FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

1983

ANNUAL ENVIRONMENTAL OPERATING REPORT

RADIOLOGICAL

IE25
11

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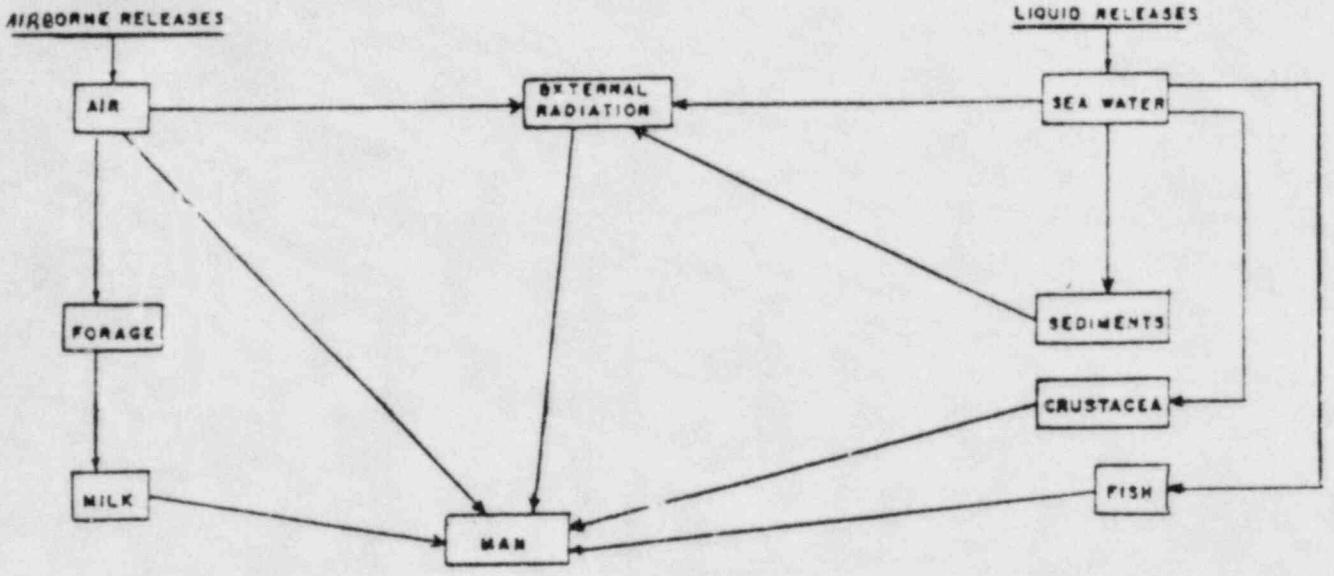
TABLE OF CONTENTS

I.	Introduction	1
	List of Sampling Stations	3
	Site and Area Maps	5
	Sample Station Locations	7
II.	Milk and Green Leafy Vegetable Census	9
III.	Media Other Than External Radiation	10
	Air Inhalation Pathway	11
	Precipitation Pathway	19
	Sea Water Pathway	22
	River Water Pathway	28
	Ground Water Pathway	31
	Potable Water Pathway	34
	Shoreline External Sediment Pathway	38
	Seafood Chain Pathway (Marine Plants)	45
	Ingestion Pathways	
	Crab	50
	Carnivous Fish	55
	Herbivorous Fish	60
	Oysters	65
	Shrimp	69
	Milk	73
	Animal	77
	Food Crops (Citrus)	81
	Food Crops (Watermelon)	83
	Food Chain Pathways	
	Grasses	85
	Soil	89
	Meat	90
	Poultry	92
	Eggs	94
	Green Leafy Vegetables	96
IV.	External Radiation	101

