



EPS-88-233

PAUL M. SUGARMAN
Secretary

STATE OF WASHINGTON
DEPARTMENT OF SOCIAL AND HEALTH SERVICES

Olympia, Washington 98504-0095

October 19, 1988

Gregory P. Yuhas, Branch Chief
Emergency Preparedness and Radiological
Protection Branch
U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

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RECEIVED
NRC
REGION V

Dear Mr. Yuhas:

As per the requirements of contract NRC-32-83-682, we are submitting this annual report for the 1987 calendar year comparing the analytical results from our state laboratory to the licensee's results for split/parallel environmental monitoring. Also included with this report are quality assurance results and a record of the services rendered during each calendar quarter of 1987.

If you have any questions or concerns, please call me at (206) 586-3303.

Sincerely,

Robert R. Mooney

Robert R. Mooney, Head
Environmental Protection Section
Office of Radiation Protection

RRM/CL/db

Enclosure

8905240080 890512
PDR ADOCK 05000397
R PDC

State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Description of Services Rendered

Location of Facility
WNP-2 Handord Reservation

Reporting Period
January - March 1987
1st Quarter

No. Samples	Sample Type	Analyses Performed				No. Analyses
		Gross	Gamma	Tritium	I-131	
	Air Particulate	26	2			28
	Radioiodine	0	0		26	26
	TLDs	0	0	0	0	0
	Water	6	6	6	0	18
	Sediment	0	0	0	0	0
	Milk	0	3	0	3	6
	Food Products	0	0	0	0	0
	Fish	0	0	0	0	0

Man Hours Expended:

Field Sampling.....Hours
Analytical Services.....Hours
Quality Assurance.....Hours
Administration.....Hours



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
Ingestion: Milk	Split	Station 36	01/13/87	K-40 1.32 E03 ± 0.05 E03	no data
				I-131 <7. E-01	* -1.5E-01 ± 1.60E-01
				Cs-134 5.5 E00 ± 1.8 E00	7.31E+00 ± 3.82E+00
				Cs-137 8.1 E00 ± 1.8 E00	1.92E+01 ± 4.40E+00
				Ba-140 <7. E00	* -8.70E+00 ± 1.00E+01
			02/10/87	K-40 1.42 E03 ± 0.57 E02	no data
				I-131 <9. E-01	* 1.4E-01 ± 3.14E-01
				Cs-134 <4.0 E00	* 6.80E+00 ± 3.10E+00
				Cs-137 6.5 E00 ± 2.0 E00	8.23E+00 ± 4.18E+00
				Ba-140 <1.0 E01	* 5.10E+00 ± 1.10E+01
			03/10/87	K-40 1.36 E03 ± 0.06 E03	no data
				I-131 <8.1 E-01	* -3.9E-03 ± 2.07E-01
				Cs-134 <4.0 E00	* 2.40E+00 ± 2.80E+00
				Cs-137 <4.0 E00	* 2.30E+00 ± 2.70E+00
				Ba-140 <9. E00	* 0.00E+00 ± 9.60E+00

* Denotes a result less than the detection limit.

State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)			Licensee Results		
Waterborne Surface	Split	Pumphouse Intake Station 26	01/21/87	Mn-54	<2.	E00	*	-1.10 E+00	± 2.00E+00
				Fe-59	<5.	E00	*	1.90 E-01	± 4.41E+00
				Co-58	<2.	E00	*	-5.90 E-01	± 2.11E+00
				Co-60	<2.	E00	*	1.80 E+00	± 2.40E+00
				Zn-65	<4.	E00	*	1.70 E+00	± 4.80E+00
				Zr-95	<4.	E00	*	1.30 E+00	± 4.60E+00
				Cs-134	<2.	E00	*	-2.60 E-01	± 2.16E+00
				Cs-137	<2.	E00	*	-9.00 E-01	± 2.04E+00
				Ba-140	<8.	E00	*	-3.90 E+00	± 9.40E+00
				H-3	2.1	E02 ± 2.3 E02	quarterly composite		
				K-40	8.2	E01 ± 1.7 E01	*	4.70 E+01	± 2.40E-01
				Gross Beta	2.	E00 ± 1. E00		1.9 E+00	± 8.0E+01
			02/18/87	Mn-54	<2.	E00	*	2.20 E+00	± 2.10E+00
				Fe-59	<4.	E00	*	1.60 E+00	± 5.00E+00
				Co-58	<2.	E00	*	-2.40 E-01	± 2.30E+00
				Co-60	<2.	E00	*	4.20 E-01	± 2.50E+00
				Zn-65	<4.	E00	*	2.80 E+00	± 4.80E+00
				Zr-95	<4.	E00	*	-1.50 E+00	± 4.70E+00
				Cs-134	<2.	E00	*	1.30 E+00	± 2.30E+00
				Cs-137	<2.	E00	*	1.90 E+00	± 2.40E+00
				Ba-140	<8.	E00	*	-5.70 E-01	± 1.20E+00
				H-3	2.4	E02 ± 2.3 E02	quarterly composite		
				K-40	6.3	E01 ± 1.8 E01	*	7.30 E+01	± 2.80E+01
				Gross Beta	1.3	E00 ± 0.4 E00		1.8 E+00	± 8.0E-01

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State of Washington
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Radiation Laboratory

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Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results		
Waterborne Surface	Split	Pumphouse Intake Station 26	03/18/87	Mn-54	<2.	E00		*	2.10 E+00	± 2.00E+00
				Fe-59	<5.	E00		*	3.40 E-01	± 4.20E+00
				Co-58	<2.	E00		*	-1.50 E-01	± 2.10E+00
				Co-60	<2.	E00		*	7.10 E-01	± 2.40E+00
				Zn-65	<4.	E00		*	-3.40 E+00	± 4.60E+00
				Zr-95	<4.	E00		*	8.30 E-01	± 4.30E+00
				Cs-134	<2.	E00		*	-3.90 E-01	± 2.20E+00
				Cs-137	<2.	E00		*	1.40 E+00	± 2.20E+00
				Ba-140	<8.	E00		*	-5.70 E+00	± 8.10E+00
				H-3	0.2	E02 ± 2.3	E02	*	1.6 E+02	± 1.00E+02
				K-40	8.7	E01 ± 1.9	E01	*	1.10 E+02	± 2.90E+01
				Gross Beta	1.	E00 ± 1.	E00		1.5 E+00	± 7.0E-01
	Split	Pumphouse Discharge Station 27	01/21/87	Mn-54	<2.	E00		*	2.10 E-01	± 1.86E+00
				Fe-59	<5.	E00		*	-3.60 E+00	± 4.00E+00
				Co-58	<2.	E00		*	-2.30 E-01	± 1.94E+00
				Co-60	<2.	E00		*	1.20 E+00	± 2.10E+00
				Zn-65	<4.	E00		*	3.00 E+00	± 4.00E+00
				Zr-95	<4.	E00		*	2.40 E+00	± 4.40E+00
				Cs-134	<2.	E00		*	9.90 E-01	± 1.96E+00
				Cs-137	<2.	E00		*	9.10 E-01	± 1.94E+00
				Ba-140	<8.	E00		*	-2.40 E+00	± 8.50E+00
				H-3	1.4	E02 ± 2.3	E02	quarterly composite		
				K-40	9.1	E01 ± 1.8	E01	*	5.20 E+01	± 2.20E+01
				Gross Beta	2.1	E01 ± 0.3	E01		2.9 E+01	± 3.0E00

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Radiation Laboratory

Location of Facility:
WNP-2-Hanford, Reservation

Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)			Licensee Results					
Waterborne Surface	Split	Pumphouse Discharge Station 27	02/18/87	Mn-54	<2.	E00	*	1.80	E+00	±	2.40	E+00
				Fe-59	<4.	E00	*	-1.00	E+00	±	5.10	E+00
				Co-58	<2.	E00	*	1.70	E-01	±	2.40	E-02
				Co-60	<2.	E00	*	3.30	E-01	±	2.40	E+00
				Zn-65	<4.	E00	*	9.90	E-01	±	4.60	E+00
				Zr-95	<4.	E00	*	2.30	E+00	±	5.20	E+00
				Cs-134	<2.	E00	*	8.60	E-01	±	2.50	E+00
				Cs-137	<2.	E00	*	2.90	E+00	±	2.50	E+00
				Ba-140	<8.	E00	*	-2.30	E+00	±	1.30	E+01
				H-3	1.	E02 ± 2.3 E02	quarterly composite					
				K-40	7.7	E01 ± 2.0 E01	*	1.20	E+02	±	3.00	E+01
				Gross Beta	2.5	E01 ± 0.3 E01		3.3	E+01	±	3.0	E+00
			03/18/87	Mn-54	<2.	E00	*	1.40	E+00	±	4.00	E+00
				Fe-59	<5.	E00	*	5.30	E-01	±	8.60	E+00
				Co-58	<2.	E00	*	0.00	E+00	±	4.10	E+00
				Co-60	<3.	E00	*	5.70	E+00	±	4.10	E+00
				Zn-65	<1.5	E01 ± 0.5 E01	*	1.30	E+01	±	9.50	E+00
				Zr-95	<4.	E00	*	3.20	E+00	±	8.30	E+00
				Cs-134	<2.	E00	*	-3.00	E+00	±	4.40	E+00
				Cs-137	<2.	E00	*	5.60	E+00	±	4.00	E+00
				Ba-140	<1.1	E01	*	1.00	E+01	±	1.60	E+01
				H-3	4.1	E03 ± 0.3 E03		1.6	E+03	±	1.00	E+02
				K-40	7.2	E01 ± 1.9 E01	*	1.70	E+03	±	9.00	E+00
				Gross Beta	2.8	E01 ± 0.3 E01		3.6	E+01	±	3.0	E+00

