

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

TURKEY POINT PLANT UNITS 3 & 4

DOCKET NO. 50-250, 251

DADE COUNTY, FLORIDA

7-1-79 TO 12-31-79

8003180422

TABLE 1

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
1. Air Filters													
1.1 Air Particulates	pCi/m <sup>3</sup>	Gross $\beta$	8	204	204	0.017	0.004-0.043	T-51: Homestead Bay-front Park, NW, 2mi.	0.018	0.007-0.029	0.017	0.009-0.039	None
1.1.A Air Iodines	pCi/m <sup>3</sup>	<sup>131</sup> I	8	206	206	ND	NA	NA	ND	NA	ND	NA	None
1.2 Direct Radiation	$\mu$ Rem/hr	$\gamma$	11	54	54	4	4-8	T-64: Natoma Substation, ENE, 30 miles	6	4-8	6	4-8	None
1.3 Precipitation	pCi/L	Gross $\beta$ -DS	4	24	24	5	ND-7	T-52: Florida City Substation, W., 8mi.	4	ND-7	ND	NA	None
		Gross $\beta$ -UDS	4	24	24	ND	NA	NA	NA	NA	ND	NA	None
		$\gamma$ Scan	4	24	23	ND	NA	NA	NA	NA	ND	NA	None
		<sup>3</sup> H*	4	24	21	ND	NA	NA	NA	NA	ND	NA	None

\*Three Nov. <sup>3</sup>H analyses were not available due to lab. error.

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
2.0 Water													
2.1.1 Estuarine	pCi/L	$^3\text{H}$	10	21	21	205	<200-4100	T-71: Girl Scout Camp Onsite	1366	<200-4100	NA	NA	One*
		$^{40}\text{K}$	10	21	21	352	ND-430	T-71: Girl Scout Camp Onsite	363	270-430	NA	NA	None
		$^{89}\text{Sr}$	10	21	10	ND	NA	NA	NA	NA	NA	NA	None
		$^{90}\text{Sr}$	10	21	10	ND	NA	NA	NA	NA	NA	NA	None
2.1.2 Cooling Canal	pCi/L	$^3\text{H}$	2	12	12	6725	4000-12100	T-84: Discharge Canal South side of bridge	7566	4000-12100	NA	NA	None
		$^{40}\text{K}$	2	12	12	393	330-430	T-97: Loch Rosetta Onsite	398	380-420	NA	NA	None
		$^{89}\text{Sr}$	2	12	2	ND	NA	NA	NA	NA	NA	NA	None
		$^{90}\text{Sr}$	2	12	2	ND	NA	NA	NA	NA	NA	NA	None
2.1.3 Fresh Water	pCi/L	Gross $\beta$ -DS	2	12	12	151	4-410	T-75; F1, City Canal, NW, 1.5 miles	295	180-410	NA	NA	None
		Gross $\beta$ -UDS	2	12	12	ND	NA	NA	NA	NA	NA	NA	None
		$^3\text{H}$	2	12	10	118	<200-410	T-75 F1, City Canal, NW, 1.5 miles	295	<200-410	NA	NA	None

\* A special sample taken after unusually high  $^3\text{H}$  results were obtained on the routine sample, revealed a concentration of <200 pCi/L.

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			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
2.2 Potable Water Wells	pCi/L	Gross $\beta$ -DS	3	6	6	10	5-24	T-57: Dolan's Farm, WNW, 4.5 miles	21	17-24	NA	NA	None
		Gross $\beta$ -UDS	3	6	6	ND	NA	NA	NA	NA	NA	NA	None
		$^3\text{H}$	3	6	6	<200	<200	NA	NA	NA	NA	NA	None
2.3 Ground Water Wells	pCi/L	$^3\text{H}$	6	12	12	460	<200-2100	T-88: Well E-14	1230	1210-1250	NA	NA	None
		$^{87}\text{Sr}$	6	12	6	ND	NA	NA	NA	NA	NA	NA	None
		$^{90}\text{Sr}$	6	12	6	ND	NA	NA	NA	NA	NA	NA	None
		$^{40}\text{K}$	6	12	12	347	ND-390	T-88: Well E-14	350	310-390	NA	NA	None
3. Bottom Sediments													
3.1 Cooling Canal	pCi/Kg	$^{58}\text{Co}$	2	4	4	ND	NA	NA	NA	NA	NA	NA	None
		$^{60}\text{Co}$	2	4	4	430	ND-430	T-85: Discharge Canal, at W. side of 90° bend	430	ND-430	NA	NA	None
		$^{226}\text{Ra}$	2	4	4	2350	1700-3100	T-84: Discharge Canal, South side of bridge	2500	1900-3100	NA	NA	None

