

REPORT ON RADIOACTIVE ESTIMATES

Facility: Dresden Nuclear Power Station-Unit 2/3

DISCRET NO. 1 50-717, 50-249

YEAR: 1979

1. Casework Effluents	UNIT	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. L.T.
1. Gross Radioactivity Releases									
a) Total Release	curies	1657.1	1489.0	3101.6	4825.6	2079.2	1623.0	18770.7	6.60.1.1. (1)
2/3 chimney									
b) (Daily grab sample)	uCi/sec	3.0E+03	1.8E+03	2.3E+03	2.7E+03	2.0E+03	1.7E+03	3.8E+03	6.60.1.1. (2)
c) Isotopes Released									6.60.1.1. (4)
Kr-85m	curies	66.9	71.7	45.3	73.8	67.8	51.8	377.3	
Kr-87	curies	86.7	132.3	105.5	98.9	94.0	67.8	570.0	
Kr-84	curies	186.9	122.5	105.5	211.8	211.5	150.3	980.3	
Kr-133	curies	72.9	91.2	54.6	164.6	75.7	54.7	518.3	
Kr-135	curies	502.3	455.7	261.9	817.2	344.6	470.9	2953.6	
Kr-135m	curies	434.1	361.2	374.9	628.0	211.2	160.9	1950.3	
Kr-133	curies	2201.5	2280.6	2025.9	3229.3	872.4	202.0	11628.7	
d) Percent of Chimney Limit	%	0.15	0.15	0.15	0.22	0.09	0.07	0.13	6.60.1.1. (3)
e) Average Release Rate	uCi/sec	1.4E+03	1.3E+03	1.7E+03	1.8E+03	1.0E+02	6.1E+02	1.7E+03	
2. Chimney Indirect Releases									6.60.1.1. (1)
a) Isotopes Released									
I-131	curies	1.6E-01	1.6E-01	1.5E-01	1.1E-01	1.5E-01	1.2E-01	8.5E-01	
I-133	curies	1.3E-01	1.2E-01	1.2E-01	7.9E-01	1.8E-01	1.2E-01	6.4E-01	
I-135	curies	2.3E-01	2.1E-01	2.1E-01	5.6E-01	3.1E-01	1.8E-01	1.5E+01	
b) Percent of Chimney Limit	%	1.39	1.35	1.25	1.06	1.43	1.08	1.23	6.60.1.1. (3)
c) Average Release Rate	uCi/sec	5.9E-02	5.8E-02	5.2E-02	4.3E-02	6.0E-02	4.5E-02	5.3E-02	

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REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station - Unit 2/3

PERMIT NO.: 54-277, 50-259

YEAR: 1972

1. Gaseous Effluents(continued)		UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
1. Chimney Particulate Release		microcuries								
a) Gross Radioactivity(A-Y)			222.16	431.28	389.48	548.25	618.65	431.29	2521.16	6.60.1.f.(1)
b) Gross Alpha Radioactivity		mCi								
c) Isotopes Released										6.60.1.f.(1)
Cr-51		mCi	---	---	---	---	---	2.91	2.91	
Co-57		mCi	3.11	1.52	0.59	0.91	0.61	1.94	8.68	
Co-60		mCi	---	---	---	---	---	0.81	0.81	
Co-61		mCi	30.62	2.26	4.21	3.25	14.25	4.05	65.44	
Co-70		mCi	302.22	389.94	214.19	154.29	209.07	157.50	1512.12	
Kr-85		mCi	1.37	0.88	0.94	0.68	0.91	0.68	5.46	
La-138		mCi	51.97	21.29	18.24	20.86	22.29	22.29	221.11	
Ce-134/Ce-136		mCi	1.23/---	---/1.07	---/---	---/---	---/---	---/---	1.23/1.07	
Pr-141		mCi	2.25	1.82	2.21	5.39	11.72	3.15	26.39	
Am-240		mCi	250.84	191.45	282.90	221.72	279.52	243.63	1677.68	
Co-141		mCi	3.25	2.09	22.28	---	4.92	3.62	29.76	
Fe-55/Mn-55		mCi	---/---	---/---	---/---	---/---	---/---	4.92/4.62	4.92/4.62	
Pu-103		mCi	---	0.63	1.07	---	---	1.81	3.51	
d) Percent of Chimney Limit		%	6.31	5.31	3.37	5.22	5.48	3.92	5.22	6.60.1.f.(1)
e) Average Release Rate		mCi/sec	2.7E-01	2.4E-01	2.3E-01	2.1E-01	2.1E-01	1.2E-01	2.2E-01	
2. Vent Stack Gaseous Release										6.60.1.f.(1)
a) Isotopes Released										
I-131		curies	1.8E-02	1.2E-02	2.2E-02	1.2E-02	1.2E-02	2.0E-02	1.0E-01	
I-133		curies	5.2E-02	2.4E-02	2.5E-02	5.5E-02	8.0E-02	1.1E-01	3.8E-01	
I-135		curies	1.4E-01	1.0E-01	4.1E-02	2.2E-02	1.6E-01	2.8E-01	7.9E-01	
b) Percent of Vent Stack Limit		%	3.56	4.04	6.34	3.72	5.49	6.18	5.15	6.60.1.f.(1)
c) Average Release Rate		mCi/sec	6.2E-01	4.9E-01	8.3E-01	4.5E-01	6.8E-01	2.4E-01	6.1E-01	