* Denotes a result less than the detection limit.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
(pCi/M ³)					
Airborne: Radioiodine and Particulates	Duplicate	Station 4	01/05/87	I-131 <7. E-02	* 3.40 E-03 ± 1.38 E-02
				Gross Beta 8. E-03 ± 1. E-03	8.4 E-03 ± 1.9 E-03
			01/12/87	I-131 <7. E-02	* 1.20 E-02 ± 1.50 E-02
				Gross Beta 4.2 E-02 ± 0.1 E-02	2.7 E-02 ± 0.3 E-02
			01/19/87	I-131 <7. E-02	* -6.50 E-04 ± 5.80 E-03
				Gross Beta 2.5 E-02 ± 0.1 E-02	2.3 E-02 ± 0.3 E-02
			01/26/87	I-131 <7. E-02	* 6.30 E-03 ± 1.46 E-02
				Gross Beta 4.4 E-02 ± 0.1 E-02	4.9 E-02 ± 0.4 E-02
			02/02/87	I-131 <7. E-02	* -2.90 E-03 ± 1.04 E-02
				Gross Beta 9. E-03 ± 1. E-03	9.4 E-03 ± 2.1 E-03
			02/10/87	I-131 <7. E-02	* -3.10 E-03 ± 1.27 E-02
				Gross Beta 2.3 E-02 ± 0.1 E-02	2.1 E-02 ± 0.3 E-02
			02/17/87	I-131 <7. E-02	* 2.80 E-03 ± 1.17 E-02
				Gross Beta 2.0 E-02 ± 0.1 E-02	2.2 E-02 ± 0.3 E-02
			02/23/87	I-131 <7. E-02	* 1.10 E-02 ± 1.60 E-02
				Gross Beta 2.2 E-02 ± 0.1 E-02	8.4 E-03 ± 2.2 E-03
			03/02/87	I-131 <7. E-02	* 5.80 E-04 ± 1.42 E-02
				Gross Beta 2.9 E-02 ± 0.1 E-02	1.4 E-02 ± 0.2 E-02
			03/09/87	I-131 <7. E-02	* -3.10 E-03 ± 1.05 E-02
				Gross Beta 1.2 E-02 ± 0.1 E-02	1.2 E-02 ± 0.2 E-02
			03/16/87	I-131 <7. E-02	* -1.20 E-02 ± 1.50 E-02
				Gross Beta 5. E-03 ± 1. E-03	7.3 E-03 ± 1.8 E-03
			03/23/87	I-131 <7. E-02	* 2.80 E-03 ± 9.30 E-03
				Gross Beta 7. E-03 ± 1. E-03	5.4 E-03 ± 1.8 E-03
			03/31/87	I-131 <7. E-02	* -9.40 E-03 ± 8.90 E-03
				Gross Beta 8. E-03 ± 1. E-03	1.3 E-02 ± 0.2 E-02

* Denotes a result less than the detection limit.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
(pCi/M ³)					
Airborne: Radioiodine and Particulates	Duplicate	Station #4	Quarterly Particulate Composite	Cs-134 <2. E-03 Cs-137 <1. E-03 Be-7 5. E-02 ± 1.46 E-02	* -1.00 E-05 ± 1.74 E-04 * 5.03 E-05 ± 1.82 E-04 5.43 E-02 ± 5.60 E-03
	Duplicate	Station #8	01/05/87	I-131 <7. E-02 Gross Beta 8. E-03 ± 1. E-03	* 9.50 E-03 ± 1.03 E-02 8.7 E-03 ± 1.9 E-03
			01/12/87	I-131 <7. E-02 Gross Beta 4.0 E-02 ± 0.1 E-02	* 3.80 E-03 ± 1.12 E-02 3.0 E-02 ± 0.3 E-02
			01/19/87	I-131 <7. E-02 Gross Beta 2.3 E-02 ± 0.1 E-02	* 5.70 E-03 ± 1.12 E-02 1.17 E-02 ± 0.2 E-02
			01/26/87	I-131 <7. E-02 Gross Beta 4.8 E-02 ± 0.1 E-02	* 3.30 E-03 ± 1.03 E-02 5.2 E-02 ± 0.4 E-02
			02/02/87	I-131 <7. E-02 Gross Beta 1.1 E-02 ± 0.1 E-02	* 2.10 E-03 ± 1.05 E-02 7.3 E-03 ± 2.0 E-03
			02/10/87	I-131 <7. E-02 Gross Beta 2.5 E-02 ± 0.1 E-02	* -5.70 E-03 ± 1.03 E-02 2.4 E-02 ± 0.3 E-02
			02/17/87	I-131 <7. E-02 Gross Beta 2.3 E-02 ± 0.1 E-02	* -7.10 E-03 ± 8.40 E-03 1.8 E-02 ± 0.3 E-02
			02/23/87	I-131 <7. E-02 Gross Beta 2.1 E-02 ± 0.1 E-02	* 1.80 E-02 ± 1.70 E-02 8.1 E-03 ± 2.2 E-03

* Denotes a result less than the detection limit.

State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
January - March 1987
1st Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)		Licensee Results					
				(pCi/M ³)							
Airborne: Radioiodine and Particulates	Duplicate	Station #8	03/02/87	I-131	<7. E-02	*	1.20	E-03	±	1.03	E-02
				Gross Beta	3.0 E-02 ± 0.1 E-02		1.2	E-02	±	0.2	E-02
			03/09/87	I-131	<7. E-02	*	-4.20	E-03	±	9.20	E-03
				Gross Beta	1.3 E-02 ± 0.1 E-02		1.2	E-02	±	0.2	E-02
			03/16/87	I-131	<7. E-02	*	-3.20	E-03	±	1.05	E-02
				Gross Beta	7. E-03 ± 1. E-03		5.1	E-03	±	1.7	E-03
	03/23/87	I-131	<7. E-02	*	-5.70	E-03	±	1.02	E-02		
		Gross Beta	7. E-03 ± 1. E-03		5.6	E-03	±	1.8	E-03		
	03/30/87	I-131	<7. E-02	*	5.00	E-03	±	1.03	E-02		
		Gross Beta	1.0 E-02 ± 0.1 E-02		1.0	E-02	±	0.2	E-02		
Duplicate	Station #8	Quarterly Particulate Composite	Cs-134	<2. E-03	*	1.44	E-04	±	2.03	E-04	
			Cs-137	<1. E-03		*	1.88	E-04	±	1.92	E-04
			Be-7	9. E-02 ± 2. E-02			5.45	E-02	±	6.85	E-03

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Description of Services Rendered

Location of Facility
WNP-2 Hanford Reservation

Reporting Period
April - June 1987
2nd Quarter

No. Samples	Sample Type	Analyses Performed				No. Analyses
		Gross	Gamma	Tritium	I-131	
	Air Particulate	26	2	0	0	28
	Radioiodine	0	0	0	26	26
	TLDS	0	0	0	0	0
	Water	6	6	6	0	18
	Sediment	0	0	0	0	0
	Milk	0	3	0	3	6
	Food Products	0	1	0	0	1
	Fish	0	1	0	0	1

Man Hours Expended:

Field Sampling.....Hours
Analytical Services.....Hours
Quality Assurance.....Hours
Administration.....Hours



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
April - June 1987
2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results			
Ingestion: Milk	Split	Station 36	04/21/87	K-40	1.55	E03	± 0.06 E03		no data		
				I-131	<1.	E00		*	9.5	E-02	± 1.08 E-01
				Cs-134	<3.	E00		*	5.13	E-01	± 2.78 E+00
				Cs-137	<3.	E00		*	3.17	E+00	± 2.59 E+00
				Ba-140	<1.1	E01		*	-3.92	E+00	± 8.84 E+00
			05/27/87	K-40	1.38	E03	± 0.06 E03		no data		
				I-131	<1.	E00		*	7.0	E-02	± 2.49 E-01
				Cs-134	<3.	E00		*	2.40	E-01	± 2.64 E+00
				Cs-137	<3.	E00		*	1.85	E+00	± 2.80 E+00
				Ba-140	<8.	E00		*	6.42	E+00	± 1.00 E+01
			06/16/87	K-40	1.35	E03	± 0.06 E03		no data		
				I-131	<1.	E00		*	-2.6	E-01	± 1.60 E-01
				Cs-134	<3.	E00		*	-3.48	E+00	± 2.69 E+00
				Cs-137	<3.	E00		*	3.56	E+00	± 2.40 E+00
				Ba-140	<9.	E00		*	4.16	E-01	± 9.10 E+00

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Reporting Period:
April - June 1987

