REFERENCE:
10CFR50.36a(a)(2)

WNP-2 SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT JULY THROUGH DECEMBER 1992

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

LICENSE NO. NPF-21

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1.0 INTRODUCTION

This report is submitted in compliance with 10CFR50.36a(a)(2) and Technical Specification 6.9.1.11. It includes a summary of the quantities of radioactive liquid and gaseous effluents and solid radwaste released from WNP-2 during the previous six months of operation. Effluent data is summarized on a quarterly basis.

2.0 LIQUID EFFLUENTS

The radwaste liquid effluents were released in "batch mode" during the reporting period. Seventy (70) liquid batch releases occurred during the third calendar quarter and 22 batch releases were performed during the fourth calendar quarter. The total time period for the batch releases was 179 hours, with the maximum, minimum and average time periods for a release being 2.7, 1.4, and 1.9 hours, respectively. The volume of dilution water considered is assumed to be the total volume of recirculating cooling tower blowdown flow for the period. The average flow rate of the Columbia River during July through December 1992 was 8.9E+04 cubic feet per second.

Computer runs were performed to verify compliance with Offsite Dose Calculation Manual (ODCM) limits. The third quarter calculated dose for the maximum individual (adult age group) was 1.6E-03 mrem whole body and 2.7E-03 mrem for the maximum organ. The fourth quarter calculated dose for the maximum individual (adult age group) was 4.1E-04 mrem whole body and 6.7E-04 mrem for the maximum organ.

The liquid batch releases were recirculated prior to sampling. A representative sample was obtained and analyzed for each batch release. A composite of the batch samples for each quarter was analyzed for strontium and iron. The methods used for measuring the total radioactivity were gamma spectroscopy, liquid scintillation and proportional counting. Table 2-1 provides a summation of all liquid releases during this reporting period.

The percent of MPC limit in Table 2-1 is based on the total of the MPC fractions using the nuclides in Table 2-2 and the concentrations listed in 10CFR20, Appendix B, Table 2, Column 2.

Estimated total errors are listed in Table 2-1, and are propagated from individual error estimates of sample activity, sample volume, tank volume, and tank homogeneity. The estimated total errors were calculated by obtaining the square root of the sum of the squares of the individual error contributions and multiplying by 1.96 for a 95% confidence level.

Table 2-1

WNP-2 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

Report Period: July - December 1992

	Unit	3rd Quarter	4th Quarter	Est Total Error* %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	2.2E-02	3.0E-03	2.2E+01
2. Average diluted concentration during period	uCi/ml	3.3E-08	2.5E-09	
3. Percent of MPC limit	%	4.0E-02	8.6E-03	
B. Tritium				
1. Total release	Ci	4.9E+00	2.8E+00	2.2E+01
2. Average diluted concentration during period	uCi/ml	7.3E-06	2.3E-06	
3. Percent of MPC limit	%	2.4E-01	7.8E-02	
C. Dissolved and entrained gases				
1. Total release	Ci	1.0E-03	1.3E-03	2.2E+01
2. Average diluted concentration during period	uCi/ml	1.5E-09	1.0E-09	
3. Percent of MPC limit	%	7.8E-04	5.2E-04	
D. Gross alpha radioactivity				
1. Total release	Ci	1.8E-06	8.5E-07	2.3E+01
E.				
Volume of waste (prior to dilution)	liters	4.0E+06	1.3E+06	1.5E+01
F.				
Volume of dilution water used during period	liters	6.7E+08	1.2E+09	1.5E+01

* At 95% confidence level

Table 2-2

WNP-2 LIQUID EFFLUENTS - SOURCE TERMS

Report Period: July - December 1992 BATCH MODE

Nuclides Released	Unit	3rd Quarter	4th Quarter
Strontium-89	Ci	<2.5E-05	5.7E-05
Strontium-90	Ci	<2.0E-05	<6.7E-06
Cesium-134	Ci	1.5E-05	2.0E-05
Cesium-137	Ci	3.2E-04	4.3E-05
Iodine-131	Ci	3.3E-05	1.4E-05
Cobalt-58	Ci	1.3E-04	3.0E-05
Cobalt-60	Ci	3.1E-03	7.3E-04
Iron-59	Ci	<3.5E-04	<9.7E-05
Zinc-65	Ci	1.3E-03	4.0E-04
Manganese-54	Ci	2.1E-04	2.3E-05
Chromium-51	Ci	<1.1E-03	<3.2E-04
Zirconium-Niobium-95	Ci	<2.4E-04	<7.2E-05
Molybdenum-99	Ci	<1.4E-03	<4.4E-04
Technetium-99m	Ci	<1.5E-04	3.2E-05
Barium-Lanthanum-140	Ci	<4.4E-04	<1.3E-04
Cerium-141	Ci	<3.2E-04	<7.6E-05
Cerium-144	Ci	<2.1E-04	<2.9E-04
Iron-55	Ci	1.7E-02	1.6E-03

Table 2-2 (continued)

Nuclides Released	Unit	3rd Quarter	4th Quarter	MPC Values
Others				
Sodium-24	Ci	4.3E-05	6.6E-05	
Total for period (above)	Ci	2.2E-02	3.0E-03	
Xenon-133	Ci	3.1E-04	3.7E-04	
Xenon-135	Ci	7.3E-04	8.9E-04	
Tritium	Ci	4.9E+00	2.8E+00	

Note: Less than (<) values are not included in the Total For Period Values.

3.0 GASEOUS EFFLUENTS

The gaseous radwaste effluents from WNP-2 were released from three (3) release points:

1. Main Plant Vent - mixed mode release
2. Turbine Building - ground level release
3. Radwaste Building - ground level release

The gaseous source terms from each release point are listed in Tables 3-1, 3-2, and 3-3. Table 3-4 provides a summation of the total activity released, the average release rate, the percent of ODCM Requirement For Operability limit, gross alpha radioactivity and the estimated total error associated with the measurements of radioactivity in the gaseous effluents. Included in Table 3-2 is the Tritium contribution by steam relief venting from the Turbine Building Auxiliary Boiler.

Radioactivity measurements for gaseous effluent releases are performed for fission and activation gases by collecting the samples on charcoal traps and analyzing them using gamma spectroscopy. Tritium is sampled by freeze trapping and analyzed by liquid scintillation counting. Particulates and iodines are sampled using particulate filters and charcoal cartridges. Both are analyzed using gamma spectroscopy.

Total error estimates are propagated from individual error estimates of sample volume, sample activity and effluent flow rate measurements. The overriding uncertainty in all cases is in the measurement of the effluent and sample volumes. The estimated error was determined to be 36% at the 95% confidence level.

The percent of ODCM limit for fission and activation gases (air dose) was determined for locations 1 through 8 and was based on quarterly limits of ten (10) millirads for beta and five (5) millirads for gamma. Locations 1 through 8 were used to determine the most restrictive value to be used in Table 3-4, Section A.3.

The percent of ODCM limit calculations for iodines, particulates with half-lives greater than eight (8) days and tritium are based on the quarterly limit of 7.5 mrem to any organ. Locations 4 through 8 were used to determine the most restrictive value to be used in Table 3-4 for each quarter.

Calculations were performed for releases using the NRC GASPAR II computer program and parameters as outlined in the ODCM. Quarterly doses were determined at the following locations:

Location 1: Site Boundary; 1.2 miles (ground and inhalation pathway)

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	3.0E-02	0.30	5.3E-02	1.06
4th Qtr.	1.9E-02	0.19	2.6E-02	0.52

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	1.6E-02	0.21
4th Qtr.	4.8E-02	0.64

Location 2: Beyond Site Boundary; 3.9 miles ESE for the third and fourth quarters (ground and inhalation pathways) at the location having the highest X/Q values for mixed mode release.

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	5.1E-04	0.01	4.2E-04	0.01
4th Qtr.	1.3E-03	0.01	1.1E-03	0.02

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	2.2E-03	0.03
4th Qtr.	3.9E-03	0.05

Location 3: Beyond Site Boundary; 3 miles ESE for the third and fourth quarters (ground and inhalation pathways) at location having the highest X/Q values for ground level release mode

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	2.8E-03	0.03	5.1E-03	0.10
4th Qtr.	2.4E-03	0.02	3.2E-03	0.06

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	2.2E-03	0.03
4th Qtr.	4.7E-03	0.06

Location 4: 4.5 miles ESE (ground, vegetables and inhalation pathways)

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	4.1E-04	0.00	3.6E-04	0.01
4th Qtr.	1.0E-03	0.01	7.4E-04	0.01

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	5.1E-03	0.07
4th Qtr.	8.9E-03	0.12

Location 5: 6.4 miles SE (ground, meat, cow milk and inhalation pathways)

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	2.2E-04	0.00	1.8E-04	0.00
4th Qtr.	9.1E-04	0.01	7.4E-04	0.01

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	6.3E-03	0.08
4th Qtr.	1.2E-02	0.16

Location 6: 4.1 miles ESE (ground, vegetables and inhalation pathways)

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	4.7E-04	0.00	3.8E-04	0.01
4th Qtr.	1.2E-03	0.01	9.0E-04	0.02

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	6.1E-03	0.08
4th Qtr.	1.1E-02	0.15

Location 7: 4.3 miles NE (ground, and inhalation pathways)

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	2.8E-04	0.00	2.0E-04	0.00
4th Qtr.	4.1E-04	0.00	3.0E-04	0.01

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	5.4E-04	0.01
4th Qtr.	1.4E-03	0.02

Location 8: 4.1 miles ENE (ground, vegetables and inhalation pathways)

Air Dose (mrad)	Beta	% ODCM Limit	Gamma	% ODCM Limit
3rd Qtr.	3.5E-04	0.00	4.0E-04	0.01
4th Qtr.	6.6E-04	0.01	6.6E-04	0.01

Highest Organ Dose	mrem	% ODCM Limit
3rd Qtr.	3.2E-03	0.04
4th Qtr.	4.2E-03	0.06

In addition to the reactor facility, WNP-2 has a permanent laundry facility located approximately 0.75 miles from the reactor building. Its ventilation system contains HEPA filters on the discharge and is continuously monitored for particulates. Also, the backup chemistry laboratory within the Emergency Operations Facility (EOF) is located adjacent to the laundry facility. The radiochemical hood within the backup chemistry lab contains HEPA filters and is monitored for radioactive releases when in operation. Gamma spectrometry indicated no radioactive material present other than that attributable to natural background.

There were no abnormal releases of gaseous effluent during the third and fourth quarters of 1992.

There were two reportable occurrences for inclusion into this Radioactive Effluent Release Report.

1. PER NUMBER 292-1019 was issued to identify a flow verification being greater than a four hour interval. ODCM Table 6.1.2.1-1, Radioactive Gaseous Effluent Monitoring Instrumentation, Instrument 4, Item e, Sampler Flow Rate Monitor refers to Compensatory Measure 113. Compensatory Measure 113 states,"With the number of Channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided that the flow rate is estimated at least once per 4 hours". Contrary to this requirement, a flow verification was 2.5 hours overdue.

   The above mentioned occurrence had no adverse effect on plant emissions or the health and safety of the public or plant personnel.