REPORT OF RADIOACTIVE EFFLUENTS

Facility: Dresden Nuclear Power Station - Unit 2/3

Report Nos.: 50-237, 50-239

Year: 1979

1. Gaseous Effluents (Continued)	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
5. Vent Stack Particulate Release	micrograms								
(a) Gross Radioactivity (Bq)		60.11	33.08	15.29	73.57	63.65	22.12	270.92	
(b) Gross Alpha Radioactivity	uCi								6.60.1.f.(1)
(c) Isotopes Released									
Co-51	mCi	7.53	1.06	2.31	2.01	1.40	2.02	16.73	6.60.1.f.(1)
Co-56	mCi	2.79	0.93	0.75	2.09	1.81	1.36	9.44	
Co-58	mCi	0.57	0.21	0.50	0.68	0.78	0.69	3.43	
Fe-59	mCi	0.21	---	0.23	0.38	0.72	0.57	2.11	
Co-60	mCi	15.22	6.53	3.86	9.76	7.81	11.86	54.74	
Fe-60	mCi	---	---	0.12	0.18	0.77	0.72	0.74	
Co-60	mCi	1.22	4.21	3.41	1.48	2.16	4.92	17.72	
Si-30	mCi	0.06	0.77	0.79	0.17	0.74	0.37	1.79	
Si-32	mCi	0.34	---	0.28	1.20	1.73	0.48	4.23	
Co-60	mCi	0.77	1.62	0.46	1.38	2.32	0.52	6.82	
Fe-60	mCi	0.44	---	0.17	1.16	1.47	0.16	3.40	
(Continued on next page)									
(d) Percent Vent Stack Limit	%	18.70	19.30	11.34	11.07	20.46	16.22	16.67	6.60.1.f.(1)
(e) Average Release Rate	uCi/sec	3.1E-02	1.3E-02	1.4E-02	1.3E-02	2.5E-02	1.9E-02	1.8E-02	
6. Sum of Iodine and Particulate									
a) Percent of Chimney Limit	%	7.70	8.88	6.63	6.33	6.89	5.07	6.63	6.60.1.f.(2)
b) Percent of Vent Stack Limit	%	25.79	16.36	18.73	15.79	25.95	22.40	19.92	
7. Gaseous Effluents									
a) Release	uCi/sec	9.1E+00	6.4E+00	1.1E+01	2.7E+01	3.7E+01	3.8E+01	1.4E+02	
b) Average Release Rate	uCi/sec	3.5E+00	2.4E+00	4.3E+00	1.0E+01	2.0E+01	1.4E+01	9.1E+00	
c) Percent Tech Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	

LIST OF RADIOACTIVE ISOTOPES

REMARKS: DUNNION WENT TO THE STATION 10:00 PM

DISCUSS PWS: 40-117, 40-120

JAN 1979

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REPORT OF RADIOACTIVE EFFLUENTS

PLANT: Dresden Nuclear Power Station-Units 2/3

PERMIT NO.: 50-217, 50-249

YEAR: 1979

I. Gaseous Effluents (continued)		UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. 2.2.
B. Gross Radioactivity Release Units 2/3 Vent Stack										1
a) Total Release	curies	371.03	289.20	225.85	179.25	250.15	183.11	1509.59	5.60.1.9. (1)	
b) Maximum Release Rate (daily arith. avg.)	uCi/sec	1.8E+02	1.2E+02	1.2E+02	9.1E+01	1.2E+02	1.2E+02	1.8E+02	5.60.1.9. (2)	
c) Isotopes Released									5.60.1.9. (4)	
Kr-85m	curies	1.88	1.22	2.05	1.92	---	---	2.12		
Kr-87	curies	---	---	---	---	11.76	---	11.76		
Kr-88	curies	---	---	---	---	---	---	---		
Xe-133	curies	12.20	6.45	17.72	6.37	11.29	6.11	90.85		
Xe-135	curies	211.20	126.10	78.69	95.38	144.89	98.79	126.54		
Xe-135m	curies	162.75	143.42	126.38	109.36	112.44	80.21	891.54		
Xe-133	curies	---	---	---	---	---	---	---		
d) Percent of Vent Stack Limit	%	0.15	0.12	0.10	0.07	0.12	0.07	0.11	5.60.1.9. (3)	
e) Average Release Rate	uCi/sec	1.4E+02	1.1E+02	8.7E+01	6.7E+01	1.1E+02	6.7E+01	2.3E+01		