2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
				pCi/Kg (Wet)	
Food Product (Lettuce)	Split	Pasco Station 37	06/16/87	I-131 <3. E01	* 9.46 E+00 ± 1.53 E+01
				Cs-134 <2. E01	* -7.24 E+00 ± 8.05 E+00
				Cs-137 <2. E01	* 1.41 E+01 ± 7.75 E+00
				K-40 5.11 E03 ± 0.33 E03	no data
				pCi/Kg (Wet)	
Fish (Carp)	Split	Columbia River	05/11/87	Mn-54 <2. E01	* 0.00 E-01 ± 3.13 E+00
				Fe-59 <4. E01	* 2.06 E+00 ± 1.06 E+01
				Co-58 <2. E01	* 3.42 E-01 ± 3.88 E+00
				Co-60 <2. E01	* 1.60 E+00 ± 3.62 E+00
				Zn-65 <4. E01	* -5.97 E+00 ± 8.83 E+00
				Cs-134 <2. E01	* 5.03 E+00 ± 3.50 E+00
				Cs-137 <2. E01	* 1.28 E+01 ± 3.85 E+00
				K-40 2.79 E03 ± 0.24 E03	3.01 E+03 ± 1.28 E+02

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Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
April - June 1987
2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results					
Waterborne: Surface	Split	Pumphouse Intake Station 26	04/15/87	K-40	1.0	E02 ± 0.2	E02	*	4.33	E+01	±	2.26	E+01
				Mn-54	<3.	E00	*	4.99	E-01	±	2.21	E+00	
				Fe-59	<7.	E00	*	-1.50	E+00	±	4.30	E+00	
				Co-58	<3.	E00	*	-8.18	E-01	±	2.06	E+00	
				Co-60	<4.	E00	*	1.14	E+00	±	2.16	E+00	
				Zn-65	<7.	E00	*	-2.86	E+00	±	4.82	E+00	
				Zr-95	<7.	E00	*	0.00	E-01	±	5.83	E+00	
				Cs-134	<4.	E00	*	-2.69	E+00	±	2.45	E+00	
				Cs-137	<4.	E00	*	5.30	E-01	±	2.05	E+00	
				Ba-140	<2.6	E01	*	-1.09	E+01	±	3.59	E+01	
				H-3	1.5	E02 ± 2.	E02	quarterly composite					
				Gross Beta	2.	E00 ± 1.	E00	1.9	E+00	±	8.0	E-01	
		Pumphouse Intake Station 26	05/13/87	K-40	6.0	E01 ± 2.0	E01	*	9.79	E+01	±	2.70	E+01
				Mn-54	<3.	E00	*	4.69	E-01	±	2.07	E+00	
				Fe-59	<7.	E00	*	1.32	E+00	±	4.54	E+00	
				Co-58	<3.	E00	*	-2.78	E-01	±	2.14	E+00	
				Co-60	<4.	E00	*	-8.82	E-01	±	2.28	E+00	
				Zn-65	<7.	E00	*	-6.62	E+00	±	4.55	E+00	
				Zr-95	<7.	E00	*	1.55	E+00	±	4.21	E+00	
				Cs-134	<4.	E00	*	-9.46	E-01	±	2.33	E+00	
				Cs-137	<4.	E00	*	3.03	E+00	±	2.27	E+00	
				Ba-140	<2.6	E01	*	-6.57	E+00	±	7.79	E+00	
				H-3	2.3	E02 ± 2.0	E02	quarterly composite					
				Gross Beta	2.	E00 ± 1.	E00	1.0	E+00	±	6.0	E-01	

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility: -
WNP-2-Hanford Reservation

Reporting Period:
April - June 1987
2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results					
Waterborne: Surface	Split	Pumphouse Intake Station 26	06/09/87	K-40	6.8	E01 ± 1.8	E01	*	1.01	E+03	±	6.50	E+01
				Mn-54	<3.	E00		*	-9.13	E-01	±	2.79	E+00
				Fe-59	<7.	E00		*	3.37	E+00	±	6.34	E+00
				Co-58	<3.	E00		*	8.95	E-01	±	2.91	E+00
				Co-60	<4.	E00		*	1.18	E+00	±	2.98	E+00
				Zn-65	<7.	E00		*	-9.19	E+00	±	6.94	E+00
				Zr-95	<7.	E00		*	4.02	E+00	±	6.09	E+00
				Cs-134	<4.	E00		*	-2.28	E+00	±	3.19	E+00
				Cs-137	<4.	E00		*	2.54	E+00	±	3.03	E+00
				Ba-140	<2.6	E01		*	2.18	E+00	±	1.28	E+01
				H-3	0.8	E02 ± 1.9	E02	*	4.0	E+01	±	8.57	E+01
				Gross Beta	2.	E00 ± 1.	E00		3.0	E+00	±	9.0	E-01
		Pumphouse Discharge Station 27	04/15/87	K-40	7.8	E01 ± 1.7	E01	*	1.14	E+02	±	2.82	E+01
				Mn-54	<3.	E00		*	5.62	E-01	±	2.12	E+00
				Fe-59	<7.	E00		*	1.92	E+00	±	4.51	E+00
				Co-58	<3.	E00		*	-1.64	E+00	±	2.08	E+00
				Co-60	<4.	E00		*	1.47	E+00	±	2.11	E+00
				Zn-65	<7.	E00		*	-6.93	E-01	±	4.61	E+00
				Zr-95	<7.	E00		*	2.66	E+00	±	4.68	E+00
				Cs-134	<4.	E00		*	5.32	E-01	±	2.22	E+00
				Cs-137	<4.	E00		*	1.97	E+00	±	2.46	E+00
				Ba-140	<2.6	E01		*	-2.69	E+00	±	9.57	E+00
				H-3	1.8	E02 ± 1.8	E02		quarterly composite				
				Gross Beta	2.5	E01 ± 0.2	E01		3.5	E+01	±	3.0	E+00

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:

April - June 1987

2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				2nd Quarter Licensee Results					
Waterborne:	Split	Pumphouse Discharge Station 27	05/13/87	K-40	7.1	E01 ± 1.9	E01	*	1.14	E+02	±	2.97	E+01
				Mn-54	<3.	E00		*	3.97	E+00	±	2.28	E+00
				Fe-59	<7.	E00		*	1.06	E+00	±	4.61	E+00
				Co-58	3.	E00 ± 1.	E00	*	4.58	E+00	±	2.53	E+00
				Co-60	7.	E00 ± 2.	E00	*	6.59	E+00	±	2.71	E+00
				Zn-65	1.2	E01 ± 0.3	E01		1.53	E+01	±	4.81	E+00
				Zr-95	<7.	E00		*	1.86	E+00	±	4.29	E+00
				Cs-134	<4.	E00		*	2.56	E+00	±	2.49	E+00
				Cs-137	<4.	E00		*	3.00	E+00	±	2.48	E+00
				Ba-140	<2.6	E01		*	-4.61	E+00	±	8.57	E+00
				H-3	2.17	E03 ± 0.23	E03		1.3	E+03	±	1.00	E+02
				Gross Beta	2.9	E01 ± 0.2	E01		3.4	E+01	±	3.0	E+00
		Pumphouse Discharge Station 27	06/09/87	K-40	8.1	E01 ± 1.9	E01		(a)				
				Mn-54	<3.	E00			(a)				
				Fe-59	<7.	E00			(a)				
				Co-58	<3.	E00			(a)				
				Co-60	<4.	E00			(a)				
				Zn-65	<7.	E00			(a)				
				Zr-95	<7.	E00			(a)				
				Cs-134	<4.	E00			(a)				
				Cs-137	<4.	E00			(a)				
				Ba-140	<2.6	E01			(a)				
				H-3	1.3	E02 ± 1.9	E02						
				Gross Beta	2.	E00 ± 1.	E00						
								quarterly composite					
								(a)					

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(a) Plant maintenance outage; no sample available.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
April- June 1987
2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
(pCi/kg dry)					
Sediment	Split	Station 34 (Downstream)	04/09/87	K-40 1.82 E04 ± 0.05 E04	1.46 E+04 ± 3.44 E+02
				Mn-54 <2.2 E01	no data
				Co-60 7.6 E01 ± 1.8 E01	5.46 E+01 ± 1.78 E+01
				Cs-134 <3.0 E01	* 3.18 E+01 ± 9.96 E+00
				Cs-137 3.6 E02 ± 0.2 E02	3.39 E+02 ± 1.95 E+01
				Gross Beta 2.6 E04 ± 0.3 E04	no data
(pCi/m ³)					
Airborne: Radioiodine and Particulates	Duplicate	Station 4	04/06/87	I-131 <7. E-02	* -3.49 E-03 ± 1.45 E-02
				Gross Beta 2.0 E-02 ± 0.1 E-02	2.2 E-02 ± 3.0 E-03
			04/13/87	I-131 <7. E-02	* -1.34 E-02 ± 9.40 E-03
				Gross Beta 6. E-03 ± 1. E-03	6.5 E-03 ± 2.1 E-03
			04/20/87	I-131 <7. E-02	* 0.00 E-01 ± 1.40 E-02
				Gross Beta 1.0 E-02 ± 0.1 E-02	6.8 E-03 ± 1.8 E-03
			04/27/87	I-131 <7. E-02	* 5.29 E-03 ± 9.15 E-03
				Gross Beta 1.8 E-02 ± 0.1 E-02	1.3 E-02 ± 2.0 E-03
			5/5/87	I-131 <7. E-02	* 6.40 E-03 ± 8.88 E-03
				Gross Beta 3.7 E-02 ± 0.1 E-02	1.2 E-02 ± 2.0 E-03
			5/11/87	I-131 <7. E-02	* 9.12 E-03 ± 1.11 E-02
				Gross Beta 2.6 E-02 ± 0.1 E-02	2.1 E-02 ± 3.0 E-03