TABLE 1

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
3.1 Cooling Canal (Continued)	pCi/kg	<sup>232</sup> Th	2	4	4	ND	NA	NA	NA	NA	NA	NA	None
		<sup>40</sup> K	2	4	4	800	ND-800	T-84: Discharge Canal South side of bridge	800	ND-800	NA	NA	None
		<sup>89</sup> Sr	2	4	2	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	2	4	2	ND	NA	NA	NA	NA	NA	NA	None
3.2 Estuarine	pCi/kg	<sup>226</sup> Ra	7	7	7	1394	660-1900	T-81: Card Sound, New discharge canal	1900*	NA	NA	NA	None
		<sup>232</sup> Th	7	7	7	ND	NA	NA	NA	NA	NA	NA	None
		<sup>40</sup> K	7	7	7	ND	NA	NA	NA	NA	NA	NA	None
		<sup>60</sup> Co	7	7	7	ND	NA	NA	NA	NA	NA	NA	None
		<sup>89</sup> Sr	7	7	5	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	7	7	5	ND	NA	NA	NA	NA	NA	NA	None
4. Aquatic Biota													
4.1 Crustacea (f)	pCi/kg	<sup>40</sup> K	6	5	5	2280	1900-2500	T-59: Elliott Key	2500*	NA	NA	NA	None
								T-94: Pumpkin Key	2500*	NA	NA	NA	None
								T-95: Long Arsenicker Key	2500*	NA	NA	NA	None

\*One Sample

TABLE 1

Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
4.1 Crustacea (f) (Continued)	pCi/kg	$^{226}\text{Ra}$	6	5	5	524	420-600	T-69: So., End of Elliott Key (Caesar's Creek)	600*	NA	NA	NA	None
								T-95: Long Arsenicker Key	600*	NA	NA	NA	None
		$^{232}\text{Th}$	6	5	5	ND	NA	NA	NA	NA	NA	NA	None
		$^{106}\text{Ru}$	6	5	5	ND	NA	NA	NA	NA	NA	NA	None
		$^{89}\text{Sr}$	6	5	2	ND	NA	NA	NA	NA	NA	NA	None
		$^{90}\text{Sr}$	6	5	2	ND	NA	NA	NA	NA	NA	NA	None
4.2.A Fish - Carnivore (e), (h)	pCi/kg	$^{40}\text{K}$	6	6	6	3283	2600-5100	T-81: Card Sound, New discharge canal	5100*	NA	NA	NA	None
		$^{226}\text{Ra}$	6	6	6	1000	ND-1000	T-66: Card Sound, North of Causeway	1000*	NA	NA	NA	None
		$^{232}\text{Th}$	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		$^{106}\text{Ru}$	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		$^{89}\text{Sr}$	6	6	2	ND	NA	NA	NA	NA	NA	NA	None
		$^{90}\text{Sr}$	6	6	2	ND	NA	NA	NA	NA	NA	NA	None

\* One Sample

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
4.2.8 Fish - (c) Herbivore	pCi/kg	<sup>40</sup> K	6	5	5	2940	2500-3400	T-95: Long Arsenicker Key	3400*	NA	NA	NA	None
		<sup>226</sup> Ra	6	5	5	825	ND-1800	T-69: South End of Elliott Key (Caesar's Creek)	1800*	NA	NA	NA	None
		<sup>232</sup> Th	6	5	5	440	ND-1000	T-69: South End of Elliot Key	1000*	NA	NA	NA	None
		<sup>106</sup> Ru	6	5	5	ND	NA	NA	NA	NA	NA	NA	None
		<sup>89</sup> Sr	6	5	2	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	6	5	2	ND	NA	NA	NA	NA	NA	NA	None
4.3.8 Other - Turtle Grass		<sup>40</sup> K	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>232</sup> Th	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>106</sup> Ru	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>134</sup> Ce	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>60</sup> Co	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>89</sup> Sr	6	6	4	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	6	6	4	ND	NA	NA	NA	NA	NA	NA	None