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: BROWNS FUELED NUCLEAR POWER STATION - UNIT 2/1

WASTE NOS.: 50-232, 50-260

YEAR: 1979

11. Liquid Effluents	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity (Bq)									
a) Total Release ($\frac{1}{2}$ Pad-out)	Curie	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	
b) Average Concentration Released	ucl/ml								
c) Maximum Concentration Released	ucl/ml								
d) Percent of Tech Spec Limit based on average conc. release	%								
2. Tritium									
a) Total Release	Curie								
b) Average Concentration Released	ucl/ml								
c) Percent of Tech Spec Limit	%								
3. Dissolved Noble Gases									
a) Total Release	Curie								
b) Average Concentration Released	ucl/ml								
c) Percent of Tech Spec Limit	%								
4. Gross Alpha Radioactivity									
a) Total Release	Curie								
b) Average Concentration Released	ucl/ml								
5. Volume of Liquid Waste to Discharge Canal	Liters								
6. Volume of Dilution Water	Liters								

REPORT OF RADIOACTIVE RESULTS

ICLH/1: Western Nuclear Power Station - Unit 2/3

DUPLICATE FILE: 60-241, 60-77

YEAR: 1979

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REPORT OF RADIOACTIVE EFFLUENTS

Facility: Dresden Nuclear Power Station - Unit 2/3

Report Period: 01-01, 01-01

Year: 1979

12. Liquid Effluents (continued)	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
8. Gross Radioactivity (5 f)									
100 Service H ₂ O Heat Exchanger	millicuries	9.31	2.89	11.17	21.78	8.42	19.40	72.96	
a) Total Release									
b) Average Concentration Released	mc/ml	5.38-11	1.7E-11	6.6E-11	1.6E-10	6.3E-11	1.4E-10	7.9E-11	
c) Maximum Concentration Released	mc/ml	8.6E-07	4.3E-07	1.0E-06	1.6E-06	1.3E-06	1.8E-06	1.6E-06	
d) Percent of Tech Spec Limit	%	0.06	0.02	0.02	0.16	0.07	0.16	0.08	
based on average conc released									
9. Iodine									
a) Total Release	curies	2.3E-02	4.0E-02	7.0E-02	1.0E-01	3.8E-02	4.9E-02	3.3E-01	
b) Average Concentration Released	mc/ml	1.4E-07	2.3E-10	4.1E-10	2.1E-10	4.4E-10	2.3E-10	3.9E-10	
c) Percent of Tech Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	
10. Dissolved Noble Gases									
a) Total Release	curies	NA	NA	NA	NA	NA	NA	NA	
b) Average Concentration Released	mc/ml	NA	NA	NA	NA	NA	NA	NA	
c) Percent of Tech Spec Limit	%	NA	NA	NA	NA	NA	NA	NA	
11. Gross Alpha Radioactivity									
a) Total Release	curies	3.0E-06	1.3E-06	2.6E-06	9.1E-06	4.0E-06	1.4E-05	3.6E-05	
b) Average Concentration Released	mc/ml	1.8E-16	7.0E-15	1.3E-14	4.4E-14	1.1E-14	1.0E-13	2.6E-14	
12. Volume of Liquid Waste to Discharge Canal	liters	3.7E+03	2.8E+03	1.6E+03	2.8E+03	3.9E+03	2.1E+03	1.6E+04	
13. Volume of Dilution Water	liters	1.7E+11	1.7E+11	1.7E+11	1.6E+11	1.7E+11	1.6E+11	7.7E+11	

*Prior to dilution by 1275 acre cooling lake and subsequent discharge to Illinois River.