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
April - June 1987
2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)				Licensee Results					
Airborne: Radioiodine and Particulates	Duplicate	Station #4	05/18/87	I-131	<7.	E-02		*	7.73	E-03	±	1.00	E-02
				Gross Beta	1.4	E-02 ± 0.1	E-02		9.4	E-03	±	2.0	E-03
			05/26/87	I-131	<7.	E-02		*	6.29	E-04	±	8.73	E-03
				Gross Beta	1.7	E-02 ± 0.1	E-02		1.4	E-02	±	2.0	E-03
			06/01/87	I-131	<7.	E-02		*	-7.12	E-03	±	1.10	E-02
				Gross Beta	9.	E-03 ± 1.	E-03		1.0	E-02	±	3.0	E-03
			06/08/87	I-131	<7.	E-02		*	5.25	E-04	±	7.83	E-03
				Gross Beta	1.7	E-02 ± 0.1	E-02		1.2	E-02	±	2.0	E-03
			06/15/87	I-131	<7.	E-02		*	4.22	E-03	±	1.02	E-02
				Gross Beta	1.8	E-02 ± 0.1	E-02		1.2	E-02	±	2.0	E-03
			06/22/87	I-131	<7.	E-02		*	4.30	E-03	±	9.58	E-03
				Gross Beta	9.	E-03 ± 1.	E-03		9.6	E-03	±	2.3	E-03
			06/29/87	I-131	<7.	E-02		*	5.73	E-03	±	9.73	E-03
				Gross Beta	1.7	E-02 ± 0.1	E-02		1.4	E-02	±	3.0	E-03
		Quarterly	Cs-134	<1.0	E-02		*	2.34	E-04	±	1.85	E-04	
		Particulate	Cs-137	<1.0	E-02		*	1.43	E-04	±	1.71	E-04	
		Composite	Be-7	1.4	E-01 ± 0.2	E-01		1.01	E-01	±	5.44	E-03	

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
April - June 1987
2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)	Licensee Results
Airborne: Radioiodine and Particulates	Duplicate	Station 8	04/6/87	I-131 <7. E-02 Gross Beta 2.2 E-02 ± 0.1 E-02	* 2.94 E-03 ± 1.06 E-02 2.0 E-02 ± 3.0 E-03
			04/13/87	I-131 <7. E-02 Gross Beta 7. E-03 ± 1. E-03	* 1.76 E-04 ± 1.30 E-02 9.9 E-03 ± 2.3 E-03
			04/20/87	I-131 <7. E-02 Gross Beta 1.0 E-02 ± 0.1 E-02	* 6.03 E-03 ± 1.09 E-02 7.7 E-03 ± 1.9 E-03
			04/27/87	I-131 <7. E-02 Gross Beta 2.3 E-02 ± 0.1 E-02	* 5.54 E-03 ± 9.98 E-03 2.2 E-02 ± 3.0 E-03
			05/05/87	I-131 <7. E-02 Gross Beta 3.1 E-02 ± 0.1 E-02	* 1.70 E-04 ± 9.78 E-03 1.8 E-02 ± 3.0 E-03
			05/11/87	I-131 <7. E-02 Gross Beta 2.5 E-02 ± 0.1 E-02	* 2.41 E-03 ± 9.55 E-03 3.0 E-02 ± 3.0 E-03
			5/18/87	I-131 <7. E-02 Gross Beta 1.2 E-02 ± 0.1 E-02	* -2.94 E-04 ± 8.51 E-03 1.1 E-02 ± 2.0 E-03
			5/26/87	I-131 <7. E-02 Gross Beta 1.4 E-02 ± 0.1 E-02	* -3.26 E-03 ± 7.41 E-03 1.3 E-02 ± 2.0 E-03
			6/01/87	I-131 <7. E-02 Gross Beta 1.1 E-02 ± 0.1 E-02	* 3.61 E-03 ± 1.01 E-02 6.6 E-03 ± 2.4 E-03
			6/8/87	I-131 <7. E-02 Gross Beta 1.7 E-02 ± 0.1 E-02	* -2.28 E-03 ± 1.04 E-02 1.1 E-02 ± 2.0 E-03
			6/15/87	I-131 <7. E-02 Gross Beta 1.5 E-02 ± 0.1 E-02	* 1.21 E-03 ± 9.31 E-03 1.6 E-02 ± 3.0 E-03
			6/22/87	I-131 <7. E-02 Gross Beta 1.0 E-02 ± 0.1 E-02	* -6.43 E-03 ± 1.11 E-02 1.1 E-02 ± 2.0 E-03
			6/29/87	I-131 <7. E-02 Gross Beta 1.7 E-02 ± 0.1 E-02	* -6.97 E-03 ± 7.99 E-03 1.7 E-02 ± 3.0 E-03

* , Denotes a result less than the
detection limit.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
April- June 1987

2nd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)	Licensee Results
Airborne: Radioiodine and Particulates	Duplicate	Station #8	Quarterly Particulate Composite	Cs-134	<1.0 E-02
				Cs-137	<1.0 E-02
				Be-7	1.1 E-01 ± 0.2 E-01
					* 4.71 E-05 ± 1.79 E-04
					* 0.00 E-01 ± 1.64 E-04
					1.22 E-01 ± 6.14 E-03

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Description of Services Rendered

Location of Facility
WNP-2 Hanford Reservation

Reporting Period
July - September 1987
3rd Quarter

No. Samples	Sample Type	Analyses Performed				No. Analyses
		Gross	Gamma	Tritium	I-131	
	Air Particulate	26	2	0	0	28
	Radioiodine	0	0	0	26	26
	TLDs	0	0	0	0	0
	Water	6	6	6	0	18
	Sediment	0	0	0	0	0
	Milk	0	3	0	3	6
	Food Products	0	1	0	1	2
	Fish	0	1	0	0	1

Man Hours Expended:

Field Sampling.....Hours
Analytical Services.....Hours
Quality Assurance.....Hours
Administration.....Hours



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
Ingestion: Milk	Split	Station 36	07/21/87	K-40 1.38 E03 ± 0.06 E03	no data
				I-131 <3. E00*	** -1.3 E-01 ± 1.75 E-01
				Cs-134 <3. E00	** -1.18 E+00 ± 2.64 E+00
				Cs-137 <3. E00	** 1.46 E+00 ± 2.44 E+00
				Ba-140 <8 E00	** 2.75 E-01 ± 9.68 E+00
			08/18/87	K-40 1.34 E03 ± 0.06 E03	no data
				I-131 <3. E00*	** 2.7 E-03 ± 2.30 E-02
				Cs-134 <3. E00	** -8.24 E-02 ± 2.75 E+00
				Cs-137 <3. E00	** 5.59 E+00 ± 2.90 E+00
				Ba-140 <8. E00	** 9.47 E-01 ± 9.59 E+00
			09/22/87	K-40 1.41 E03 ± 0.06 E03	no data
				I-131 <3. E00*	** 1.4 E-01 ± 1.84 E-01
				Cs-134 <3. E00	** -3.31 E-01 ± 2.55 E+00
Food Products: Swiss Chard	Split	Pasco Station 37	08/18/87	Cs-137 <3. E00	** 5.92 E-01 ± 2.54 E+00
				Ba-140 <8. E00	** 2.93 E+00 ± 9.10 E+00
				(pCi/kg)	
				K-40 3.00 E03 ± 0.30 E03	no data
				I-131 <4.5 E01	** 1.79 E+00 ± 1.51 E+01
				Cs-134 <3.0 E01	** 4.67 E+00 ± 8.65 E+00
				Cs-137 <3.0 E01	1.87 E+01 ± 9.91 E+00

*Detection limit exceeds required LLD because only a detector with no shield was available for the analysis at this time.

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
Fish (Sucker)	Split	Columbia River	09/14/87	(pCi/kg)	
				Mn-54 <1.7 E01	* 2.30 E+00 ± 5.32 E+00
				Fe-59 <5.1 E01	* -6.01 E-01 ± 1.46 E+01
				Co-58 <2.0 E01	* 1.22 E-01 ± 6.03 E+00
				Co-60 <1.7 E01	* 5.54 E-01 ± 5.11 E+00
				Zn-65 <4.0 E01	* -7.17 E+00 ± 1.31 E+01
				Cs-134 <1.8 E01	* 7.42 E+00 ± 6.06 E+00
				Cs-137 3.5 E01 ± 1.3 E01	3.18 E+01 ± 8.43 E+00
				K-40 4.45 E03 ± 0.33 E03	3.44 E+03 ± 1.46 E+02

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:

July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results			
Waterborne:	Split	Pumphouse Intake Station 26	07/15/87	Mn-54	<3.	E00		*	7.41	E-01	± 1.81 E+00
				Fe-59	<7.	E00		*	-8.85	E-01	± 4.27 E+00
				Co-58	<3.	E00		*	-5.47	E-01	± 1.98 E+00
				Co-60	<4.	E00		*	5.79	E-01	± 2.12 E+00
				Zn-65	<7.	E00		*	-3.47	E+00	± 4.30 E+00
				Zr-95	<7.	E00		*	-2.27	E-01	± 4.12 E+00
				Cs-134	<4.	E00		*	3.08	E-01	± 2.11 E+00
				Cs-137	<4.	E00		*	1.18	E+00	± 2.05 E+00
				Ba-140	<2.6	E01		*	7.24	E+00	± 9.08 E+00
				H-3	1.2	E02	1.9 E02	quarterly composite			
				K-40	6.6	E01	2.0 E01	*	8.09	E+01	± 2.57 E+01
				Gross Beta	2.	E00	1. E00		1.7	E+00	± 8.0 E-01
	Split	Pumphouse Intake Station 26	08/11/87	Mn-54	<3.	E00		*	1.83	E+00	± 2.12 E+00
				Fe-59	<7.	E00		*	-3.65	E+00	± 4.16 E+00
				Co-58	<3.	E00		*	0.00	E-01	± 2.06 E+00
				Co-60	<4.	E00		*	-7.07	E-01	± 2.15 E+00
				Zn-65	<7.	E00		*	-1.79	E-01	± 4.63 E+00
				Zr-95	<7.	E00		*	1.58	E+00	± 4.24 E+00
				Cs-134	<4.	E00		*	0.00	E-01	± 2.41 E+00
				Cs-137	<4.	E00		*	1.43	E+00	± 2.25 E+00
				Ba-140	<2.6	E01		*	3.60	E+00	± 8.45 E+00
				H-3	-0.1	E02	2.0 E02	quarterly composite			
				K-40	6.2	E01	1.7 E01	*	8.30	E+01	± 2.49 E+01
				Gross Beta	2.	E00	1. E00		1.8	E+00	± 7.0 E-01

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)			Licensee Results					
Waterborne: Surface	Split	Pumphouse Discharge Station 27	08/11/87	Mn-54	<3.	E00	*	5.63	E-01	±	2.07	E+00
				Fe-59	<7.	E00	*	3.24	E+00	±	4.30	E+00
				Co-58	<3.	E00	*	4.38	E-01	±	2.09	E+00
				Co-60	<4.	E00	*	1.21	E+00	±	2.14	E+00
				Zn-65	<7.	E00	*	4.04	E+00	±	4.77	E+00
				Zr-95	<7.	E00	*	2.73	E-01	±	4.18	E+00
				Cs-134	<4.	E00	*	-1.30	E+00	±	2.19	E+00
				Cs-137	<4.	E00	*	6.46	E-01	±	2.09	E+00
				Ba-140	<2.6	E01	*	-4.15	E-01	±	7.76	E+00
				H-3	1.37	E03 ± 0.22 E03	quarterly composite					
				K-40	7.8	E01 ± 2.1 E01	*	1.33	E+02	±	2.96	E+01
				Gross Beta	1.9	E01 ± 0.2 E01		2.5	E+01	±	3.0	E+00
	Split	Pumphouse Discharge Station 27	09/16/87	Mn-54	<3.	E00	*	-2.04	E+00	±	2.07	E+00
				Fe-59	<7.	E00	*	-1.20	E+00	±	4.49	E+00
				Co-58	<3.	E00	*	1.22	E+00	±	2.11	E+00
				Co-60	<4.	E00	*	9.31	E-01	±	2.15	E+00
				Zn-65	<7.	E00	*	2.06	E+00	±	4.59	E+00
				Zr-95	<7.	E00	*	-6.38	E-01	±	4.14	E+00
				Cs-134	<4.	E00	*	1.00	E+00	±	2.31	E+00
				Cs-137	<4.	E00	*	-1.56	E-01	±	2.50	E+00
				Ba-140	<2.6	E01	*	-7.28	E-01	±	8.14	E+00
				H-3	1.10	E03 ± 0.23 E03		2.3	E+03	±	1.00	E+02
K-40	8.1	E01 ± 2.0 E01	*	6.79	E+01	±	2.65	E+01				
Gross Beta	1.4	E01 ± 0.1 E01		2.2	E+01	±	3.0	E+00				

* Denotes a result less than the detection limit.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results					
Waterborne: Surface	Split	Pumphouse Intake Station 26	09/16/87	Mn-54	<3.	E00		*	1.22	E+00	±	2.08	E+00
				Fe-59	<7.	E00		*	0.00	E-01	±	4.35	E+00
				Co-58	<3.	E00		*	-7.46	E-02	±	2.05	E+00
				Co-60	<4.	E00		*	1.54	E+00	±	2.12	E+00
				Zn-65	<7.	E00		*	3.59	E-01	±	4.33	E+00
				Zr-95	<7.	E00		*	-1.39	E-01	±	4.29	E+00
				Cs-134	<4.	E00		*	5.48	E-01	±	2.19	E+00
				Cs-137	<4.	E00		*	2.57	E+00	±	2.27	E+00
				Ba-140	<2.6	E01		*	-1.27	E+00	±	7.86	E+00
				H-3	1.7	E02 ± 2.1	E02		1.7	E+02	±	6.00	E+01
				K-40	8.5	E01 ± 2.0	E01	*	1.05	E+02	±	2.92	E+01
				Gross Beta	2.	E00 ± 1.	E00		2.4	E+00	±	8.0	E-01
	Split	Pumphouse Discharge Station 27	07/15/87	Mn-54	<3.	E00		*	2.50	E+00	±	2.25	E+00
				Fe-59	<7.	E00		*	9.45	E-01	±	4.36	E+00
				Co-58	3.	E00 ± 2.	E00	*	3.48	E+00	±	2.43	E+00
				Co-60	9.	E00 ± 2.	E00		1.05	E+01	±	3.10	E+00
				Zn-65	9.0	E01 ± 0.7	E01		8.67	E+01	±	1.31	E+01
				Zr-95	<7.	E00		*	2.89	E+00	±	4.72	E+00
				Cs-134	<4.	E00		*	6.09	E-01	±	2.41	E+00
				Cs-137	<4.	E00		*	1.20	E+00	±	2.37	E+00
				Ba-140	2.6	E01		*	5.02	E+00	±	1.05	E+01
				H-3	4.35	E03 ± 0.27	E03		quarterly composite				
				K-40	1.10	E02 ± 0.19	E02	*	1.09	E+02	±	2.60	E+01
				Gross Beta	1.8	E01 ± 0.2	E01		2.0	E+01	±	2.0	E+00

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State of Washington
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Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)				Licensee Results					
Airborne: Radioiodine and Particulates	Duplicate	Station #4	07/06/87	I-131	<7.	E-02		*	-8.90	E-04	±	1.11	E-02
				Gross Beta	1.6	E-02	± 0.1 E-02		1.3	E-02	±	3.0	E-03
			07/13/87	I-131	<7.	E-02		*	-2.29	E-03	±	1.03	E-02
				Gross Beta	4.5	E-02	± 0.4 E-02		8.4	E-03	±	2.1	E-03
			07/20/87	I-131	<7.	E-02		*	3.29	E-03	±	9.56	E-03
				Gross Beta	1.1	E-02	± 0.1 E-02		1.2	E-02	±	2.0	E-03
			07/27/87	I-131	<7.	E-02		*	-4.78	E-03	±	1.83	E-02
				Gross Beta	1.4	E-02	± 0.1 E-02		1.5	E-02	±	2.0	E-03
			08/03/87	I-131	<7.	E-02		*	2.94	E-03	±	8.94	E-03
				Gross Beta	1.1	E-02	± 0.1 E-02		1.0	E-02	±	2.0	E-03
			08/10/87	I-131	<7.	E-02		*	2.58	E-03	±	1.06	E-02
				Gross Beta	1.3	E-02	± 0.1 E-02		1.4	E-02	±	2.0	E-03
			08/17/87	I-131	<7.	E-02		*	-1.95	E-03	±	9.22	E-03
				Gross Beta	7.	E-03	± 1. E-03		8.3	E-03	±	2.0	E-03
			08/24/87	I-131	<7.	E-02		*	1.32	E-03	±	8.70	E-03
				Gross Beta	1.5	E-02	± 0.1 E-02		1.7	E-02	±	3.0	E-03
			08/31/87	I-131	<7.	E-02		*	3.58	E-03	±	9.15	E-03
				Gross Beta	3.0	E-02	± 0.1 E-02		2.3	E-02	±	3.0	E-03
			09/08/87	I-131	<7.	E-02		*	6.79	E-03	±	8.35	E-03
				Gross Beta	2.0	E-02	± 0.1 E-02		1.6	E-02	±	2.0	E-03
			09/14/87	I-131	<7.	E-02		*	-5.58	E-03	±	1.20	E-02
				Gross Beta	2.1	E-02	± 0.1 E-02		2.2	E-02	±	3.0	E-03

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State of Washington
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Office of Public Health Laboratories and Epidemiology
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)	Licensee Results
Airborne: : Radioiodine and Particulates	Duplicate	Station 8	08/10/87	I-131 <7. E-02 Gross Beta 1.3 E-02 ± 0.1 E-02	* 3.43 E-03 ± 8.73 E-03 1.3 E-02 ± 2.0 E-03
			08/17/87	I-131 <7. E-02 Gross Beta 7. E-03 ± 1. E-03	* -7.71 E-03 ± 9.92 E-03 6.5 E-03 ± 1.9 E-03
			08/24/87	I-131 <7. E-02 Gross Beta 1.5 E-02 ± 0.1 E-02	* 1.18 E-03 ± 1.01 E-02 1.5 E-02 ± 3.0 E-03
			08/31/88	I-131 <7. E-02 Gross Beta 1.8 E-02 ± 0.1 E-02	* -4.60 E-03 ± 9.99 E-03 2.3 E-02 ± 3.0 E-03
			09/08/87	I-131 <7. E-02 Gross Beta 1.7 E-02 ± 0.1 E-02	* -3.65 E-03 ± 7.54 E-03 2.0 E-02 ± 2.0 E-03
			09/14/87	I-131 <7. E-02 Gross Beta 2.3 E-02 ± 0.1 E-02	* -1.06 E-03 ± 1.08 E-02 2.4 E-02 ± 3.0 E-03
			09/21/87	I-131 <7. E-02 Gross Beta 1.7 E-02 ± 0.1 E-02	* -9.16 E-03 ± 1.04 E-02 1.5 E-02 ± 2.0 E-03
			09/28/87	I-131 <7. E-02 Gross Beta 3.0 E-02 ± 0.1 E-02	* 1.04 E-03 ± 9.09 E-03 2.7 E-02 ± 3.0 E-03
			Quarterly	Cs-134 <2. E-03	* 1.86 E-04 ± 3.93 E-04
			Particulate	Cs-137 <1. E-03	* -1.33 E-04 ± 3.59 E-04
			Composite	Be-7 8.4 E-02 ± 1.8 E-02	1.07 E-01 ± 8.87 E-03