2. A ten millicurie Nickel-63 gas ionization source was inadvertently opened within a clean work area, the attendant Health Physics Technician smeared the source surface and found removable activity. PER 292-0254 was issued, the resolution was to modify the procedure so that the equipment requiring source disassembly will be moved to a designated radiologically controlled area prior to disassembly. The source was reassembled and was verified radiologically clean.

Table 3-1

WNP-2 GASEOUS EFFLUENTS
SOURCE TERMS - MIXED MODE RELEASES
MAIN PLANT VENT

Report Period
July - December 1992

CONTINUOUS MODE

Nuclides Released	Unit	3rd Quarter	4th Quarter
1. Fission gases			
Krypton-85	Ci	<5.4E+01	<5.5E+01
Krypton-85m	Ci	3.7E-01	6.3E-01
Krypton-87	Ci	<7.8E-01	<6.4E-01
Krypton-88	Ci	6.2E-01	3.0E-01
Xenon-133	Ci	1.4E-01	6.6E+00
Xenon-133m	Ci	<2.2E+00	<8.0E+00
Xenon-135	Ci	1.3E+00	2.2E+00
Xenon-135m	Ci	1.8E+00	1.1E+00
Xenon-138	Ci	2.1E+00	3.0E+00
OTHERS			
Argon-41	Ci	1.1E-01	2.9E+00
Total for period (above)	Ci	6.4E+00	1.7E+01
2. Iodines			
Iodine-131	Ci	8.7E-04	1.1E-03
Iodine-132	Ci	3.4E-03	<1.2E-04
Iodine-133	Ci	7.2E-03	3.4E-03
Iodine-135	Ci	1.7E-03	<1.4E-04
Total for period (above)	Ci	1.3E-02	4.5E-03

Table 3-1 (continued)

3. Particulates

Nuclides Released	Unit	3rd Quarter	4th Quarter
Strontium-89	Ci	6.7E-05	2.0E-03
Strontium-90	Ci	7.5E-06	<6.2E-03
Cesium-134	Ci	<5.4E-04	<1.9E-04
Cesium-137	Ci	<6.2E-04	<1.6E-04
Barium-Lanthanum-140	Ci	1.5E-04	5.0E-04
Molybdenum-99	Ci	<5.9E-03	<3.0E-03
Cerium-141	Ci	<4.5E-04	<1.4E-04
Cerium-144	Ci	<1.7E-03	<5.8E-04
Cobalt-58	Ci	<4.9E-04	<2.7E-04
Cobalt-60	Ci	3.4E-05	6.2E-05
Iron-59	Ci	<1.5E-03	<4.9E-04
Manganese-54	Ci	<4.8E-04	<1.5E-06
Zinc-65	Ci	<1.2E-03	<4.3E-04
OTHERS			
NONE	Ci		
Total for period (above)	Ci	2.6E-04	2.6E-03

Table 3-1 (continued)

3. Particulates (continued)

Nuclides Released	Unit	3rd Quarter	4th Quarter
OTHERS with T 1/2 <8 days			
Bromine-82	Ci	<2.8E-05	3.7E-06
Rubidium-89	Ci	2.3E-05	<9.4E-04
Strontium-91	Ci	4.3E-05	3.0E-05
Cesium-138	Ci	5.0E-03	<2.3E-04
Barium-139	Ci	3.3E-02	6.1E-02
Total with T 1/2 < 8 days	Ci	3.8E-02	6.1E-02

4. Tritium

Tritium	Ci	2.1E+00	4.2E+00

Total building release	Ci	8.6E+00	2.1E+01

Note: Less than (<) values are not included in the Total For Period Values.

Table 3-2

WNP-2 GASEOUS EFFLUENTS
SOURCE TERMS GROUND LEVEL RELEASES
TURBINE BUILDING

Report Period
July - December 1992

CONTINUOUS MODE

Nuclides Released	Unit	3rd Quarter	4th Quarter
1. Fission gases			
Krypton-85	Ci	<7.0E+01	<6.5E+01
Krypton-85m	Ci	<5.3E-01	<4.9E-01
Krypton-87	Ci	<1.7E+00	<2.0E+00
Krypton-88	Ci	<2.3E+00	<2.7E+00
Xenon-133	Ci	<1.0E+00	<8.0E+00
Xenon-133m	Ci	<7.0E+00	<2.1E+00
Xenon-135	Ci	1.2E+00	1.7E+00
Xenon-135m	Ci	<7.2E+00	2.9E+00
Xenon-138	Ci	8.6E+00	<1.9E+01
OTHERS			
NONE	Ci		
Total for period (above)	Ci	9.8E+00	4.6E+00
2. Iodines			
Iodine-131	Ci	4.1E-04	8.7E-04
Iodine-132	Ci	3.1E-03	4.8E-04
Iodine-133	Ci	3.5E-03	7.9E-03
Iodine-135	Ci	7.2E-03	9.1E-03
Total for period (above)	Ci	1.4E-02	1.8E-02

Table 3-2 (continued)

3. Particulates

Nuclides Released	Unit	3rd Quarter	4th Quarter
Strontium-89	Ci	1.4E-03	7.0E-04
Strontium-90	Ci	<1.0E-05	<1.1E-05
Cesium-134	Ci	<9.4E-04	<4.0E-04
Cesium-137	Ci	<9.9E-04	<5.1E-04
Barium-Lanthanum-140	Ci	7.5E-04	2.5E-03
Molybdenum-99	Ci	<1.2E-02	<9.1E-03
Cerium-141	Ci	<8.0E-04	<4.6E-04
Cerium-144	Ci	<3.0E-03	<1.5E-03
Cobalt-58	Ci	<9.7E-04	<6.8E-04
Cobalt-60	Ci	<1.4E-03	<5.8E-04
Iron-59	Ci	<2.5E-03	<1.0E-03
Manganese-54	Ci	<8.1E-04	<3.4E-04
Zinc-65	Ci	<2.0E-03	<9.0E-04
OTHERS			
NONE	Ci		
Total for period (above)	Ci	2.1E-03	3.2E-03

Table 3-2 (continued)

Nuclides Released	Unit	3rd Quarter	4th Quarter
OTHERS with T 1/2 < 8 days			
Rubidium-89	Ci	1.0E-04	3.9E-04
Strontium-91	Ci	1.1E-03	5.1E-04
Cesium-138	Ci	1.1E+00	9.9E-01
Barium-139	Ci	5.6E-01	5.5E-01
Total with T 1/2 < 8 days	Ci	1.7E+00	1.5E+00

4. Tritium

Tritium	Ci	1.1E+01	2.0E+01

Total building release	Ci	2.1E+01	2.5E+01

Note: Less than (<) values are not included in the Total For Period Values.

Table 3-3

WNP-2 GASEOUS EFFLUENTS
SOURCE TERMS GROUND LEVEL RELEASES
RADWASTE BUILDING

Report Period
July - December 1992

CONTINUOUS MODE

Nuclides Released	Unit	3rd Quarter	4th Quarter
1. Fission gases			
Krypton-85	Ci	<2.5E+02	<2.5E+02
Krypton-85m	Ci	<1.7E+00	<1.7E+00
Krypton-87	Ci	<5.0E-01	<3.5E-01
Krypton-88	Ci	<9.1E-01	<6.8E-01
Xenon-133	Ci	3.9E+00	3.0E+00
Xenon-133m	Ci	<2.2E+00	<2.2E+00
Xenon-135	Ci	4.9E+00	5.4E+00
Xenon-135m	Ci	7.9E+00	3.1E+00
Xenon-138	Ci	<2.5E+00	<4.9E-01
OTHERS			
NONE	Ci		
Total for period (above)	Ci	1.7E+01	1.2E+01
2. Iodines			
Iodine-131	Ci	9.5E-05	1.1E-04
Iodine-132	Ci	1.5E-03	2.6E-04
Iodine-133	Ci	4.9E-04	5.7E-04
Iodine-135	Ci	1.5E-04	1.5E-04
Total for period (above)	Ci	2.2E-03	1.1E-03

Table 3-3 (continued)

3. Particulates

Nuclides Released	Unit	3rd Quarter	4th Quarter
Strontium-89	Ci	2.0E-05	2.0E-07
Strontium-90	Ci	<2.9E-06	1.1E-07
Cesium-134	Ci	<7.1E-05	<3.2E-05
Cesium-137	Ci	<8.6E-05	<3.6E-05
Barium-Lanthanum-140	Ci	<1.8E-04	<9.2E-05
Molybdenum-99	Ci	<6.5E-04	<4.1E-04
Cerium-141	Ci	<8.7E-05	<3.1E-05
Cerium-144	Ci	<2.2E-04	<1.2E-05
Cobalt-58	Ci	<6.3E-05	<2.8E-05
Cobalt-60	Ci	<1.1E-04	<3.9E-05
Iron-59	Ci	<2.0E-04	<9.2E-05
Manganese-54	Ci	<6.0E-05	<2.9E-05
Zinc-65	Ci	<1.5E-04	<8.2E-04
OTHERS			
NONE	Ci		
Total for period (above)	Ci	2.0E-05	3.1E-07
OTHERS with T 1/2 < 8 days			
NONE	Ci		

4. Tritium

Tritium	Ci	6.0E-01	1.6E+00
Total building release	Ci	1.7E+01	1.3E+01

Note: Less than (<) values are not included in the Total For Period Values.

Table 3-4

WNP-2 GASEOUS EFFLUENTS
SUMMATION OF ALL RELEASES
Report Period
July - December 1992

	Unit	3rd Quarter	4th Quarter	Est Total Error %*
A. Fission and activation gases				
1. Total release	Ci	3.3E+01	3.3E+01	3.6E+01
2. Average release rate for period	uCi/sec	4.2E+00	4.2E+00	
3. Percent of ODCM limit	%	1.1E+00	5.2E-01	
B. Iodines				
1. Total Iodine Release	Ci	3.0E-02	2.4E-02	3.6E+01
2. Average release rate for period	uCi/sec	3.8E-03	3.0E-03	
3. Percent of ODCM limit	%	8.4E-02	1.6E-01	
C. Particulates				
1. Particulates	Ci	2.4E-03	5.8E-03	3.6E+01
2. Average release rate for period	uCi/sec	3.1E-04	7.3E-04	
3. Percent of ODCM limit	%	8.4E-02	1.6E-01	
4. Gross alpha radioactivity	Ci	6.8E-04	3.0E-04	
D. Tritium				
1. Total release	Ci	1.4E+01	2.6E+01	3.6E+01
2. Average release rate for period	uCi/sec	1.7E+00	3.3E+00	
3. Percent of ODCM limit	%	8.4E-02	1.6E-01	

* 95% confidence level

Table 3-5

WNP-2 GASEOUS EFFLUENTS
BATCH RELEASES

Report Period
July - December 1992

Type	Number	Total Time (hrs)	Maximum Time (hrs)	Minimum Time (hrs)	Mean Time (hrs)
Purge	13	156.7	24.0	2.0	12.1
Vent	42	68.7	9.6	0.7	1.6

4.0 SOLID RADWASTE

A total volume of 10670.9 ft^3 (302.0 m^3) of solid waste was transported in 42 shipments during the July through December 1992 reporting period. The reported volumes are the disposal volumes of the containers shipped for burial. The total activity of the waste shipped was 777 Ci; 725 Ci was contained in dewatered spent resins and 51.5 Ci was contained in DAW.