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: Dresden Nuclear Power Station

KEY NUMS: 90-10, 90-237, 90-449

REF: 1272

[illegible]

DRESDEN NUCLEAR POWER STATION**SOLID WASTE DISPOSITION**YEAR 1979

MONTH	NUMBER OF SHIPMENTS	MODE OF TRANSPORTATION	DESTINATION
JULY	12	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
JULY	1	Motor Freight (Exclusive Use Only)	Richland, Wash.
AUGUST	26	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
AUGUST	5	Motor Freight (Exclusive Use Only)	Beatty, NV
AUGUST	3	Motor Freight (Exclusive Use Only)	Richland, Wash.
SEPTEMBER	11	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
SEPTEMBER	1	Motor Freight (Exclusive Use Only)	Richland, Wash.
OCTOBER	3	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
NOVEMBER	1	Motor Freight (Exclusive Use Only)	Barnwell, S.C.
DECEMBER	4	Motor Freight (Exclusive Use Only)	Barnwell, S.C.

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: INDIAN BUREAU MARINE STATION - UNIT 1

WEEKLY NO. 1 50 - 10

YEAR: 1979

1. Gaseous Effluents	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity Release									
a) Total Release	curies	77.1	77.1	77.1	84.4	77.8	8.2	177.5	
b) Maximum Release Rate (daily, week, annual)	uCi/sec	5.7E+02	---	---	1.0E+01	1.7E+02	1.7E+01	6.7E+02	
c) Isotopes Released									
Kr-85m	curies	---	---	---	---	---	---	---	
Kr-87	curies	---	---	---	---	---	---	---	
Kr-88	curies	---	---	---	---	---	---	---	
Xe-133	curies	77.1	---	---	84.4	77.8	8.2	177.5	
Xe-135	curies	---	---	---	---	---	---	---	
Xe-135m	curies	---	---	---	---	---	---	---	
Xe-138	curies	---	---	---	---	---	---	---	
d) Percent of Chimney Limit	%	0.01	---	---	0.01	0.01	0.01	0.01	
e) Average Release Rate	uCi/sec	2.7E+01	---	---	1.2E-01	4.9E+00	2.7E+00	1.1E+01	
2. Iodine Releases									
a) Isotopes Released									
I-131	curies	2.7E-04	2.7E-04	2.7E-04	2.9E-04	3.4E-04	3.5E-04	1.8E-03	
I-133	curies	---	---	---	---	---	---	---	
I-135	curies	---	---	---	---	---	---	---	
b) Percent of Chimney Limit	%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
c) Average Release Rate	uCi/sec	1.0E-04	1.0E-04	1.0E-04	1.1E-04	1.3E-04	1.2E-04	1.1E-04	

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: INDIAN COLUMBIAN POWER STATION - UNIT 1

PERMIT NO.: CO-10

YEAR: 1979

1. Gaseous Effluents (continued)	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
3. Particulate Releases	milli-curie								
a) Gross Radioactivity (Bq)		4.47	1.32	0.01	0.92	2.33	1.48	11.53	
b) Gross Alpha Radioactivity	mCi								
c) Isotopes Released	mCi								
Co-51	mCi	---	---	---	---	---	---	---	
Co-57	mCi	0.61	0.11	0.01	0.02	0.21	0.06	1.08	
Co-58	mCi	---	---	---	---	---	---	---	
Co-60	mCi	1.90	0.04	0.38	0.35	0.37	0.74	4.78	
Si-32	mCi	0.23	0.12	0.01	0.04	0.10	0.03	0.64	
Si-30	mCi	0.18	0.04	0.01	0.01	0.01	0.01	0.28	
Co-59	mCi	---	---	---	---	---	---	---	
Co-60	mCi	---	---	---	---	---	---	---	
Co-61	mCi	---	---	---	---	---	---	---	
Co-62	mCi	---	---	---	---	---	---	---	
Co-64	mCi	---	---	---	---	---	---	---	
Co-66	mCi	---	---	---	---	---	---	---	
Co-67	mCi	0.62	0.10	0.02	0.28	0.26	0.12	1.42	
Co-68	mCi	1.04	0.24	0.02	0.22	1.12	0.32	3.28	
Co-70	mCi	---	---	---	---	---	---	---	
Co-72	mCi	---	---	---	---	---	---	---	
Co-74	mCi	---	---	---	---	---	---	---	
d) Percent of chimney limit	%	0.07	0.02	0.01	0.01	0.04	0.02	0.03	
e) Average release rate	millicurie	3.7E-03	5.7E-04	1.2E-04	1.4E-04	0.6E-04	5.3E-04	1.7E-04	
h. Sum of Isotopes & Particulates									
a) Percent of chimney limit	%	0.07	0.03	0.02	0.02	0.04	0.03	0.03	
4. Gaseous Tritium									
a) Total Release	curies	710	710	710	710	710	710	710	
b) Average Release Rate	curies/sec	---	---	---	---	---	---	---	