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State of Washington
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Office of Public Health Laboratories
Radiation Laboratory

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July - September 1987
3rd Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)				Licensee Results					
Airborne: Radioiodine and Particulates	Duplicate	Station 4	09/21/87	I-131	<7.	E-02		*	4.01	E-03	±	1.36	E-02
				Gross Beta	1.7	E-02 ± 0.1	E-02		1.7	E-02	±	3.0	E-03
			09/28/87	I-131	<7.	E-02		*	-1.26	E-04	±	1.03	E-02
				Gross Beta	3.0	E-02 ± 0.1	E-02		2.6	E-02	±	3.0	E-03
			Quarterly Particulate Composite	Cs-134	<3.	E-03		*	-1.12	E-05	±	1.92	E-04
				Cs-137	<2.	E-03		*	3.81	E-05	±	1.96	E-04
				Be-7	8.1	E-02 ± 4.7	E-02		1.08	E-01	±	6.27	E-03
Airborne: Radioiodine and Particulates	Duplicate	Station 8	07/06/87	I-131	<7.	E-02		*	-4.07	E-03	±	1.03	E-02
				Gross Beta	1.5	E-02 ± 0.1	E-02		1.3	E-02	±	2.0	E-03
			07/13/87	I-131	<7.	E-02		*	9.91	E-04	±	1.00	E-02
				Gross Beta	9.	E-03 ± 1.	E-03		1.1	E-02	±	2.0	E-03
			07/20/87	I-131	<7.	E-02		*	2.69	E-03	±	1.03	E-02
				Gross Beta	1.5	E-02 ± 0.1	E-02		1.0	E-02	±	2.0	E-03
			07/27/87	I-131	<7.	E-02		*	3.03	E-03	±	9.98	E-03
				Gross Beta	1.5	E-02 ± 0.1	E-02		1.9	E-02	±	3.0	E-03
			08/03/87	I-131	<7.	E-02		*	-3.49	E-03	±	9.81	E-03
				Gross Beta	1.3	E-02 ± 0.1	E-02		1.1	E-02	±	2.0	E-03

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Description of Services Rendered

Location of Facility
WNP-2 Hanford Reservation

Reporting Period
October - December 1987
4th Quarter

No. Samples	Sample Type	Analyses Performed				No. Analyses
		Gross	Gamma	Tritium	I-131	
	Air Particulate	26	2	0	0	28
	Radioiodine	0	0	0	26	26
	TLDs	0	0	0	0	0
	Water	6	6	6	0	18
	Sediment	0	0	0	0	0
	Milk	0	3	0	3	6
	Food Products	0	0	0	0	0
	Fish	0	0	0	0	0

Man Hours Expended:

Field Sampling.....Hours
Analytical Services.....Hours
Quality Assurance.....Hours
Administration.....Hours



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)	Licensee Results
Ingestion: Milk	Split	Station 36	10/13/87	K-40 1.42 E03 ± 0.06 E03	no data
				I-131 <5. E-01	* -1.8 E-01 ± 1.59 E-01
				Cs-134 <3. E00	* -3.25 E-01 ± 2.73 E+00
				Cs-137 <3. E00	* 0.00 E-01 ± 2.78 E+00
				Ba-140 <7. E00	* 1.17 E+00 ± 9.60 E+00
			11/17/87	K-40 1.29 E03 ± 0.06 E03	no data
				I-131 <6. E-01	* -2.4 E-01 ± 1.62 E-01
				Cs-134 <3. E00	* 1.14 E+00 ± 2.53 E+00
				Cs-137 <3. E00	* 3.26 E+00 ± 2.71 E+00
				Ba-140 <8. E00	* -3.09 E+00 ± 8.76 E+00
			12/15/87	K-40 1.49 E03 ± 0.05 E03	no data
				I-131 <7. E-01	* -1.2 E-02 ± 1.62 E-01
				Cs-134 <2. E00	* 0.00 E-01 ± 2.46 E+00
				Cs-137 <2. E00	* 2.17 E+00 ± 2.45 E+00
				Ba-140 <8. E00	* 4.36 E+00 ± 7.84 E+00

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)									
Waterborne: Surface	Split	Pumphouse Intake Station 26	10/21/87	Mn-54	<2.	E00	*	2.92	E+00	±	2.10	E+00	
				Fe-59	<8.	E00	*	-1.03	E+00	±	4.22	E+00	
				Co-58	<3.	E00	*	-8.56	E-01	±	2.09	E+00	
				Co-60	<4.	E00	*	1.98	E-01	±	2.20	E+00	
				Zn-65	<7.	E00	*	-1.55	E+00	±	4.53	E+00	
				Zr-95	<6.	E00	*	5.57	E+00	±	4.51	E+00	
				Cs-134	<4.	E00	*	1.10	E+00	±	2.32	E+00	
				Cs-137	<4.	E00	*	2.20	E+00	±	2.32	E+00	
				Ba-140	<4.	E01	*	3.03	E+00	±	8.74	E+00	
				K-40	9.	E01 ± 2.	E01	*	6.09	E+01	±	2.60	E+01
				H-3	0.8	E02 ± 2.0	E02	quarterly composite					
				Gross Beta	1.2	E00 ± 0.4	E00	2.8	E+00	±	9.0	E-01	
			11/19/87	Mn-54	<2.	E00	*	4.08	E-01	±	1.63	E+00	
				Fe-59	<6.	E00	*	1.45	E+00	±	3.59	E+00	
				Co-58	<3.	E00	*	-3.76	E-01	±	1.75	E+00	
				Co-60	<2.	E00	*	2.79	E+00	±	1.96	E+00	
				Zn-65	<5.	E00	*	-1.15	E-01	±	3.60	E+00	
				Zr-95	<5.	E00	*	1.92	E+00	±	3.53	E+00	
				Cs-134	<2.	E00	*	5.42	E-01	±	1.82	E+00	
				Cs-137	<2.	E00	*	3.74	E+00	±	1.88	E+00	
				Ba-140	<3.	E01	*	-3.15	E+00	±	6.55	E+00	
				K-40	8.0	E01 ± 2.0	E01	*	8.44	E+01	±	2.13	E+01
				H-3	1.7	E02 ± 1.9	E02	quarterly composite					
				Gross Beta	1.6	E00 ± 0.4	E00	8.5	E-01	±	7.4	E-01	

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State of Washington
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Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)				Licensee Results					
Waterborne: Surface	Split	Pumphouse Intake Station 26	12/16/87	Mn-54	<2.	E00		*	-2.61	E-01	±	1.90	E+00
				Fe-59	<4.	E00		*	2.43	E+00	±	4.01	E+00
				Co-58	<2.	E00		*	-4.04	E-01	±	1.86	E+00
				Co-60	<2.	E00		*	8.80	E-01	±	2.34	E+00
				Zn-65	<4.	E00		*	0.00	E-01	±	4.15	E+00
				Zr-95	<4.	E00		*	2.48	E-01	±	3.70	E+00
				Cs-134	<2.	E00		*	2.82	E-01	±	2.03	E+00
				Cs-137	<3.	E00		*	-4.93	E-01	±	2.06	E+00
				Ba-140	<7.	E01		*	-3.81	E+00	±	7.14	E+00
				K-40	9.2	E01 ± 1.8	E01	*	1.27	E+02	±	2.84	E+01
				H-3	3.5	E02 ± 1.9	E02	*	2.3	E+02	±	8.00	E+01
				Gross Beta	1.3	E00 ± 0.4	E00		1.1	E+00	±	7.0	E-01
		Pumphouse Discharge Station 27	10/21/87	Mn-54	<4.	E00		*	-7.44	E-02	±	2.18	E+00
				Fe-59	<1.	E01		*	-1.83	E+00	±	4.41	E+00
				Co-58	<5.	E00		*	7.84	E-01	±	2.28	E+00
				Co-60	<4.	E00		*	-1.04	E+01	±	2.21	E+00
				Zn-65	<8.	E00		*	5.87	E+00	±	4.97	E+00
				Zr-95	<9.	E00		*	-1.47	E-01	±	4.75	E+00
				Cs-134	<4.	E00		*	-8.07	E-02	±	2.29	E+00
				Cs-137	<4.	E00		*	1.80	E+00	±	2.39	E+00
				Ba-140	<6.	E01		*	0.00	E-01	±	9.28	E+00
				K-40	1.2	E02 ± 0.3	E02	*	9.87	E+01	±	2.93	E+01
				H-3	4.53	E03 ± 0.28	E03		quarterly composite				
				Gross Beta	1.8	E01 ± 0.2	E01		2.5	E+01	±	3.0	E+00