A. Dewatered Spent Resin

Twenty five (25) shipments consisted of dewatered resins which accounted for 4028.2 ft^3 (114.0 m^3) of the radioactive wastes shipped during the reporting period. The burial containers were ES-190 and EL-142 liners provided by NUPAC Services, Inc. The total activity of the resins shipped during the reporting period was 725 Ci. The principal nuclides and their percent contribution to the total activity are listed in Table 4-3. The solid wastes were shipped to the U S Ecology Hanford Burial Site using NUPAC 10-142, NUPAC 14-210 casks or Supply System flatbed trucks.

The counting error associated with the total activity has consistently been found to be less than 3.0% at one standard deviation for previous reporting periods. The statistical counting error is assumed to be 3.0% for the purpose of this error evaluation.

Other parameters considered in estimating the total error of the activity shipped included the error in measuring the absolute volume, the weight of the waste in the liners, the representativeness of the sample taken, the homogeneity of the nuclide distribution within a batch or liner and the geometry error in the gamma spectroscopy analysis. The gamma spectroscopy calibration error is approximately 5%. The best estimate of the total error in the activity of spent resin shipped is assumed to be approximately plus or minus 25%.

B. Dry Active Waste (DAW)

A total of 6642.7 ft^3 (188.0 m^3) of DAW was shipped in Container Products Corporation B-25 boxes or NUPAC Services ES-190,ES-210 or EA-50 encapsulation liners. Three shipments (out of 17 total DAW shipments) were comprised of DAW which was volume reduced (supercompacted) and shipped by a vendor waste processor. The total activity of the DAW shipped was 51.5 Ci. The value of the activity shipped was determined by using computerized dose rate-to-Curie conversion factors. The conversion factors were based on a nuclide distribution taken from analysis of contamination representative of the major DAW production areas. This distribution is updated annually in conjunction with offsite analyses of hard-to-measure nuclides. Because of the high

activity in a single EA-50 (CRD filters) shipment, the normal DAW scaling factors were carefully scrutinized and adjusted to more accurately represent this waste stream for this shipment. Specifically Fe-55 and I-129 scaling factors were reduced (Fe-55/Co-60 from 7.12 to 1.12 and I-129/Cs-137 from 0.231 to 2.5E-07) based on comparisons with industry experience, past history, and more accurate sample results. A meaningful counting error cannot be generated for DAW; however, the total error may be assumed to be less than or equal to 25%, since DAW would be subjected to similar error contributions as spent resin.

C. IRRADIATED COMPONENTS

No Irradiated Components were shipped during the reporting period.

D. Other Waste

No other waste was shipped during the reporting period.

4.1 Scaling Factor Methodology

Scaling factors are based on outside laboratory (SCIENTECH Inc. formerly SAIC) analysis of hard-to-measure nuclides. Scaling factors are updated on an annual basis or when triggered by an order of magnitude change in corrosion to fission product ratios (Co-60/Cs-137) in the resin waste streams, as compared to the previous offsite analysis.

C-14, Ni-63, Fe-55

The ratio of each of these nuclides to Co-60 is determined after outside laboratory analysis of each waste stream. The resulting scaling factors are applied to the measured Co-60 concentration for a particular batch or container of radwaste to arrive at the C-14, Ni-63 and Fe-55 concentrations.

H-3, Tc-99, I-129, Sr-90

The ratio of each of these nuclides to Cs-137 is determined after outside laboratory analysis of each waste stream. The resulting scaling factors are applied to the measured Cs-137 concentration for a particular batch or container of radwaste to arrive at the H-3, Tc-99, I-129 and Sr-90 concentrations.

Transuranics

The ratio of hard to measure TRU nuclides to Ce-144 is determined after outside laboratory analysis of each waste stream, as recommended by the AIF report, "Methodologies for Classification of Low Level Radioactive Waste for Nuclear Power Plants." These nuclides will be reported if Ce-144 is detected and TRU nuclides

have been detected by outside laboratory analyses. TRU nuclides include Pu-239, Pu-238, Pu-241, Am-241, Cm-242 and Cm-244.

Outside laboratory LLDs must be at least 1 nCi/g for TRU, 35 nCi/g for PU-241 and 200 nCi/g for CM-242.

SCALING FACTORS

TABLE 4-1 - REQUIRED NUCLIDES

RATIO	DAW	RWCU POWDER RESIN	CFD POWDER RESIN	EDF/FDR POWDERED RESIN	EDR/FDR BEAD RESIN	RCS BASED LIQUID
H-3/CS-137	5.39E-01*	2.05E-01*	1.19E-02*	2.10E-04*	1.53E-02*	2.81E+02
C-14/CO-60	1.28E-03*	1.45E-04	1.81E-01	2.55E-04	1.51E-03	1.28E+02
Tc-99/Cs-137	7.32E-02*	4.19E-04*	9.79E-04*	2.47E-05	1.20E-03	7.32E-02
I-129/Cs-137	2.31E-01*	3.16E-04*	1.88E-03*	4.48E-05	5.67E-03*	2.31E-01

* Scaling factor based on LLD value.

TABLE 4-2 - CONDITIONAL NUCLIDES

RATIO	DAW	RWCU POWDER RESIN	CFD POWDER RESIN	EDF/FDR POWDERED RESIN	EDR/FDR BEAD RESIN	RCS BASED LIQUID
Ni-63/Co-60	NOTE 1	1.09E-01	1.25E-02	1.91E-01	7.21E-03	NOTE 1
Fe-55/Co-60	7.12	7.12E-01	1.08E-01	3.02E-01	2.70E-01	7.14
Sr-90/Cs-137	NOTE 1	2.65E-02*	3.93E-02	2.21E-03	9.56E-03	NOTE 1
Pu-239,240/Ce-144	NOTE 1	6.66E-02*	NOTE 1	3.48E-03*	NOTE 1	NOTE 1
Pu-238/Ce-144	NOTE 1	4.47E-02*	1.86E-02*	6.22E-03*	NOTE 1	NOTE 1
Pu-241/Ce-144	NOTE 1	8.23E+00*	NOTE 1	5.61E-01*	NOTE 1	NOTE 1
Am-241/Ce-144	NOTE 1	1.51E-02*	2.53E-03*	3.67E-03	NOTE 1	NOTE 1
Cm-242/Ce-144	NOTE 1	2.03E-01*	7.92E-03*	1.08E-02*	9.15E-03*	NOTE 1
Cm-243,244/Ce-144	NOTE 1	1.34E-02*	5.06E-03*	2.18E-03*	2.36E-02*	NOTE 1

* Scaling factor based on LLD value for Ce-144 or Cs-137 as applicable.

NOTE 1: Isotope not identified by offsite laboratory analysis.

TABLE 4-3
WNP-2 SOLID WASTE SHIPMENTS

JULY - DECEMBER 1992

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

1. Type of Waste

Waste Stream	Unit	6-month Period	Est. Total Error %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3 Ci	114 725	25
b. Dry active waste, contaminated equip., etc.	m^3 Ci	188 51.5	25
c. Irradiated components, control rods, etc.	m^3 Ci	NO SHIPMENT	
d. Other, (absorbed aqueous liquid)	m^3 Ci	NO SHIPMENT	

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

a. Dewatered Spent Resins **

Nuclide	%	Ci
Co-60	34.8	252
Zn-65	27.6	200
Fe-55*	21.7	157
Ni-63*	4.0	29.3
Cr-51	3.6	26.0
Co-58	2.8	20.4
Mn-54	2.4	17.7
Cs-137	0.7	5.4
Ba/La-140	0.6	4.1
Cs-134	0.4	2.8
Nb-95	0.4	2.7
I-131	0.4	2.6

* Indicates scaled nuclide

** Nuclides contributing <0.2 percent (%) of total are not listed.

b. Dry Active Waste (DAW)**

Nuclide	%	Ci
Fe-55*	47.7	24.6
Co-60	44.2	22.8
Zn-65	6.4	3.3
Cs-137	0.8	0.4
Ce-144	0.4	0.2
Sb-125	0.3	0.1
Mn-54	0.1	0.1

* Indicates scaled nuclide

** Nuclides contributing <0.1 percent (%) of total are not listed.

c. Irradiated Components - None

d. Other Waste - None

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
42	10-142 Cask (3) 14-210 Cask (21) Flatbed (18)	US Ecology Richland,WA

5.0 METEOROLOGY

The meteorological data contained in Tables 5-1 through 5-10 were obtained from the WNP-2 meteorological tower located 2500 ft west of WNP-2. Data was recovered from 33 ft and 245 ft levels. The meteorological data is a composite file from both the manual and automated data recovery systems.

The year was wetter and the wind calmer than 1991. Precipitation was normal for 1992 with the occurrence of fog and haze and blowing dust much less than 1991. There were few arctic outbreaks of cold air with the one significant outbreak causing extensive soft fruit damage in early February 1992. The year 1992 was very rainy in the fall. Snowfall and rain were above normal. In summary, the dispersive environment for WNP-2 for 1992 was normal.

The automated data recovery system continued to function at greater than 90% joint data recovery when power was provided by WNP-2 to the meteorological tower system. Power outages contributed to a total data recovery of less than 90% for 1992. All significant outages coincided with scheduled and unscheduled outages at WNP-2. Lightening strikes and thunderstorms were of minor concern and had no significant effect on meteorological tower operations. Backup alternative power is being added in 1993.

Tables 5-1 through 5-8 list the joint frequency distributions at the 33 ft and the 245 ft levels for 1992 by quarter with 5-9 and 5-10 listing the annual joint frequency distributions for 1992. The NRC stability classes A-G and seven wind categories along with the 16 wind sectors were used to prepare each joint frequency table. The annual joint frequency tables should be used to evaluate any vents and purges during 1992 as the releases were random in time.

Calibrations performed in 1992 produced no values exceeding WNP-2 FSAR meteorological equipment tolerances. Therefore, there has been no corrections applied to the raw data.

