
PATHWAY	AGE GROUP		USAGE		BONE		LIVER		TOTAL BODY		THYROID		KIDNEY		LUNG		GI-LLI	
DRINKING	ADULT		2.12E+07		1.18E-02		2.22E-02		1.80E-02		1.51E-02		1.20E-02		2.32E-02		1.19E-02	
DRINKING	TEENAGER		3.17E+06		2.34E-03		3.83E-03		2.06E-03		2.25E-03		1.79E-03		3.39E-03		1.51E-03	
DRINKING	CHILD		4.52E+06		9.23E-03		1.11E-02		4.01E-03		7.13E-03		2.56E-03		6.36E-03		3.11E-03	
DRINKING	TOTAL		2.89E+07		2.33E-02		3.72E-02		2.40E-02		2.45E-02		1.64E-02		3.30E-02		1.66E-02	
POPULATION=8.70E+04 DILUTION=3.13E+01 TRANSIT TIME=3.10E+01 HR (INCLUDING 24 HR FOR TREATMENT FACILITY)																		
AVERAGE INDIVIDUAL CONSUMPTION (L/VR) ADULT=3.70E+02 TEEN=2.60E+02 CHILD=2.60E+02																		
* * * ISOTOPE CONTRIBUTION * * *																		
AGE GROUP		BONE		LIVER		TOTAL BODY		THYROID		KIDNEY		LUNG		GI-LLI				
ADULT																		
	SR 89	2%	CS 137	53%	SR 90	1%	I 131	54%	CS 137	33%	CS 137	5%	CS 137	1%				
	SR 90	9%	CS 134	14%	CS 137	43%	H 3	45%	CS 134	8%	CS 134	1%	CO 58	18%				
	CS 137	74%	H 3	30%	CS 134	14%			H 3	56%	SB 125	63%	CO 60	3%				
	CS 134	11%			CO 58	1%					H 3	29%	SB 124	2%				
	SB 125	1%			H 3	38%							SB 125	10%				
													AG 110M	2%				
TEENAGER																		
	SR 89	2%	CS 137	61%	SR 90	2%	I 131	64%	CS 137	33%	CS 137	9%	CS 137	2%				
	SR 90	9%	CS 134	16%	CS 137	40%	H 3	35%	CS 134	8%	CS 134	2%	CO 58	19%				
	CS 137	74%	H 3	21%	CS 134	14%			H 3	56%	SB 125	64%	CO 60	3%				
	CS 134	11%			CO 58	2%					H 3	23%	SB 124	3%				
					H 3	39%							SB 125	12%				
													AG 110M	2%				
CHILD																		
	SR 89	3%	CS 137	63%	SR 90	3%	I 131	69%	CS 137	33%	CS 137	12%	CS 137	1%				
	SR 90	5%	CS 134	15%	CS 137	26%	H 3	30%	CS 134	8%	CS 134	3%	CO 58	11%				
	CS 137	78%	H 3	19%	CS 134	9%			H 3	56%	SB 125	49%	CO 60	2%				
	CS 134	11%			CO 58	4%					H 3	34%	SB 124	2%				
					H 3	54%							SB 125	8%				
													AG 110M	1%				

## -----CUMULATIVE TOTAL-----

PATHWAY	AGE GROUP	USAGE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
DRINKING	CUMUL TOTAL	2.05E+03	1.67E-01	2.67E-01	1.73E-01	1.76E-01	1.17E-01	2.37E-01	1.19E-01

## HYDROSPHERE TRITIUM DOSE

PATHWAY	AGE GROUP	USAGE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
WATER	TOTAL	2.20E+00	1.14E-08	1.14E-08	1.14E-08	1.14E-07	1.14E-08	1.14E-08	1.14E-08



\* \* \* TABLE VII-E-5 \* \* \*  
RECREATION POPULATION DOSES

PATHWAY	AGE GROUP	USAGE	SKIN	TOTAL BODY	THYROID
SHORELINE	TOTAL POPUL	4.10E+07	4.33E-01	3.72E-01	3.72E-01

LOCATION- DOWN STREAM

DILUTION=0.73E+01      TRANSIT TIME=0.67E+00 HR      SWF=0.2

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

AGE GROUP	SKIN	TOTAL BODY
ADULT		
	CS 137 64%	CS 137 64%
	CS 134 8%	CS 134 8%
	CO 58 3%	CO 58 3%
	CO 60 14%	CO 60 13%
	SB 125 8%	SB 125 8%

PATHWAY	AGE GROUP	USAGE	SKIN	TOTAL BODY	THYROID
SWIMMING	TOTAL POPUL	4.10E+07	0.00E+00	4.95E-03	4.95E-03

LOCATION- DOWN STREAM

DILUTION=0.73E+01      TRANSIT TIME=0.67E+00 HR

\* \* \* ISOTOPE CONTRIBUTION \* \* \*

AGE GROUP	SKIN	TOTAL BODY
ADULT		
		CS 137 18%
		CS 134 10%
		CO 58 44%
		CO 60 8%
		SB 124 2%
		SB 125 8%
		AG 110M 4%

PATHWAY	AGE GROUP	USAGE	SKIN	TOTAL BODY	THYROID
BOATING	TOTAL POPUL	4.10E+07	0.00E+00	2.48E-03	2.48E-03

LOCATION- DOWN STREAM

DILUTION=0.73E+01      TRANSIT TIME=0.67E+00 HR

• • • DOSE TO BIOTA • • •

MRADS PER .5VR

TABLE VII-E-6

DILUTION=	1.00E+00	TRANSIT TIME=	0.00E+00 HR
	INTERNAL	EXTERNAL	TOTAL
FISH	2.24E+00	2.91E+00	5.14E+00
INVERTEBRATE	2.97E-01	5.81E+00	6.10E+00
ALGAE	1.14E+00	7.73E-03	1.15E+00
MUSKRAT	1.16E+01	1.94E+00	1.36E+01
RACCOON	4.62E-01	1.45E+00	1.91E+00
HERON	5.52E+01	1.94E+00	6.71E+01
DUCK	1.05E+01	2.90E+00	1.34E+01

• • • ISOTOPE CONTRIBUTION • • •

PATHWAY	BODY
FISH	CS 137 72%
	NB 95 12%
	CS 134 14%
INVERTEBRATE	CS 137 27%
	CS 134 5%
	CO 58 25%
	MN 54 14%
	CO 60 5%
	LA 140 9%
	AG 110M 8%
	H 3 2%
ALGAE	CS 137 35%
	CS 134 6%
	CO 58 6%
	CO 60 1%
	LA 140 12%
	SB 124 7%
	SB 125 25%
MUSKRAT	SR 90 4%
	CS 137 75%
	CS 134 18%
RACCOON	SR 90 3%
	CS 137 70%
	CS 134 15%
	CO 58 2%
	MN 54 1%
HERON	CS 137 78%
	CS 134 21%
DUCK	SR 90 5%
	CS 137 76%
	CS 134 16%