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State of Washington
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Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/L)			Licensee Results					
Waterborne: Surface	Split	Pumphouse Discharge Station 27	11/19/87	Mn-54	<2.	E00	*	-2.99	E-01	±	1.67	E+00
				Fe-59	<6.	E00	*	-4.77	E-01	±	3.61	E+00
				Co-58	<3.	E00	*	5.17	E-01	±	1.72	E+00
				Co-60	<4.	E00	*	0.00	E-01	±	1.89	E+00
				Zn-65	<7.	E00	*	7.35	E-01	±	3.55	E+00
				Zr-95	<5.	E00	*	1.35	E+00	±	3.71	E+00
				Cs-134	<4.	E00	*	-1.62	E-01	±	1.85	E+00
				Cs-137	<4.	E00	*	9.66	E-02	±	1.88	E+00
				Ba-140	<3.	E01	*	1.49	E-01	±	7.06	E+00
				K-40	9.0	E01 ± 2.0 E01	*	1.18	E+02	±	2.41	E+01
				H-3	3.2	E02 ± 1.9 E02	quarterly composite					
			Gross Beta	2.1	E01 ± 0.2 E01	2.7	E+01	±	3.0	E+00		
			12/16/87	Mn-54	<2.	E00	*	-7.22	E-02	±	1.72	E+00
				Fe-59	<4.	E00	*	0.00	E-01	±	3.62	E+00
				Co-58	<2.	E00	*	-1.42	E+00	±	1.74	E+00
				Co-60	<2.	E00	*	1.52	E+00	±	1.91	E+00
				Zn-65	<4.	E00	*	4.46	E+00	±	4.20	E+00
				Zr-95	<4.	E00	*	3.01	E+00	±	3.92	E+00
				Cs-134	<3.	E00	*	1.17	E+00	±	2.02	E+00
				Cs-137	<3.	E00	*	3.41	E+00	±	2.06	E+00
				Ba-140	<8.	E00	*	-3.00	E+00	±	6.48	E+00
				K-40	1.1	E02 ± 0.2 E02	*	7.82	E+01	±	2.68	E+01
				H-3	8.	E02 ± 2. E02	1.6	E+03	±	1.00	E+02	
				Gross Beta	2.1	E01 ± 0.2 E01	2.2	E+01	±	3.0	E+00	

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State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)				Licensee Results					
Airborne: Radioiodine and Particulates	Duplicate	Station 4	10/05/87	I-131	<7.	E-02		*	5.15	E-04	±	1.02	E-02
				Gross Beta	2.9	E-02 ± 0.1	E-02		2.9	E-02	±	3.0	E-03
			10/12/87	I-131	<7.	E-02		*	2.14	E-03	±	1.34	E-02
				Gross Beta	2.8	E-02 ± 0.1	E-02		2.8	E-02	±	3.0	E-03
			10/19/87	I-131	<7.	E-02		*	-1.46	E-03	±	6.79	E-03
				Gross Beta	3.4	E-02 ± 0.2	E-02		3.1	E-02	±	3.0	E-03
			10/26/87	I-131	<7.	E-02		*	-5.86	E-03	±	8.86	E-03
				Gross Beta	5.7	E-02 ± 0.2	E-02		3.6	E-02	±	3.0	E-03
			11/02/87	I-131	<7.	E-02		*	6.37	E-03	±	9.10	E-03
				Gross Beta	5.6	E-02 ± 0.2	E-02		6.3	E-02	±	4.0	E-03
			11/09/87	I-131	<7.	E-02		*	-3.31	E-03	±	9.61	E-03
				Gross Beta	3.7	E-02 ± 0.1	E-02		3.4	E-02	±	3.0	E-03
			11/16/87	I-131	<7.E	E-02		*	5.74	E-03	±	1.04	E-02
				Gross Beta	2.2	E-02 ± 0.1	E-02		1.3	E-02	±	2.0	E-03
			11/23/87	I-131	<7.	E-02		*	-6.03	E-03	±	5.80	E-03
				Gross Beta	3.3	E-02 ± 0.2	E-02		2.4	E-02	±	3.0	E-03
			11/30/87	I-131	<7.	E-02		*	8.81	E-03	±	1.08	E-02
				Gross Beta	4.0	E-02 ± 0.2	E-02		2.4	E-02	±	3.0	E-03
			12/07/87	I-131	<7.	E-02		*	7.42	E-03	±	1.21	E-02
				Gross Beta	1.9	E-02 ± 0.1	E-02		1.6	E-02	±	2.0	E-03
			12/15/87	I-131	<7.	E-02		*	2.41	E-04	±	7.75	E-03
				Gross Beta	1.2	E-02 ± 0.1	E-02		7.2	E-03	±	2.0	E-03
			12/21/87	I-131	<7.	E-02		*	-1.55	E-03	±	5.34	E-03
				Gross Beta	3.3	E-02 ± 0.1	E-02		3.0	E-02	±	3.0	E-03
			12/28/87	I-131	<7.	E-02		*	-2.99	E-03	±	8.98	E-03
				Gross Beta	3.6	E-02 ± 0.2	E-02		3.2	E-02	±	3.0	E-03

* Denotes a result less than the detection limit.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)				Licensee Results					
Airborne: Radioiodine and Particulates	Duplicate	Station 4	Quarterly Particulate Composite	Cs-134	<1.	E-03		*	5.53	E-05	±	1.35	E-04
				Cs-137	<1.	E-03		*	2.62	E-04	±	1.52	E-04
				Be-7	5.	E-02 ± 1.	E-02		4.46	E-02	±	3.79	E-03
		Station 8	10/05/87	I-131	<7.	E-02		*	-5.22	E-03	±	9.15	E-03
				Gross Beta	2.9	E-02 ± 0.1	E-02		2.9	E-02	±	3.0	E-03
			10/12/87	I-131	<7.	E-02		*	4.28	E-03	±	1.03	E-02
				Gross Beta	2.7	E-02 ± 0.1	E-02		2.7	E-02	±	3.0	E-03
			10/19/87	I-131	<7.	E-02		*	-6.28	E-03	±	1.05	E-02
				Gross Beta	2.9	E-02 ± 0.1	E-02		2.8	E-02	±	3.0	E-03
			10/26/87	I-131	<7.	E-02		*	1.12	E-03	±	8.14	E-03
				Gross Beta	4.5	E-02 ± 0.2	E-02		4.2	E-02	±	3.0	E-03
			11/02/87	I-131	<7.	E-02		*	-5.37	E-03	±	8.40	E-03
				Gross Beta	4.9	E-02 ± 0.1	E-02		7.4	E-02	±	4.0	E-03
			11/09/87	I-131	<7.	E-02		*	-7.65	E-03	±	8.59	E-03
				Gross Beta	3.3	E-02 ± 0.1	E-02		3.8	E-02	±	3.0	E-03
			11/16/87	I-131	<7.	E-02		*	-3.22	E-03	±	9.36	E-03
				Gross Beta	2.2	E-02 ± 01	E-02		1.3	E-02	±	2.0	E-03
			11/23/87	I-131	<7.	E-02		*	-2.47	E-02	±	3.49	E-02
				Gross Beta	2.4	E-02 ± 0.1	E-02		1.2	E-02	±	7.0	E-03
			11/30/87	I-131	<7.	E-02		*	1.62	E-04	±	1.00	E-02
				Gross Beta	3.5	E-02 ± 0.2	E-02		2.1	E-02	±	3.0	E-03
			12/07/87	I-131	<7.	E-02		*	-8.43	E-03	±	9.78	E-03
				Gross Beta	1.7	E-02 ± 0.1	E-02		1.7	E-02	±	2.0	E-03

* Denotes a result less than the detection limit.



State of Washington
Department of Social and Health Services
Office of Public Health Laboratories
Radiation Laboratory

Location of Facility:
WNP-2-Hanford Reservation

Reporting Period:
October - December 1987
4th Quarter

Exposure Pathway and/or Sample	Split or Duplicate	Location Name	Date	State Results (pCi/m ³)			Licensee Results					
Airborne: Radioiodine and Particulates	Duplicate	Station 8	12/15/87	I-131	<7.	E-02	*	-2.39	E-03	±	6.45	E-03
				Gross Beta	1.0	E-02 ± 0.1	E-02	6.0	E-03	±	1.9	E-03
			12/21/87	I-131	<7.	E-02	*	-1.09	E-04	±	8.02	E-03
				Gross Beta	2.9	E-02 ± 0.1	E-02	2.7	E-02	±	3.0	E-03
			12/28/87	I-131	<7.	E-02	*	-3.44	E-03	±	1.09	E-02
				Gross Beta	3.0	E-02 ± 0.1	E-02	2.9	E-02	±	3.0	E-03
			Quarterly Particulate Composite	Cs-134	<1.	E-03	*	-3.72	E-05	±	2.47	E-04
				Cs-137	<1.	E-03	*	1.48	E-04	±	2.46	E-04
				Be-7	5.	E-02 ± 1.	E-02	4.51	E-02	±	4.52	E-03

* Denotes a result less than the detection limit.