TABLE 5-1 1ST QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 33 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM TAPE
MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0
NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	1.	2.	2.	1.	1.
1	2	21.	6.	4.	2.	5.	6.	5.	15.	15.	6.	15.	15.	34.	65.	68.	31.
1	3	15.	5.	0.	0.	0.	5.	33.	18.	3.	6.	4.	2.	15.	71.	50.	23.
1	4	2.	0.	0.	0.	0.	0.	3.	5.	9.	1.	0.	0.	11.	10.	0.	5.
1	5	0.	0.	0.	0.	0.	0.	0.	1.	5.	3.	0.	0.	0.	1.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	2	8.	2.	2.	0.	0.	0.	0.	1.	3.	2.	3.	2.	1.	4.	6.	8.
4	3	10.	6.	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	1.	1.	3.	14.
4	4	0.	1.	1.	0.	0.	0.	0.	0.	5.	0.	0.	1.	0.	2.	1.	0.
4	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	2.	2.	1.	1.	2.	0.
5	2	22.	12.	6.	6.	0.	6.	8.	13.	14.	7.	13.	15.	27.	19.	30.	26.
5	3	21.	7.	5.	0.	0.	3.	16.	14.	4.	9.	2.	1.	6.	13.	18.	15.
5	4	0.	0.	0.	0.	0.	1.	3.	4.	2.	5.	0.	0.	1.	3.	1.	0.
5	5	0.	0.	0.	0.	0.	0.	0.	0.	5.	5.	0.	0.	0.	2.	0.	0.
5	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.
6	2	7.	3.	3.	1.	1.	2.	4.	6.	5.	2.	4.	7.	14.	10.	12.	11.
6	3	3.	0.	1.	0.	1.	4.	11.	14.	8.	6.	3.	3.	8.	15.	7.	4.
6	4	0.	0.	0.	0.	0.	0.	4.	4.	3.	3.	0.	0.	1.	6.	0.	0.
6	5	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	2.	2.	1.	1.
7	2	31.	22.	8.	4.	3.	1.	5.	10.	15.	9.	9.	8.	10.	23.	28.	34.
7	3	6.	10.	2.	0.	2.	2.	7.	19.	6.	4.	2.	1.	5.	13.	23.	21.
7	4	0.	0.	0.	0.	0.	0.	3.	1.	0.	1.	0.	0.	0.	1.	0.	0.
7	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 1682 MISSING = 0 CALM = 1 VARIABLE = 43

TABLE 5-2 1ST QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 245 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM TAPE

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	11.	7.	1.	0.	0.	1.	7.	20.	14.	5.	8.	5.	4.	41.	37.	17.
1	2	0.	0.	0.	0.	0.	0.	1.	2.	6.	13.	1.	0.	0.	5.	2.	0.
1	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	1.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.	0.	2.
4	2	4.	0.	0.	0.	0.	0.	1.	2.	7.	2.	4.	2.	1.	4.	3.	2.
4	3	12.	5.	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.	0.	0.	10.
4	4	1.	2.	1.	0.	0.	0.	0.	0.	1.	3.	0.	0.	1.	1.	1.	1.
4	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	1.	0.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1	0.	1.	0.	0.	0.	0.	2.	5.	8.	2.	3.	0.	0.	0.	1.	2.
5	2	4.	1.	2.	0.	1.	2.	5.	8.	5.	12.	5.	1.	0.	1.	3.	0.
5	3	12.	2.	3.	3.	0.	0.	0.	5.	3.	6.	3.	2.	0.	5.	7.	11.
5	4	2.	0.	0.	0.	0.	0.	0.	0.	2.	3.	1.	0.	1.	4.	1.	0.
5	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	0.
5	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	1	1.	1.	1.	0.	0.	1.	2.	7.	8.	4.	3.	0.	3.	1.	5.	2.
6	2	1.	0.	1.	0.	0.	1.	1.	5.	2.	3.	3.	3.	0.	0.	0.	0.
6	3	1.	2.	0.	2.	1.	0.	0.	4.	3.	4.	3.	2.	2.	4.	1.	2.
6	4	0.	0.	0.	0.	0.	0.	0.	2.	1.	0.	3.	1.	0.	4.	2.	0.
6	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	6.	2.	0.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	1.	1.	0.	0.	1.	1.	1.	3.	11.	4.	1.	3.	3.	3.	11.	4.
7	2	1.	8.	2.	7.	4.	6.	6.	8.	9.	6.	4.	6.	1.	0.	6.	7.
7	3	9.	1.	7.	13.	3.	2.	3.	9.	14.	6.	1.	0.	2.	2.	6.	11.
7	4	1.	1.	3.	1.	0.	0.	0.	1.	3.	4.	0.	0.	2.	3.	14.	12.
7	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	4.	3.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 830 MISSING = 0 CALM = 875 VARIABLE = 21

TABLE 5-3 2ND QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 33 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM TAPE

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	2	4.	1.	2.	0.	1.	2.	1.	3.	1.	1.	2.	0.	4.	3.	6.	2.
1	3	0.	0.	0.	0.	0.	2.	1.	2.	2.	0.	2.	1.	1.	7.	3.	2.
1	4	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.	1.	6.	1.	2.	1.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	1.	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.
3	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.
3	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	2	3.	16.	7.	1.	4.	4.	7.	9.	7.	7.	4.	5.	7.	7.	3.	7.
4	3	16.	16.	4.	4.	0.	6.	14.	20.	18.	10.	15.	7.	9.	8.	11.	13.
4	4	5.	0.	0.	0.	0.	0.	1.	6.	15.	20.	13.	6.	9.	9.	5.	2.
4	5	0.	0.	0.	0.	0.	0.	0.	0.	1.	6.	4.	9.	2.	0.	2.	0.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
5	2	14.	14.	6.	5.	7.	12.	19.	16.	16.	7.	17.	11.	13.	19.	12.	25.
5	3	33.	14.	14.	9.	3.	20.	29.	39.	43.	36.	36.	24.	24.	19.	37.	35.
5	4	0.	1.	0.	0.	0.	5.	8.	9.	27.	26.	19.	8.	4.	50.	47.	17.
5	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	14.	2.	5.	9.	13.	0.
5	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	1	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.
6	2	3.	7.	5.	5.	4.	4.	9.	5.	13.	3.	3.	3.	9.	6.	10.	15.
6	3	9.	2.	3.	0.	0.	1.	9.	32.	18.	22.	11.	9.	16.	27.	26.	10.
6	4	0.	0.	0.	0.	0.	0.	1.	4.	4.	8.	7.	2.	4.	23.	14.	1.
6	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	0.	1.	0.	3.	0.	0.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.
7	2	30.	36.	7.	7.	2.	7.	12.	12.	9.	10.	6.	7.	5.	14.	21.	34.
7	3	12.	3.	12.	1.	0.	3.	13.	28.	13.	10.	2.	0.	4.	4.	22.	28.
7	4	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	4.	0.	0.
7	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 2125 MISSING = 0 CALM = 0 VARIABLE = 72

TABLE 5-4

2ND QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 245 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM TAPE

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	2	0.	1.	1.	1.	1.	1.	0.	1.	4.	2.	0.	0.	2.	0.	0.	1.
1	3	0.	1.	0.	1.	0.	1.	0.	5.	3.	4.	0.	2.	1.	1.	1.	4.
1	4	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	0.	2.	2.	2.	3.	2.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	4.	1.	1.	1.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	3.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
3	3	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
3	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
4	2	3.	1.	3.	2.	2.	3.	8.	7.	4.	5.	12.	5.	1.	6.	3.	3.
4	3	10.	29.	2.	2.	3.	4.	6.	17.	22.	5.	5.	11.	11.	6.	8.	5.
4	4	6.	4.	1.	3.	2.	2.	3.	11.	9.	21.	9.	11.	5.	4.	3.	4.
4	5	0.	0.	0.	0.	0.	1.	0.	0.	5.	9.	13.	5.	6.	4.	6.	1.
4	6	0.	0.	0.	0.	0.	0.	0.	1.	1.	4.	3.	6.	2.	0.	3.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	1.	5.	0.	0.	0.	0.	2.	0.
5	1	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.
5	2	14.	7.	3.	2.	4.	5.	6.	9.	13.	8.	3.	3.	4.	6.	10.	13.
5	3	27.	20.	6.	10.	8.	12.	20.	32.	32.	35.	23.	25.	18.	19.	11.	22.
5	4	7.	7.	5.	4.	3.	4.	11.	12.	28.	37.	31.	16.	11.	17.	27.	32.
5	5	2.	0.	1.	1.	0.	2.	14.	5.	12.	21.	19.	10.	5.	24.	26.	10.
5	6	0.	0.	0.	0.	0.	0.	0.	0.	2.	4.	7.	4.	9.	6.	14.	1.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	4.	4.	9.	0.
6	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
6	2	2.	3.	1.	1.	2.	1.	3.	2.	2.	4.	6.	0.	2.	2.	6.	4.
6	3	5.	5.	3.	4.	5.	2.	1.	8.	17.	7.	7.	7.	6.	6.	12.	7.
6	4	2.	4.	0.	1.	0.	0.	1.	3.	10.	16.	14.	5.	10.	27.	16.	4.
6	5	0.	1.	0.	0.	0.	0.	1.	2.	8.	7.	14.	7.	5.	22.	18.	3.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	0.	1.	9.	15.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	3.	4.	0.
7	1	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
7	2	7.	4.	4.	2.	0.	1.	2.	6.	9.	5.	5.	11.	2.	1.	2.	6.
7	3	32.	19.	14.	11.	3.	4.	8.	10.	15.	13.	5.	6.	2.	6.	10.	24.
7	4	8.	3.	1.	2.	0.	0.	2.	4.	16.	7.	3.	3.	2.	8.	23.	16.
7	5	0.	0.	0.	0.	0.	0.	0.	3.	2.	2.	3.	0.	0.	7.	3.	1.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	4.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	0.	0.

TOTAL NUMBER OF HOURS
USED = 2141 MISSING = 0 CALM = 0 VARIABLE = 56

TABLE 5-5 3RD QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 33 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM ENVTREND

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	2	1.	0.	0.	1.	1.	2.	1.	1.	1.	1.	1.	1.	0.	0.	1.	0.
1	3	0.	0.	0.	0.	0.	2.	2.	2.	0.	1.	0.	0.	1.	0.	1.	2.
1	4	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
2	3	1.	0.	0.	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
3	3	0.	1.	1.	0.	0.	0.	1.	2.	0.	1.	0.	2.	1.	1.	0.	0.
3	4	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	1.	1.	2.	0.	1.	3.	1.	0.	0.	0.	1.	0.	0.	0.	2.	0.
4	2	8.	5.	5.	6.	14.	9.	6.	6.	6.	8.	4.	3.	7.	10.	6.	8.
4	3	18.	19.	16.	11.	5.	23.	19.	34.	20.	11.	6.	3.	4.	1.	7.	17.
4	4	20.	13.	2.	0.	0.	9.	4.	17.	20.	3.	6.	8.	5.	1.	4.	4.
4	5	3.	0.	0.	0.	0.	0.	1.	2.	3.	4.	2.	0.	4.	8.	5.	1.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	2.	6.	7.	3.	0.	0.	4.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1	0.	1.	0.	0.	2.	1.	0.	0.	1.	1.	0.	0.	0.	0.	1.	0.
5	2	3.	8.	6.	6.	5.	9.	8.	9.	8.	6.	3.	11.	8.	5.	5.	9.
5	3	17.	21.	14.	8.	8.	24.	20.	33.	28.	16.	10.	13.	7.	19.	13.	20.
5	4	10.	5.	16.	0.	6.	9.	10.	15.	29.	16.	5.	8.	16.	22.	23.	10.
5	5	1.	0.	1.	1.	0.	0.	2.	2.	5.	5.	10.	4.	17.	48.	26.	4.
5	6	1.	0.	0.	0.	0.	0.	0.	0.	0.	5.	4.	2.	1.	8.	8.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	2.	0.	0.	0.	0.	0.
6	1	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.
6	2	8.	9.	1.	1.	1.	9.	3.	9.	11.	8.	4.	5.	5.	5.	8.	10.
6	3	8.	8.	15.	0.	1.	15.	12.	25.	24.	17.	13.	5.	8.	11.	19.	16.
6	4	0.	1.	3.	0.	0.	9.	4.	12.	7.	1.	2.	2.	6.	19.	20.	3.
6	5	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	2.	0.	1.	0.	0.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	1.	0.	1.	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.	1.	0.	0.
7	2	14.	17.	21.	12.	6.	15.	8.	12.	4.	7.	8.	7.	6.	4.	6.	6.
7	3	24.	17.	13.	0.	0.	8.	7.	30.	17.	7.	2.	0.	4.	6.	5.	18.
7	4	2.	0.	2.	0.	0.	4.	1.	17.	4.	5.	1.	0.	0.	3.	3.	0.
7	5	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 2057 MISSING = 152