\* One Sample

TABLE 1

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
4.3.B Other - Sponge	pCi/kg	<sup>40</sup> K	6	6	6	1833	1600-2100	T-93: Pelican Bank Card Sound, E., 1.7mi	2100*	NA	NA	NA	None
		<sup>232</sup> Th	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>137</sup> Cs	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>60</sup> Co	6	6	6	ND	NA	NA	NA	NA	NA	NA	None
5. Terrestrial Biota													
5.2.1 Small Animal (d)	pCi/kg	<sup>40</sup> K	1	1	1	2500	NA	T-58: Onsite Entrance Road; WNW, 1 mile	2500*	NA	NA	NA	None
		<sup>232</sup> Th	1	1	1	ND	NA	NA	NA	NA	NA	NA	None
		<sup>137</sup> Cs	1	1	1	130	NA	T-58: Onsite Entrance Road; WNW, 1 mile	130*	NA	NA	NA	None
5.2.2 Food Crops (g)	pCi/kg	<sup>40</sup> K	3	1	1	1200	NA	T-52: Fl. City Substation; W., 8 miles	1200*	NA	NA	NA	None
		<sup>232</sup> Th	3	1	1	ND	NA	NA	NA	NA	NA	NA	None
		<sup>137</sup> Cs	3	1	1	ND	NA	NA	NA	NA	NA	NA	None

\* One Sample



TABLE 1

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
5.2.2 Food Crops (Continued) (g)	pCi/kg	<sup>89</sup> Sr	3	1	1	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	3	1	1	20	NA	T-52: Fl. City Substation; W., 8 miles	20*	NA	NA	NA	None
5.2.3 Mangrove Leaves	pCi/kg	<sup>40</sup> K	7	7	7	4243	2500-8200	T-72: Boy Scout Camp, Onsite	8200*	NA	NA	NA	None
		<sup>232</sup> Th	7	7	7	ND	NA	NA	NA	NA	NA	NA	None
		<sup>137</sup> Cs	7	7	7	ND	NA	NA	NA	NA	NA	NA	None
		<sup>89</sup> Sr	7	7	3	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	7	7	3	15	ND-22	T-59: Elliott Key	22*	NA	NA	NA	None
5.3 Soil	pCi/kg	<sup>226</sup> Ra	7	7	7	1671	800-2300	T-56: Princeton Substation; (SW 248 St.) WNW, 8.5 miles	2300*	NA	NA	NA	None
								T-57: Dolan's Farm, WNW, 4.5 miles	2300*	NA	NA	NA	None
								T-64: Natoma Substation, ENE, 30 miles	2300*	NA	NA	NA	None

\* One Sample

TABLE 1

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Medium or Pathway Sampled	Unit	Analysis for	Number of			All Indicator Locations		Location with Highest Mean			Control (a) Location		Number of Nonroutine Reported Measurements
			Sites	Samples	Analyses	Mean	Range	Sample Location Distance & Direction	Mean	Range	Mean	Range	
5:3 Soil (Continued)	pCi/kg	<sup>232</sup> Th	7	7	7	400	ND-400	T-56: Princeton Substation (SW 248 St.), WNW, 8.5 miles	400*	NA	NA	NA	None
		<sup>137</sup> Cs	7	7	7	440	ND-1400	T-56: Princeton Substation (SW 248 St.), WNW, 8.5 miles	1400*	NA	NA	NA	None
		<sup>90</sup> Sr	7	7	6	ND	NA	NA	NA	NA	NA	NA	None
		<sup>90</sup> Sr	7	7	6	ND	NA	NA	NA	NA	NA	NA	None
NOTES:													
(a) T-64; Matoma Substation,		Miami, ENE,	30 miles										
(b) ND = Non Detectable		NA = Non Applicable											
(c) Mullet													
(d) Opossum													
(e) Snapper													
(f) Blue Crab													
(g) Malanga													

\* One Sample