INTERCOMPARISON QUALITY ASSURANCE SAMPLES

January 1987 through December 1987

U. S. ENVIRONMENTAL PROTECTION AGENCY

Las Vegas, Nevada

January 1987 through December 1987

Date	Type/ Unit	Isotope	Known Value	Grand Average	State of Washington
Jan.	Water pCi/l	Gr. Alpha	11.00 ± 5.00	10.15 ± 2.63	13.00 ± 0.00
		Gr. Beta	10.00 ± 5.00	11.19 ± 2.30	13.00 ± 0.00
		Pu-239	16.70 ± 1.67	15.37 ± 3.53	15.80 ± 0.10
		Sr-89	25.00 ± 5.00	23.28 ± 6.34	29.33 ± 2.88
		Sr-90	25.00 ± 1.50	23.33 ± 2.83	23.33 ± 0.58
	Food pCi/kg mg/kg	Sr-90	49.00 ± 10.00	43.06 ± 10.17	50.33 ± 0.58
		I-131	78.00 ± 8.00	80.90 ± 6.23	43.66 ± 0.58*
		Cs-137	84.00 ± 5.00	87.88 ± 5.04	45.66 ± 1.15*
		K-40	980.00 ± 49.00	984.23 ± 70.75	1043.33 ± 15.27
Feb.	Water pCi/l	U	8.00 ± 6.00	8.08 ± 2.36	8.00 ± 0.00
		H-3	4209.00 ± 421.00	4155.66 ± 417.70	4450.00 ± 10.00
		Co-60	50.00 ± 5.00	50.40 ± 4.02	52.00 ± 1.73
		Zn-65	91.00 ± 5.00	93.88 ± 8.14	102.33 ± 1.15
		Ru-106	100.00 ± 5.00	95.01 ± 15.50	98.33 ± 4.04
		Cs-134	59.00 ± 5.00	54.77 ± 3.45	56.00 ± 1.73
		Cs-137	87.00 ± 5.00	87.31 ± 5.42	94.33 ± 1.15
	Milk pCi/l	I-131	9.00 ± 0.90	8.58 ± 1.50	9.00 ± 1.00
Mar.	Water pCi/l	Gr. Alpha	3.00 ± 5.00	3.91 ± 1.34	5.00 ± 0.00
		Gr. Beta	13.00 ± 5.00	12.83 ± 2.36	14.33 ± 0.58
		Ra-226	7.30 ± 1.10	6.96 ± 0.92	7.30 ± 0.72
Apr.	Water pCi/l	Gr. Alpha	30.00 ± 8.00	28.40 ± 8.26	41.30 ± 1.50*
		Gr. Beta	66.00 ± 5.00	7.30 ± 64.50	65.30 ± 1.52
		Ra-226	3.90 ± 0.60	3.75 ± 0.42	++
		U	5.00 ± 6.00	5.49 ± 2.12	5.00 ± 0.00
		Sr-89	19.00 ± 5.00	17.38 ± 4.35	23.00 ± 1.00
		Sr-90	10.00 ± 1.50	9.98 ± 1.60	9.00 ± 0.00
		Co-60	8.00 ± 5.00	9.04 ± 1.95	9.70 ± 0.00
		I-131	7.00 ± 0.70	7.26 ± 1.08	7.67 ± 0.58
		Cs-134	20.00 ± 5.00	18.90 ± 2.60	18.30 ± 0.60
		Cs-137	15.00 ± 5.00	15.68 ± 2.17	16.64 ± 1.15

* = Value outside limits

++ = No data provided



INTERCOMPARISON QUALITY ASSURANCE SAMPLES

U. S. ENVIRONMENTAL PROTECTION AGENCY
Las Vegas, Nevada

Date	Type/ Unit	Isotope	Known Value	Grand Average	State of Washington
May	Water pCi/l	Gr. Alpha	11.00 ± 5.00	9.70 ± 3.05	9.33 ± 0.58
		Gr. Beta	7.00 ± 5.00	7.87 ± 2.16	8.00 ± 0.00
		Sr-89	41.00 ± 5.00	38.96 ± 7.10	43.33 ± 1.52
		Sr-90	20.00 ± 1.50	19.57 ± 2.86	18.00 ± 1.00
June	Water pCi/l	Ra-226	7.30 ± 1.10	6.98 ± 1.23	8.77 ± 0.40
		H-3	2895.00 ± 357.00	2784.83 ± 292.83	++
		Cr-51	41.00 ± 5.00	39.25 ± 13.80	++
		Co-60	64.00 ± 5.00	64.80 ± 4.25	++
		Zn-65	10.00 ± 5.00	10.93 ± 2.32	++
		Ru-106	75.00 ± 5.00	72.58 ± 10.71	++
		Cs-134	40.00 ± 5.00	36.71 ± 3.36	++
		Cs-137	80.00 ± 5.00	79.59 ± 5.19	++
	Milk pCi/l mg/l pCi/l	Sr-89	69.00 ± 5.00	63.70 ± 14.20	68.30 ± 1.50
		Sr-90	35.00 ± 1.50	34.30 ± 5.00	30.00 ± 0.00*
		K-40	1525.00 ± 76.00	1626.00 ± 61.00	1548.00 ± 44.00
		I-131	59.00 ± 6.00	62.00 ± 5.90	62.00 ± 4.04
		Cs-137	74.00 ± 5.00	75.20 ± 5.70	74.00 ± 1.70
July	Water pCi/l	Gr. Alpha	5.00 ± 5.00	4.70 ± 1.40	7.30 ± 1.20
		Gr. Beta	5.00 ± 5.00	6.05 ± 1.80	6.00 ± 0.00
	Food pCi/kg mg/kg pCi/kg	Sr-89	20.00 ± 5.00	20.36 ± 6.97	29.00 ± 4.58*
		Sr-90	30.00 ± 1.50	27.58 ± 3.92	27.30 ± 0.58
		K-40	1680.00 ± 84.00	1730.00 ± 148.00	1786.00 ± 15.00
		I-131	80.00 ± 8.00	81.11 ± 7.29	79.00 ± 0.00
		Cs-137	50.00 ± 5.00	52.07 ± 4.65	51.33 ± 1.53
Aug.	Water pCi/l	U	13.00 ± 6.00	12.40 ± 2.60	13.70 ± 0.10
		Pu-239	5.30 ± 0.53	5.16 ± 0.56	5.83 ± 0.12
		I-131	48.00 ± 6.00	47.19 ± 4.87	**48.00 ± 2.00
	Air pCi/ Filter	Gr. Alpha	10.00 ± 5.00	10.47 ± 2.18	15.33 ± 0.12
		Gr. Beta	30.00 ± 5.00	30.31 ± 4.32	32.67 ± 0.36
		Cs-137	10.00 ± 5.00	10.66 ± 1.86	11.00 ± 0.24
	Water	Gr. Alpha	4.00 ± 5.00	3.85 ± 1.45	6.00 ± 0.00
		Gr. Beta	12.00 ± 5.00	12.00 ± 2.23	14.33 ± 0.58
Sept.		Ra-226	9.70 ± 1.46	9.03 ± 1.34	11.07 ± 0.15

* - Value outside limits

** - Analysis performed / submitted late.

++ - No data provided



INTERCOMPARISON QUALITY ASSURANCE SAMPLES

U. S. ENVIRONMENTAL PROTECTION AGENCY
Las Vegas, Nevada

Date	Type/ Unit	Isotope	Known Value		Grand Average		State of Washington	
Oct.	Blind Water pCi/l	Gr. Alpha	28.00 ±	7.00	27.96 ±	7.52	39.00 ±	1.00*
		Gr. Beta	72.00 ±	5.00	75.22 ±	9.28	77.00 ±	1.00
		Ra-226	4.80 ±	0.72	4.72 ±	0.72	5.07 ±	0.15
		U (Nat)	3.00 ±	6.00	3.37 ±	1.30	3.00 ±	0.00
		Sr-89	16.00 ±	5.00	15.21 ±	3.63	15.00 ±	0.00
		Sr-90	10.00 ±	1.50	9.85 ±	1.29	9.00 ±	0.00
		Co-60	16.00 ±	5.00	16.57 ±	2.23	17.00 ±	0.00
		Cs-134	16.00 ±	5.00	15.67 ±	2.59	16.33 ±	0.58
		Cs-137	24.00 ±	5.00	24.29 ±	2.20	24.33 ±	1.15
	Water pCi/l	H-3	4492.00 ±	449.00	4386.00 ±	299.00	4461.00 ±	93.00
		Cr-51	70.00 ±	5.00	68.80 ±	8.90	73.30 ±	3.10
		Co-60	15.00 ±	5.00	16.40 ±	2.00	17.30 ±	0.60
		Zn-65	46.00 ±	5.00	47.20 ±	4.70	52.00 ±	0.00
		Ru-106	61.00 ±	5.00	60.20 ±	9.70	64.70 ±	0.24
		Cs-134	25.00 ±	5.00	24.40 ±	2.50	25.00 ±	1.70
		Cs-137	52.00 ±	2.10	51.80 ±	3.00	53.30 ±	3.20
Nov.	Water pCi/l	Gr. Alpha	7.00 ±	5.00	6.34 ±	2.11	9.67 ±	0.58
		Gr. Beta	19.00 ±	5.00	++		22.33 ±	1.15
Dec.	Water pCi/l	Ra-226	4.80 ±	0.72	4.71 ±	0.87	5.30 ±	0.10
		I-131	26.00 ±	6.00	26.61 ±	3.14	25.67 ±	1.53

* - Value outside limits

++ - No Data Provided