TABLE 5-6 3RD QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 245 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM ENVTREND

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	1.	0.	2.	2.	0.	0.	0.	0.	0.	0.
1	2	2.	0.	0.	0.	0.	1.	2.	1.	1.	0.	1.	0.	0.	0.	0.	1.
1	3	0.	0.	0.	0.	0.	0.	1.	2.	1.	0.	2.	0.	1.	1.	0.	3.
1	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.
2	2	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
3	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	3	1.	0.	1.	1.	0.	0.	0.	0.	2.	0.	1.	1.	2.	0.	1.	0.
3	4	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	1.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	3.	3.	2.	1.	0.	1.	2.	19.	8.	7.	3.	2.	5.	2.	5.	2.
4	2	4.	4.	5.	5.	4.	3.	14.	5.	4.	4.	4.	4.	4.	3.	5.	9.
4	3	16.	17.	11.	6.	7.	8.	11.	17.	21.	14.	5.	3.	2.	5.	2.	17.
4	4	6.	12.	10.	2.	0.	4.	2.	10.	24.	11.	4.	7.	7.	1.	1.	5.
4	5	4.	12.	1.	0.	1.	2.	0.	1.	7.	7.	2.	2.	3.	7.	4.	2.
4	6	1.	2.	0.	0.	0.	0.	0.	0.	1.	9.	5.	2.	0.	4.	6.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.	1.	1.	0.	3.	0.
5	1	1.	1.	2.	2.	2.	1.	7.	7.	6.	2.	0.	2.	2.	4.	5.	2.
5	2	2.	4.	3.	2.	2.	1.	1.	3.	6.	4.	6.	5.	1.	2.	4.	6.
5	3	10.	12.	7.	8.	7.	8.	7.	17.	20.	16.	6.	7.	2.	9.	12.	9.
5	4	12.	7.	14.	12.	3.	8.	14.	7.	17.	21.	9.	7.	10.	18.	10.	9.
5	5	10.	5.	6.	6.	1.	0.	3.	3.	18.	25.	6.	5.	11.	17.	13.	8.
5	6	1.	0.	1.	2.	0.	2.	0.	1.	4.	4.	12.	1.	9.	23.	25.	2.
5	7	3.	0.	0.	0.	0.	0.	0.	0.	0.	5.	9.	6.	12.	13.	36.	5.
6	1	0.	2.	2.	1.	0.	0.	2.	4.	4.	3.	0.	2.	2.	3.	7.	4.
6	2	4.	2.	0.	1.	2.	1.	3.	1.	5.	2.	2.	4.	5.	3.	1.	1.
6	3	11.	8.	2.	4.	4.	3.	1.	4.	7.	5.	10.	3.	4.	9.	6.	6.
6	4	7.	4.	5.	5.	1.	2.	2.	3.	19.	11.	5.	6.	8.	14.	7.	5.
6	5	4.	3.	1.	3.	0.	0.	0.	5.	9.	7.	3.	2.	3.	13.	13.	13.
6	6	0.	0.	0.	0.	0.	0.	0.	1.	1.	2.	1.	1.	1.	14.	7.	2.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	2.	0.	7.	8.	1.
7	1	3.	3.	1.	2.	4.	1.	1.	5.	8.	3.	4.	0.	6.	2.	1.	3.
7	2	2.	1.	3.	3.	1.	1.	4.	2.	4.	5.	3.	4.	1.	0.	2.	1.
7	3	19.	10.	10.	11.	7.	5.	6.	14.	10.	10.	8.	4.	1.	4.	3.	9.
7	4	7.	3.	5.	3.	0.	1.	1.	14.	13.	16.	5.	3.	1.	3.	10.	13.
7	5	2.	0.	1.	1.	0.	0.	0.	2.	5.	7.	1.	0.	0.	7.	10.	3.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.

TOTAL NUMBER OF HOURS
USED = 2057 MISSING = 152

TABLE 5-7

4TH QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 33 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM TAPE

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
1	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	3.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	2	4.	4.	1.	0.	0.	0.	2.	1.	4.	0.	3.	0.	1.	1.	6.	4.
4	3	8.	7.	3.	0.	0.	0.	0.	7.	1.	1.	3.	0.	3.	3.	20.	21.
4	4	2.	0.	0.	0.	0.	0.	0.	1.	8.	2.	0.	0.	0.	6.	15.	5.
4	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	2.	0.	0.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1	0.	0.	0.	1.	2.	1.	0.	0.	3.	3.	1.	1.	1.	0.	2.	1.
5	2	23.	27.	13.	9.	1.	4.	5.	17.	24.	14.	24.	15.	16.	29.	38.	45.
5	3	26.	23.	21.	6.	0.	0.	17.	54.	46.	18.	12.	8.	9.	33.	71.	40.
5	4	6.	0.	0.	0.	0.	0.	0.	9.	36.	17.	7.	7.	5.	14.	19.	13.
5	5	0.	0.	0.	0.	0.	0.	0.	0.	1.	8.	3.	0.	0.	4.	3.	0.
5	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.
6	2	23.	14.	8.	3.	2.	1.	3.	10.	12.	17.	9.	12.	24.	40.	49.	33.
6	3	6.	10.	7.	1.	0.	0.	9.	54.	37.	12.	11.	13.	14.	29.	31.	7.
6	4	0.	0.	0.	0.	0.	0.	3.	9.	9.	12.	3.	1.	1.	11.	4.	4.
6	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
7	2	22.	16.	12.	0.	0.	0.	3.	7.	7.	13.	17.	10.	15.	16.	49.	49.
7	3	4.	3.	2.	0.	0.	0.	2.	24.	31.	10.	11.	4.	4.	21.	27.	17.
7	4	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
7	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 1977 MISSING = 0 CALM = 1 VARIABLE = 42

TABLE 5-8

4TH QTR 1992 JOINT FREQUENCY DISTRIBUTION FOR THE 245 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM TAPE

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
1	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	2.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	2	5.	3.	0.	0.	0.	0.	0.	3.	3.	0.	1.	1.	1.	4.	4.	0.
4	3	8.	7.	3.	0.	0.	0.	1.	4.	1.	1.	1.	1.	1.	1.	13.	12.
4	4	2.	1.	0.	0.	0.	0.	0.	0.	9.	3.	0.	0.	1.	9.	18.	12.
4	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.	0.	0.	5.	8.	1.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5	1	3.	1.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	1.	1.	1.	2.
5	2	22.	29.	13.	3.	1.	4.	7.	7.	20.	13.	16.	10.	11.	17.	19.	35.
5	3	23.	27.	27.	7.	0.	1.	8.	38.	36.	27.	12.	3.	12.	23.	47.	44.
5	4	7.	4.	2.	0.	0.	0.	3.	10.	45.	38.	8.	2.	6.	32.	43.	22.
5	5	2.	0.	0.	0.	0.	0.	0.	0.	2.	13.	9.	6.	3.	14.	9.	2.
5	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	4.	0.	0.	0.	0.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
6	1	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.
6	2	32.	14.	4.	2.	0.	3.	5.	7.	9.	15.	10.	5.	12.	8.	15.	24.
6	3	20.	16.	8.	2.	0.	2.	4.	18.	24.	19.	7.	7.	12.	22.	27.	16.
6	4	1.	1.	1.	0.	0.	0.	4.	17.	36.	17.	11.	9.	7.	17.	20.	10.
6	5	0.	0.	0.	0.	0.	0.	0.	0.	3.	12.	6.	1.	2.	17.	2.	1.
6	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	2	10.	9.	4.	2.	5.	6.	2.	8.	8.	6.	9.	6.	7.	11.	10.	9.
7	3	12.	10.	7.	2.	2.	1.	7.	20.	15.	12.	13.	13.	15.	11.	28.	25.
7	4	0.	1.	1.	0.	0.	0.	0.	11.	9.	8.	6.	3.	11.	13.	33.	5.
7	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.	1.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 2001 MISSING = 0 CALM = 4 VARIABLE = 15

TABLE 5-9 1992 ANNUAL JOINT FREQUENCY DISTRIBUTION FOR THE 33 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM ENVTREND

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
1	2	4.	2.	0.	1.	1.	3.	4.	5.	5.	4.	7.	7.	8.	13.	10.	8.
1	3	4.	2.	0.	0.	0.	3.	8.	13.	1.	1.	3.	1.	7.	18.	12.	8.
1	4	0.	1.	0.	0.	0.	0.	3.	5.	1.	0.	1.	1.	3.	6.	7.	0.
1	5	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.	4.	2.	0.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
2	3	1.	0.	0.	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	2	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
3	3	0.	1.	1.	0.	0.	0.	1.	2.	0.	1.	0.	2.	1.	1.	1.	1.
3	4	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	1.	0.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	1.	1.	2.	0.	2.	4.	2.	3.	0.	0.	1.	1.	0.	0.	4.	0.
4	2	12.	15.	13.	12.	17.	17.	12.	8.	11.	11.	7.	4.	8.	14.	15.	13.
4	3	31.	32.	19.	11.	7.	27.	28.	46.	24.	12.	10.	3.	6.	8.	14.	24.
4	4	32.	21.	3.	0.	0.	9.	9.	22.	29.	6.	14.	10.	11.	5.	8.	9.
4	5	4.	0.	0.	0.	0.	0.	1.	5.	16.	14.	7.	1.	7.	16.	8.	9.
4	6	0.	0.	0.	0.	0.	0.	0.	0.	3.	10.	9.	12.	1.	0.	5.	0.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
5	1	2.	3.	2.	2.	3.	1.	3.	5.	4.	4.	6.	1.	1.	3.	4.	6.
5	2	48.	55.	35.	43.	25.	34.	49.	37.	37.	34.	52.	46.	52.	48.	75.	74.
5	3	109.	117.	70.	33.	20.	53.	109.	165.	112.	66.	42.	38.	51.	99.	145.	127.
5	4	48.	26.	33.	1.	6.	23.	51.	104.	116.	67.	42.	19.	39.	82.	106.	70.
5	5	7.	0.	1.	1.	0.	1.	8.	12.	58.	50.	33.	15.	25.	104.	79.	19.
5	6	1.	0.	0.	0.	0.	0.	0.	0.	7.	23.	20.	4.	7.	23.	24.	0.
5	7	0.	0.	0.	0.	0.	0.	0.	0.	2.	4.	2.	0.	0.	1.	4.	0.
6	1	1.	3.	6.	0.	1.	1.	0.	0.	5.	0.	3.	2.	1.	0.	5.	7.
6	2	24.	31.	14.	9.	10.	18.	19.	28.	29.	29.	16.	35.	29.	40.	51.	46.
6	3	46.	60.	37.	4.	2.	20.	37.	88.	89.	41.	36.	28.	41.	78.	126.	74.
6	4	0.	3.	4.	0.	0.	13.	25.	90.	40.	27.	11.	10.	25.	74.	49.	13.
6	5	0.	0.	0.	0.	0.	0.	3.	12.	11.	12.	2.	4.	3.	17.	4.	0.
6	6	0.	0.	0.	0.	0.	0.	0.	1.	7.	3.	1.	0.	0.	0.	0.	0.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	1	3.	0.	2.	0.	0.	2.	3.	1.	2.	7.	1.	2.	1.	4.	0.	1.
7	2	57.	60.	49.	20.	15.	24.	14.	39.	22.	26.	28.	20.	19.	24.	42.	49.
7	3	54.	57.	33.	2.	0.	12.	28.	68.	34.	24.	8.	2.	9.	38.	81.	97.
7	4	3.	0.	2.	0.	0.	4.	6.	44.	16.	9.	2.	0.	1.	12.	19.	9.
7	5	0.	0.	0.	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.	1.	0.	0.
7	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL NUMBER OF HOURS
USED = 7529 MISSING = 1256