REPORT OF RADIOACTIVE EFFLUENTS

FACILITY: INDIAN HAWAIIAN POWER STATION - UNIT 1

SHEET NO. 1 70-10

YEAR: 1979

II. Liquid Effluents	UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SPEC. REF.
1. Gross Radioactivity (Bq)									
a) Total Release	Curies	2.5E-06	2.7E-03	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	3.0E-03	
b) Average Concentration Released	uci/ml	1.7E-11	2.0E-11					6.0E-11	6.60.1.e.(1)
c) Maximum Concentration Released	uci/ml	5.0E-09	2.2E-08					2.7E-08	6.60.1.e.(5)
d) Percent of Tech Spec Limit	%	0.01	0.10					0.09	6.60.1.e.(5)
Based on average conc. release									6.60.1.e.(6)
2. Tritium									
a) Total Release	Curies	2.5E-05	1.6E-05					2.0E-05	6.60.1.e.(8)
b) Average Concentration Released	uci/ml	1.7E-12	5.0E-12					4.0E-12	
c) Percent of Tech Spec Limit	%								
3. Dissolved Noble Gases									
a) Total Release	Curies	NONE	NONE					NONE	
b) Average Concentration Released	uci/ml	---	---					---	
c) Percent of Tech Spec Limit	%	---	---					---	
4. Gross Alpha Radioactivity									
a) Total Release	Curies	1.7E-07	2.4E-06					2.5E-06	
b) Average Concentration Released	uci/ml	5.5E-15	9.7E-15					5.0E-15	
5. Volume of Liquid Waste to Discharge Canal	Liters	6.7E+03	1.7E+04					7.7E+04	6.60.1.e.(2)
6. Volume of Dilution Water	Liters	2.7E+10	2.0E+10					3.0E+10	6.60.1.e.(3)

FLOW OF RADIOACTIVE RESIDUES

FACILITY: Dungeness Nuclear Power Station - Unit 1

DECLASS. AUTH: 50 - 10

YEAR: 1979

11. Liquid Effluents (continued)

11. Liquid Effluents (continued)		UNITS	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	6 MO. TOTAL	TECH. SUC. REP.
7. Isotopes Released										
	curies				NO DISCHARGE	NO DISCHARGE	NO DISCHARGE	NO DISCHARGE		
Pb-210	mCi	0.25	2.09						2.34	
Ce-140	mCi	0.01	0.08						0.09	
Fe-59	mCi	---	---						---	
Co-60	mCi	---	---						---	
Zn-65	mCi	0.06	0.11						0.17	
Si-39	mCi	---	---						---	
Si-90	mCi	0.15	1.30						1.45	
Zr-95	mCi	0.01	0.07						0.08	
Mn-55	mCi	---	---						---	
Ba-133	mCi	---	---						---	
I-131	mCi	---	---						---	
Cs-134	mCi	0.01	0.09						0.10	
Cs-137	mCi	0.03	0.11						0.14	
Ba-140	mCi	---	---						---	
La-140	mCi	---	---						---	
Co-141	mCi	---	---						---	
Co-144	mCi	---	---						---	

DRESDEN Station

1979 Report of Occupational Personnel Radiation Doses*
Commonwealth Edison Company

Station Employees

<u>Job Function</u>	<u>Work Function</u>					<u>Total by Job Function # of People/Man-Ren</u>
	<u>Reactor Operations & Surveillance # of People/Man-Ren</u>	<u>Routine Maint. # of People/Man-Ren</u>	<u>Inservice Inspection # of People/Man-Ren</u>	<u>Waste Processing # of People/Man-Ren</u>	<u>Refueling # of People/Man-Ren</u>	
Maintenance	17/25.1	189/765.8	1/0.5	1/2.0	7/10.4	215/803.8
Operating	127/106.9	12/17.7	5/7.1	19/28.4	30/63.3	193/223.4
Health Physics	4/6.5	14/23.3	4/6.5	23/37.3	12/19.6	57/93.2
Supervision	52/11.6	92/80.9	—	—	5/10.0	149/102.5
Engineering	134/64.9	39/7.2	51/9.5	7/1.3	23/4.3	253/87.3

Company Employees other than Station Employees

Special Maintenance	—	219/48.9	—	—	—	219/48.9
Engineering	270/10.1	—	—	—	—	270/10.1

Contract Workers

Routine Maintenance	—	2074/642.9	366/113.5	—	—	2440/756.4
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*Reported in accordance with U.S. NRC Regulatory Guide 1.16 (Rev. 4), 1975.