TABLE 5-10

1992 ANNUAL JOINT FREQUENCY DISTRIBUTION FOR THE 245 FT LEVEL
CALCULATED FROM HOURLY AVERAGES FROM ENVIRENDD

MAXIMUM WIND SPEEDS FOR EACH CATEGORY IN MPH ARE:
1 - 0.6 2 - 3.0 3 - 7.0 4 - 12.0 5 - 18.0 6 - 24.0

NUMBERS GIVEN ARE HOURS

STAB CLASS	WIND CAT	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
1	1	9.	5.	4.	0.	0.	3.	7.	5.	15.	9.	2.	4.	4.	24.	26.	13.
1	2	2.	0.	0.	0.	0.	1.	6.	5.	1.	0.	1.	0.	0.	8.	0.	2.
1	3	0.	1.	0.	1.	0.	1.	1.	4.	3.	1.	2.	0.	2.	1.	0.	4.
1	4	0.	1.	0.	0.	0.	0.	0.	1.	2.	1.	0.	2.	1.	0.	3.	1.
1	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.	2.	0.
1	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.
1	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.	0.
2	1	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	1.
2	2	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
2	3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
2	4	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
2	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
3	2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3	3	1.	0.	1.	1.	0.	0.	0.	0.	2.	0.	1.	1.	2.	0.	1.	0.
3	4	1.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
3	5	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.	1.	0.
3	6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.
3	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4	1	6.	5.	2.	2.	0.	1.	2.	20.	9.	8.	5.	2.	5.	3.	12.	6.
4	2	9.	9.	7.	7.	9.	4.	26.	12.	8.	6.	13.	5.	7.	4.	8.	12.
4	3	23.	27.	14.	9.	12.	9.	12.	23.	28.	15.	6.	4.	5.	6.	7.	21.
4	4	15.	26.	11.	3.	0.	6.	5.	21.	30.	12.	7.	12.	10.	6.	4.	7.
4	5	6.	14.	2.	0.	1.	2.	1.	3.	19.	16.	7.	4.	4.	12.	8.	9.
4	6	1.	2.	0.	0.	0.	0.	0.	0.	4.	11.	13.	5.	4.	8.	12.	3.
4	7	0.	0.	0.	0.	0.	0.	0.	0.	1.	10.	6.	7.	1.	0.	4.	0.
5	1	38.	27.	28.	11.	9.	10.	43.	62.	30.	16.	9.	15.	23.	17.	62.	38.
5	2	34.	37.	17.	16.	16.	13.	25.	33.	36.	46.	30.	16.	14.	11.	29.	34.
5	3	64.	73.	70.	26.	26.	21.	42.	82.	77.	66.	31.	17.	28.	41.	68.	78.
5	4	63.	53.	45.	30.	9.	19.	31.	75.	97.	83.	40.	27.	26.	63.	97.	66.
5	5	22.	11.	7.	8.	1.	0.	12.	17.	88.	90.	36.	18.	27.	68.	69.	53.
5	6	4.	0.	2.	2.	0.	3.	9.	4.	17.	27.	43.	11.	15.	56.	61.	13.
5	7	3.	0.	0.	0.	0.	0.	3.	0.	6.	30.	29.	15.	24.	44.	74.	6.
6	1	13.	18.	9.	7.	3.	1.	12.	18.	22.	19.	11.	5.	12.	32.	36.	26.
6	2	22.	8.	5.	7.	7.	7.	10.	20.	26.	24.	18.	9.	8.	10.	20.	20.
6	3	50.	67.	23.	11.	10.	5.	4.	27.	39.	25.	28.	17.	21.	23.	31.	30.
6	4	19.	16.	11.	6.	3.	6.	11.	27.	54.	36.	14.	22.	21.	40.	55.	32.
6	5	6.	5.	4.	4.	0.	0.	2.	20.	42.	31.	15.	6.	14.	58.	57.	29.
6	6	0.	1.	0.	0.	0.	0.	1.	4.	12.	20.	14.	4.	4.	39.	17.	3.
6	7	0.	0.	0.	0.	0.	0.	0.	0.	1.	4.	5.	3.	4.	28.	23.	1.
7	1	9.	10.	5.	4.	11.	2.	5.	11.	15.	13.	10.	4.	8.	10.	21.	15.
7	2	9.	7.	12.	10.	5.	11.	9.	13.	22.	15.	10.	13.	3.	4.	17.	11.
7	3	40.	32.	30.	35.	14.	14.	20.	45.	49.	28.	19.	19.	15.	16.	14.	34.
7	4	23.	11.	16.	21.	1.	2.	3.	29.	31.	28.	13.	8.	6.	4.	46.	47.
7	5	3.	0.	4.	3.	0.	0.	0.	11.	14.	15.	3.	0.	2.	16.	49.	21.
7	6	0.	0.	0.	0.	0.	0.	0.	2.	2.	0.	1.	0.	0.	11.	9.	1.
7	7	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.	2.	0.

TOTAL NUMBER OF HOURS
USED = 7509 MISSING = 1276

6.0 DOSE ASSESSMENT IMPACT ON MAN

Liquid Effluents - The doses to the maximum individual from WNP-2 liquid effluents were calculated using the NRC LADTAP II computer code and the site specific input parameters.

Table 6-1 lists the doses to the maximum individual by calendar quarter along with the cumulative total body and maximum organ values. Doses by calendar quarters to the average exposed individual are listed in Table 6-2. The 50-mile population doses by calendar quarters are listed in Table 6-3. Table 6-4 provides annual dosages to the average individual and 50-mile population doses from liquid effluents. All doses were calculated using the NRC LADTAP II computer code.

An evaluation of the nearest orchard (approximately 3 miles downstream) using Columbia River water for its irrigation showed an adult total body dose value of 8.8E-05 mrem/yr, thyroid dose of 3.7E-06 mrem/yr and an organ dose value of 1.5E-04 mrem/yr. The population doses at this location showed a total body value of 2.3E-04 person-rem, thyroid dose of 2.4E-07 person-rem and an organ value of 4.0E-04 person-rem.

Gaseous Effluents - The NRC GASPAR II computer code was used to calculate doses at and beyond the site boundary. Table 6-5 furnishes a summary of quarterly air and organ doses. It also provides the annual total body and skin doses at and beyond the site boundary. Table 6-6 lists the annual 50-mile dose using values obtained from the ALARA annual integrated population dose summary (person-rem). Table 6-6 also provides the annual individual doses associated with each pathway. These values were obtained by dividing the ALARA integrated dose (person-rem) by the 50-mile population (252,356 for year 1987) and converting to mrem. The GASPAR II runs utilized quarterly and annual meteorological data and site specific input parameters.

6.1 Exposure to "A Member of the Public"

The WNP-2 Visitor Center was evaluated for assessment of radiation doses to "Members of the Public" due to their activities within the site boundary. The ODCM assumes an eight (8) hour per year occupancy by "A Member of the Public" at the Visitor Center. The dose assessment resulted in an annual calculated total body dose of 7.7E-04 mrem. The annual thyroid dose was 2.6E-03 mrem and the maximum dose to any other organ was 8.4E-04 mrem. The air dose contribution was as follows; Beta air dose was 2.3E-03 mrad and the Gamma air dose was 3.2E-03 mrad. The direct radiation contribution from TLD results calculated to an average of 1.7E-01 mrem per eight hour period.

The annual assessment of radiation doses to the most likely exposed "Member of the Public" to show conformance with 40CFR Part 190 is assumed to be located in the Taylor Flats vicinity (6.4 miles in a Southeasterly direction). The NRC GASPAR II computer code with annual source terms and XOQDOQ meteorological data was used to obtain the dose assessment from gaseous effluents. It is assumed there is no dose contribution from liquid effluents at this location. The assessment of the maximum age group resulted in annual calculated total body dose of 2.8E-03 mrem. The annual thyroid dose was 2.9E-02 mrem and the maximum dose to any other organ was 3.8E-03 mrem. Exposure pathways were ground, meat, cow milk and inhalation. The air dose contribution was as follows; Beta air dose was 3.1E-03 mrad/yr and the Gamma air dose was 2.2E-03 mrad/yr.

An annual assessment of radiation doses to a "Member of the Public" was also made at a location in the vicinity of 4.5 miles east southeast. This location receives irrigation water from the Columbia River as mentioned in paragraph 6.0 above. The annual GASPAR II computer run resulted in a child total body dose of 6.7E-03 mrem. The annual child age group thyroid dose was 3.1E-02 mrem and the maximum dose to any other organ for the child age group was 8.6E-03 mrem. The annual Beta air dose was 4.8E-03 mrad and the Gamma air dose was 3.5E-03 mrad. The annual dose contribution due to liquid releases using vegetation from the irrigated food pathway and the child age group in the NRC LADTAP II computer run showed a total body dose of 1.4E-04 mrem. The annual thyroid dose was 1.1E-05 mrem and the maximum dose to any other organ was 3.4E-04 mrem.

The direct radiation contribution showed no significant amount above normal background. The 1992 average TLD summary was 94 mrem per year.

Table 6-1

MAXIMUM INDIVIDUAL DOSES FROM WNP-2 LIQUID EFFLUENTS

1ST AND 2ND QUARTERS 1992

First Quarter 1992				
Pathway	Total Body (mrem/qtr)	1992 Cumulative Total Body (mrem/yr)	Max. Organ (mrem/qtr)	1992 Cumulative Max. Organ (mrem/yr)
Fishing	6.4E-03	6.4E-03	9.1E-03	9.1E-03
Drinking	1.4E-06	1.4E-06	1.8E-06	1.8E-06
Shoreline	3.4E-06	3.4E-06	4.0E-06	4.0E-06
Swimming	6.2E-09	6.2E-09	6.2E-09	6.2E-09
Boating	6.9E-07	6.9E-07	6.9E-07	6.9E-07
Vegetables	5.8E-06	5.8E-06	8.0E-06	8.0E-06
Leafy Veg.	2.4E-06	2.4E-06	3.2E-06	3.2E-06
Milk	3.5E-06	3.5E-06	5.2E-06	5.2E-06
Meat	3.8E-07	3.8E-07	5.5E-07	5.5E-07
Total	6.4E-03	6.4E-03	9.1E-03	9.1E-03

Second Quarter 1992				
Pathway	Total Body (mrem/qtr)	1992 Cumulative Total Body (mrem/yr)	Max. Organ (mrem/qtr)	1992 Cumulative Max. Organ (mrem/yr)
Fishing	2.5E-02	3.1E-02	2.8E-02	3.7E-02
Drinking	6.6E-06	8.0E-06	1.2E-05	1.4E-05
Shoreline	4.6E-05	4.9E-05	5.4E-05	5.8E-05
Swimming	7.8E-08	8.4E-08	7.8E-08	8.4E-08
Boating	8.6E-06	9.3E-06	8.6E-06	9.3E-06
Vegetables	2.8E-05	3.4E-05	5.1E-05	5.9E-05
Leafy Veg.	1.1E-05	1.3E-05	2.1E-05	2.4E-05
Milk	1.8E-05	2.2E-05	3.1E-05	3.6E-05
Meat	3.0E-06	3.4E-06	8.8E-06	9.3E-06
Total	2.5E-02	3.2E-02	2.8E-02	3.7E-02

Table 6-1

MAXIMUM INDIVIDUAL DOSES FROM WNP-2 LIQUID EFFLUENTS[1]

3RD AND 4TH QUARTERS 1992

Third Quarter 1992				
Pathway	Total Body (mrem/qtr)	1992 Cumulative Total Body (mrem/yr)	Max. Organ (mrem/qtr)	1992 Cumulative Max. Organ (mrem/yr)
Fishing	1.6E-03	3.3E-02	2.7E-03	4.0E-02
Drinking	2.9E-06	1.1E-05	3.7E-06	1.7E-05
Shoreline	5.0E-06	5.4E-05	5.9E-06	6.4E-05
Swimming	8.4E-09	9.3E-08	8.4E-09	9.3E-08
Boating	9.3E-07	1.0E-05	9.3E-07	1.0E-05
Vegetables	4.0E-06	3.8E-05	7.7E-06	6.7E-05
Leafy Veg.	1.1E-06	1.5E-05	2.8E-04	2.7E-05
Milk	1.9E-06	2.3E-05	3.1E-05	3.9E-05
Meat	5.7E-07	4.0E-06	1.4E-06	1.1E-05
Total	1.6E-03	3.3E-02	2.7E-03	4.0E-02

Fourth Quarter 1992				
Pathway	Total Body (mrem/qtr)	1992 Cumulative Total Body (mrem/yr)	Max. Organ (mrem/qtr)	1992 Cumulative Max. Organ (mrem/yr)
Fishing	4.0E-04	3.4E-02	6.6E-04	4.0E-02
Drinking	1.5E-06	1.3E-05	1.7E-06	1.9E-05
Shoreline	1.2E-06	5.6E-05	1.4E-06	6.5E-05
Swimming	2.2E-09	9.5E-08	2.2E-09	9.5E-08
Boating	2.5E-07	1.0E-05	2.5E-07	1.0E-05
Vegetables	1.5E-06	4.0E-05	2.3E-06	6.9E-05
Leafy Veg.	3.3E-07	1.5E-05	6.9E-07	2.8E-05
Milk	6.5E-07	2.4E-05	9.8E-07	4.0E-05
Meat	1.8E-07	4.2E-06	3.5E-07	1.1E-05
Total	4.1E-04	3.4E-02	6.7E-04	4.0E-02

(1) Age Group - Adult: Maximum individual resides at Richland and fishes near the WNP-2 outfall area.

Table 6-2

AVERAGE INDIVIDUAL DOSES FROM WNP-2 LIQUID EFFLUENTS

1ST AND 2ND QUARTERS 1992

	Total per 1st Quarter		Total per 2nd Quarter	
Pathway	Total Body (mrem)	Max. Organ (mrem)	Total Body (mrem)	Max. Organ (mrem)
Fishing	2.1E-05	3.0E-05	8.1E-05	1.2E-04
Drinking	7.1E-07	9.3E-07	3.4E-06	6.1E-06
Shoreline	2.6E-07	3.0E-07	3.5E-06	4.1E-06
Swimming	1.4E-09	1.4E-09	1.7E-08	1.7E-08
Boating	3.4E-10	3.4E-10	4.3E-09	4.3E-09
Vegetables (a)	3.8E-08	7.5E-08	2.1E-07	3.4E-07
Leafy Veg. (a)	9.6E-07	1.3E-06	4.8E-06	8.6E-06
Milk (a)	1.9E-07	4.1E-07	1.2E-06	2.4E-06
Meat (a)	5.7E-08	9.2E-08	5.0E-07	1.2E-06
Total	2.3E-05	3.3E-05	9.5E-05	1.5E-04

3RD AND 4TH QUARTERS 1992

	Total per 3rd Quarter		Total per 4th Quarter	
Pathway	Total Body (mrem)	Max. Organ (mrem)	Total Body (mrem)	Max. Organ (mrem)
Fishing	5.3E-06	9.0E-06	1.3E-06	2.2E-06
Drinking	1.5E-06	1.9E-06	7.4E-07	8.4E-07
Shoreline	3.8E-07	4.5E-07	8.9E-08	1.0E-07
Swimming	1.9E-09	1.9E-09	4.9E-10	4.9E-10
Boating	4.7E-10	4.7E-10	1.2E-10	1.2E-10
Vegetables (a)	3.3E-08	5.2E-08	1.2E-08	1.7E-08
Leafy Veg. (a)	5.3E-07	1.1E-06	1.5E-07	2.9E-07
Milk (a)	1.3E-07	2.3E-07	4.5E-08	7.1E-08
Meat (a)	9.7E-08	2.1E-07	2.9E-08	5.0E-08
Total	8.0E-06	1.3E-05	2.4E-06	3.6E-06

(a) Values are obtained by dividing the total population ALARA dose by the total population served from irrigated production and converted to mrem.

Table 6-3

50-MILE POPULATION DOSES FROM WNP-2 LIQUID EFFLUENTS

1ST AND 2ND QUARTERS 1992

	Total per 1st Quarter		Total per 2nd Quarter	
Pathway	Total Body (per-rem)	Max. Organ (per-rem)	Total Body (per-rem)	Max. Organ (per-rem)
Fishing	4.1E-05	7.0E-05	1.6E-04	2.9E-04
Drinking	4.8E-05	8.0E-05	2.5E-04	4.0E-04
Shoreline	4.5E-05	5.3E-05	6.1E-04	7.2E-04
Swimming	2.4E-07	2.4E-07	3.0E-06	3.0E-06
Boating	6.0E-08	6.0E-08	7.6E-07	7.6E-07
Vegetables	3.8E-07	7.5E-07	2.1E-06	3.4E-06
Leafy Veg.	9.6E-06	1.3E-05	4.8E-05	8.6E-05
Milk	1.9E-06	3.9E-06	1.1E-05	2.3E-05
Meat	5.8E-07	9.3E-07	5.1E-06	1.2E-05
Total	1.5E-04	2.2E-04	1.1E-03	1.5E-03

3RD AND 4TH QUARTERS 1992

	Total per 3rd Quarter		Total per 4th Quarter	
Pathway	Total Body (per-rem)	Max. Organ (per-rem)	Total Body (per-rem)	Max. Organ (per-rem)
Fishing	1.1E-05	2.1E-05	2.7E-06	5.0E-06
Drinking	1.1E-04	1.4E-04	5.7E-05	6.2E-05
Shoreline	6.7E-05	7.8E-05	1.6E-05	1.8E-05
Swimming	3.3E-07	3.3E-07	8.7E-08	8.7E-08
Boating	8.2E-08	8.2E-08	2.2E-08	2.2E-08
Vegetables	3.3E-07	5.2E-07	1.2E-07	1.7E-07
Leafy Veg.	5.3E-06	1.1E-05	1.5E-06	2.9E-06
Milk	1.2E-06	2.2E-06	4.3E-07	6.8E-07
Meat	9.8E-07	2.1E-06	2.9E-07	5.0E-07
Total	2.0E-04	2.6E-04	7.8E-05	8.9E-05

Table 6-4

ANNUAL LADTAP II RESULTS FOR 1992

A. AVERAGE INDIVIDUAL DOSES FROM WNP-2 LIQUID EFFLUENTS

For Annual of 1992		
Pathway	Total Body (mrem)	Max. Organ (mrem)
Fishing	1.1E-04	1.7E-04
Drinking	3.6E-06	6.6E-06
Shoreline	4.2E-06	4.9E-06
Swimming	2.1E-08	2.1E-08
Boating	5.3E-09	5.3E-09
Vegetables (a)	2.6E-07	4.5E-07
Leafy Veg. (a)	6.3E-06	9.9E-06
Milk (a)	1.5E-06	3.0E-06
Meat (a)	6.2E-07	1.5E-06
Total	1.3E-04	1.9E-04

B. 50-MILE POPULATION DOSES FROM WNP-2 LIQUID EFFLUENTS

For Annual of 1992		
Pathway	Total Body (Per-Rem)	Max. Organ (Per-Rem)
Fishing	2.2E-04	3.9E-04
Drinking	2.6E-04	4.3E-04
Shoreline	7.4E-04	8.7E-04
Swimming	3.7E-06	3.7E-06
Boating	9.3E-07	9.3E-07
Vegetables	2.6E-06	4.5E-06
Leafy Veg.	6.3E-05	9.9E-05
Milk	1.4E-05	2.9E-05
Meat	6.3E-06	1.5E-05
Total	1.3E-03	1.8E-03

(a) Values are obtained by dividing the total population ALARA dose by the total population served from irrigated production and converted to mrem.

Table 6-5

SUMMARY OF DOSES FROM WNP-2 GASEOUS EFFLUENTS

1992

(1)
Location: 1.2 miles site boundary
Reporting Period: Calendar Quarters Plus Annual Cumulative, 1992

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Annual Cumulative
Beta air dose (mrad)*	5.7E-02	8.5E-04	3.0E-02	1.9E-02	1.1E-01
Gamma air dose (mrad)*	3.9E-02	6.4E-04	5.3E-02	2.6E-02	1.2E-01

(2)
Location: Beyond Site Boundary 4.1 miles ESE
Reporting Period: Calendar Quarters Plus Annual Cumulative, 1992

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Annual Cumulative
Beta air dose (mrad)*	1.3E-02	7.7E-05	2.8E-03	2.4E-03	1.8E-02
Gamma air dose (mrad)*	9.9E-03	7.1E-05	5.1E-03	3.2E-03	1.8E-02

(3)
Location: Site Boundary
Reporting Period: Annual

Annual Total Body Dose (mrem) = 1.6E-02
Annual Skin Dose (mrem) = 1.6E-02

(4)
Location: Beyond Site Boundary
Reporting Period: Annual

Annual Total Body Dose (mrem) = 7.9E-03
Annual Skin Dose (mrem) = 7.7E-03

Table 6-5 (continued)

(5)
Location: Site boundary location having the highest annual cumulative organ dose (ground and inhalation).

Reporting Period: Calendar Quarters Plus Annual Cumulative, 1992

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Annual Cumulative
Maximum organ dose (mrem)**	5.8E-02	1.6E-02	1.6E-02	4.8E-02	1.4E-01

(6)
Location: The typical sampling location having the highest annual cumulative organ dose based on Land Use Census. 4.1 miles ESE (ground, vegetables, and inhalation pathways).

Reporting Period: Calendar Quarters Plus Annual Cumulative, 1992

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Annual Cumulative
Maximum organ dose (mrem)**	1.8E-02	6.0E-03	6.1E-03	1.1E-02	4.1E-02

* ODCM Requirement For Operability 6.2.2.2.
** ODCM Requirement For Operability 6.2.2.3.

Table 6-6

A. 50-MILE POPULATION DOSES FROM 1992 GASEOUS EFFLUENTS

Exposure Pathway	Total Body (Person-Rem)	Max. Organ (Person-Rem)
Plume	2.6E-02	8.3E-02
Ground	5.9E-03	6.9E-03
Inhalation	4.0E-02	2.1E-01
Vegetables	3.6E-02	3.7E-02
Milk	1.3E-02	4.5E-02
Meat	7.8E-03	9.6E-03
Total	1.3E-01	4.0E-01

B. AVERAGE INDIVIDUAL DOSES FROM 1992 GASEOUS EFFLUENTS(a)

Population => 2.5E+05

Exposure Pathway	Total Body (mrem)	Max. Organ (mrem)
Plume	1.0E-04	3.3E-04
Ground	2.3E-05	2.8E-05
Inhalation	1.6E-04	8.5E-04
Vegetables	1.4E-04	1.5E-04
Milk	5.0E-05	1.8E-04
Meat	3.1E-05	3.8E-05
Total	5.1E-04	1.6E-03

(a) The 50 mile population doses divided by the population within 50 miles of the Plant by direction and radii interval and converted to mrem.

7.0 REVISIONS TO THE ODCM

During this reporting period Amendments number 11 and 12 to the Offsite Dose Calculation Manual (ODCM) were reviewed and approved by the Plant Operations Committee (POC).

7.1 This rationale is intended to provide sufficient information to support the changes made to the WNP-2 Offsite Dose Calculation Manual (ODCM) for Amendments 11 and 12.

SCN NUMBER 92-045:

Description of Change	Reason for Change
Page 4, Section 2.3.2; Change restricted to unrestricted.	Radionuclide concentrations are determined at unrestricted areas, not within restricted areas. This was a typographical error.
Page 6: The delta τ ℓ should read delta τ sub ℓ, $\Delta\tau_\ell$ and τ should be at the same level as i, $A_{i\tau}$.	To correct typographical errors.
Page 7: For the definition of K_o. The conversion factor should read; 10^6 pCi/μCi and a division (/) sign prior to 8760. BF_i and DF_i changed with i subscripts. Aiτ should read $A_{i\tau}$; τ at same level as i.	To correct typographical errors and the K_o conversion factor definition.
Page 8, add τ to the DF definition to read organ "τ, in" (mrem/pCi); changed number of calculation log and also reflect Radiological Health. Section 2.4.1: Add "or LADTAP II" to first sentence	LADTAP II can be used in lieu of equation 5 for dose evaluations as well as projections. Calculation log update to reflect most recent changes and organizational changes.
Page 10: Change MCP_f to MPC_f.	To correct typographical error.
Page 18: This particular Radiological Program Instruction is now a Radiological Health Instruction.	To reflect organizational change and update Calculation Log.

SCN NUMBER: 92-045 (Continued)

Description of Change	Reason for Change
Page 31: The river dilution factor for the boating and aquatic food is changed from 2,000 to 500.	The "near field" dilution with the "applicable factor" of 500 is used in the ODCM for calculating the dose commitment for aquatic food using the NUREG-0133 methodology. For the NRC LADTAP II computer code which uses NUREG/CR-4013, "LADTAP II Technical Reference and User Guide," a dilution factor of 2,000 was an assumption due to the large flowrates in the Columbia River and assumed locations where fish may be caught. The use of the two different dilutions, when applied to fish, would produce a factor of four (4) difference in the dose calculations. the dilution factor for LADTAP II input for aquatic food and the applicable factor for the near field dilution will both use 500. The average discharge structure exit flow rate used will be two (2) cubic feet per second (cfs). Therefore, the product of the average blowdown flow to the Columbia River, in cfs, and the applicable factor will be 1000 cfs, as per NUREG-0133. The average discharge structure flowrate is the total blowdown flow for the periods of each semiannual report (i.e., each calendar quarter). The use of average flowrate was a concern to the NRC contractor, EG&G Idaho, Inc. NUREG-0133 specifies an <u>average</u> blowdown flow can be used.

SCN NUMBER: 92-045 (Continued)

Description of Change	Reason for Change
Page 34, Section 3.0: Added explanation on method for estimating the dose to the maximum organ for any age group.	As a result of the NRC contractor's review of the ODCM, through amendment number 8, it was mentioned that the Supply System be aware the ODCM methodology used to calculate maximum organ doses due to gaseous effluents yields conservative values. This explanation clarifies the methods used and the conservatism is recognized.
Page 51: Added locations, Tables 3-5a through 3-5d, to provide R^c_i dose parameter pathways. Deleted the reference to R^m_i and Table 3-7.	It will provide a clearer understanding of where inputs for R^c_i may be found. The R^m_i input references served no purpose on page 51, as they are referenced on page 52.
Page 52: Added Tables 3-5a through 3-5d as locations where dose parameter inputs for R^m_i may be found.	Clarify the location for R^m_i input values.
Page 54: Added Tables 3-8 and Tables 3-5a through 3-5d as locations where dose parameter input values for equation 20 (R^Y_i) may be found	To define locations for necessary data input parameters.
Page 73: Changes the f_L input parameter from 1.0 to 0.42 and provided the reference used as Table 3-14.	This item was noted as an inconsistency by NRC contractor reviewer. This change will provide the same value for the fraction of the year that leafy vegetables are considered to be grown. Health Physics Instructions (HPI) 2.5 provides monthly, quarterly, and annual inputs for f_L
Page 85: Added Table 3-8 due to the change in the f_L input parameter which is located in Table 3-8.	It is necessary to add this table because when the input parameter was changed in Table 3-8, it demanded that Table 3-14 reflect the change.

SCN NUMBER: 92-045 (Continued)

Description of Change	Reason for Change
Page 136: Table 6.2.2.1.2-1 and Table of Contents (Page vii).	To correct typographical errors.

SCN NUMBER: 92-044

Description of Change	Reason for Change
Revision of Table 5-1 in Section 5.0 and Table 6.3.1.1-1 in Section 6.3 to be consistent with the fish sampling requirements of the Site Certification Agreement; reduce the fish sampling frequency to annual from semiannual and reduce the number of required species from four to three (one anadromous and two resident).	These revisions make the ODCM consistent with the Site Certification Agreement (Resolution No. 260, dated Jan. 13, 1992). The revision also reduces the level of effort routinely required to determine whether there has been an impact on the Columbia River fish from Plant 2 discharges. Electrofishing requires an intensive effort for 4-5 days in the spring and in the fall. Because of the fluctuating water levels on the Snake River, in particular, it has become very difficult to obtain three resident species, in addition to the anadromous species. The effort expended to fulfill the current requirements for frequency and number of samples is not justified by the results received. The fish sample results from the Snake River do not differ significantly from results from Columbia River fish. Cesium-137 is the only detectable radionuclide besides Potassium-40 (naturally occurring). The Cesium levels are comparable in both samples. This revision requires that if a significant increase occurs in the Columbia River results over the Snake River results, semiannual sampling of both rivers would resume.

SCN NUMBER: 92-027

Description of Change	Reason for Change
Section 6: 6.2.2.6; Change Revelant Conditions for drywell vents or purges to match Technical Specifications interpretation.	The interpretation was written for the Technical Specifications prior to implementation of NRC Generic Letter 89-01. This change incorporates that interpretation.

SCN NUMBER: 92-079

Description of Change	Reason for Change
Revision of Section 5.1 to include a reference to Figure 5-3; revision of Table 5-1 to include sampling locations ST101, 102, 118 and 59 and to remove ST61; revision of Table 5-2 to add ST101, 102, 118, and 59 and to remove ST61; addition of sanitation facility water as a sample category; the inclusion of Figures 5-1 and 5-2 and the addition of Figure 5-3 for near plant sampling locations.	These changes make the ODCM consistent with the current REMP plan and correct the omission of Figures 5-1 and 5-2 from the previous ODCM revision.

7.2 A determination has been made that these changes will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose or setpoint calculations.

7.3 Amendment 11 to the ODCM consisted of three separate SCNs which were reviewed and approved at POC meeting 92-033, dated August 12, 1992. Amendment 12 consisted of one SCN which was reviewed and approved at POC meeting 92-049, on December 2, 1992. Amendment 12 was issued in January 1993 but is included for this reporting period (July-December 1992).

SCN Numbers For Amendment 11:

92-027
92-044
92-045

SCN Number For Amendment 12:

92-079

7.4 This section addresses compliance with Technical Specification 6.14.c. A complete, legible copy of the entire ODCM is included as an enclosure to the letter transmitting this Radioactive Effluent Release Report. ODCMs are sent only to the Nuclear Regulatory Commission (NRC).

8.0 REVISIONS TO THE PROCESS CONTROL PROGRAM (PCP)

There have been no significant changes to the Process Control Program (PCP) during this reporting period.

9.0 NEW OR DELETED LOCATIONS FOR DOSE ASSESSMENTS AND/OR ENVIRONMENTAL MONITORING LOCATIONS

9.1 There were no new locations identified during this reporting period which required dose calculations as per the Land Use Census for 1992.

9.2 No additional environmental monitoring locations were added during this reporting period. Amendment 12 to the ODCM provides revised Figures and Tables to provide consistency with the current Radiological Environmental Monitoring Program (REMP). A complete copy of the ODCM has been included as per Section 7.4.

9.3 There were no environmental monitoring locations deleted during this reporting period.

10.0 MAJOR CHANGES TO RADIOACTIVE LIQUID, GASEOUS AND SOLID WASTE TREATMENT SYSTEMS

No major changes were made to the radioactive waste systems (liquid, gaseous, or solid) during this reporting period.