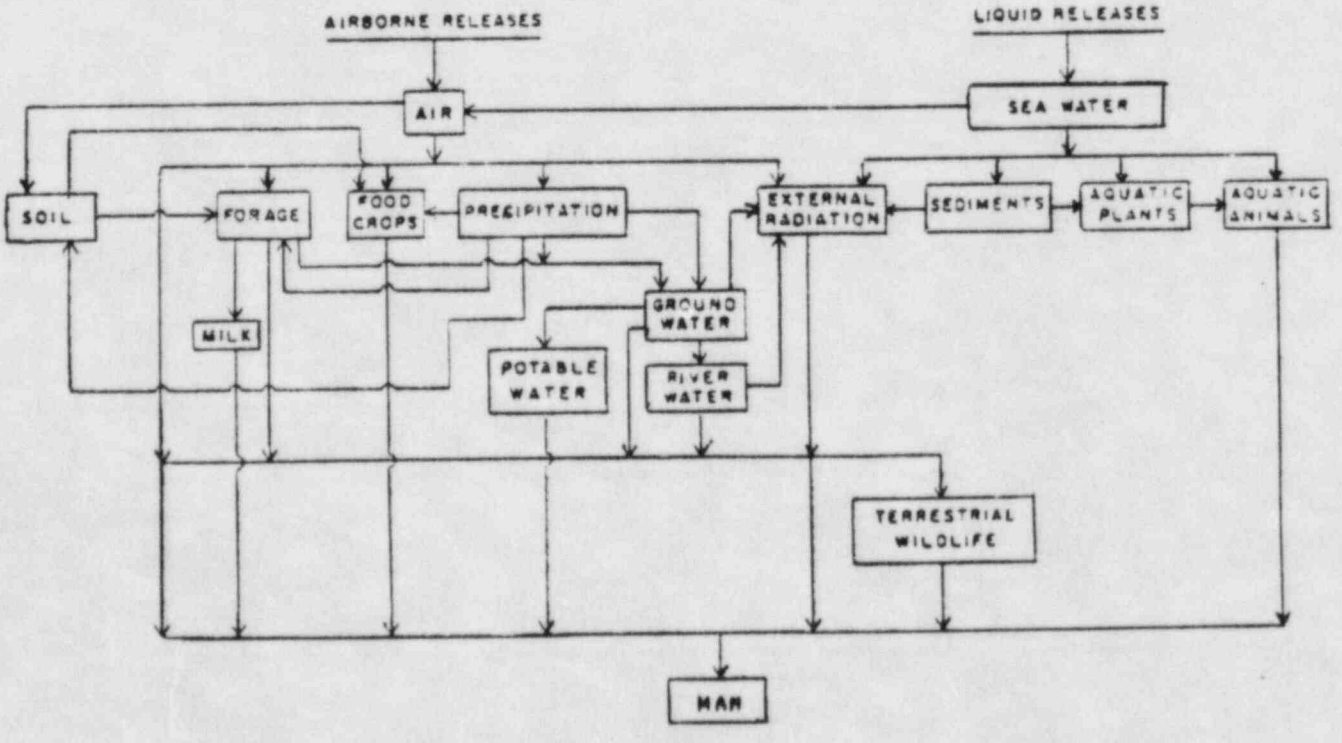
I. INTRODUCTION

The Radiological Environmental Monitoring Program provides information which can be used in assessing the type and quantity of radiation exposure, resulting from plant operation, in unrestricted areas. The Program is conducted via a contract with the University of Florida, Department of Environmental Engineering Sciences, Gainesville, Florida, and a grant to the State of Florida, Department of Health and Rehabilitative Services, Orlando, Florida. The parts of the Program for which each are responsible are listed in Table I-1. Figure I-1 depicts the relationships of the plant effluents to the food chains and the associated pathway links that are monitored in the surveillance program. Figures I-2 and I-3 provide maps of the offsite and onsite environmental sampling sites surrounding Crystal River Unit 3. Table I-2 provides sample station locations by distance and direction from the plant.

In essence, the Program provides a continuation of the preoperation program so that any increases of radioactivity in the environment can be detected. No pathway has shown any confirmed increases of radioactivity in the environment due to plant operation during this report period. Each pathway is addressed in the report, as appropriate, including data summaries, graphical presentations, and narrative.



CRITICAL PATHWAYS



OTHER MONITORED PATHWAYS

Figure I-1 Environmental Media and Exposure Pathways

TABLE I-1

Radiological Environmental Monitoring Program

RESPONSIBILITY	PATHWAY	SAMPLE STATIONS
University	Air Submersion	C04, C14H*, C14M*, C14G*, C40, C41, C43, C46
State	Air Submersion	C07, C09, C18, C26
University	Air Inhalation	C41*
State	Air Inhalation	C04, C07, C18, C26, C40, C46
State	Precipitation	C04, C26, C40
University	Sea Water	C01, C09, C13, C14H, C14M, C14G*
State	River Water	C15
State	Ground Water	C40
University	Potable Water	C07, C10, C18
University	Shoreline External Sediment	C01, C09, C14H*, C14M*, C14G*
University	Seafood Chain	C29, C30
University	Ingestion Crab	C29*, C30
University	Ingestion Fish (Carnivorous)	C29*, C30
University	Ingestion Fish (Herbivorous)	C29*, C30
University	Ingestion Oysters	C29, C30
University	Ingestion Shrimp	C27
University	Ingestion Milk	C47, C49*
University	Ingestion Animals	C45
University	Food Chain (Grasses)	C05, C40, C41
State	Ingestion Food Crops (Citrus)	C19

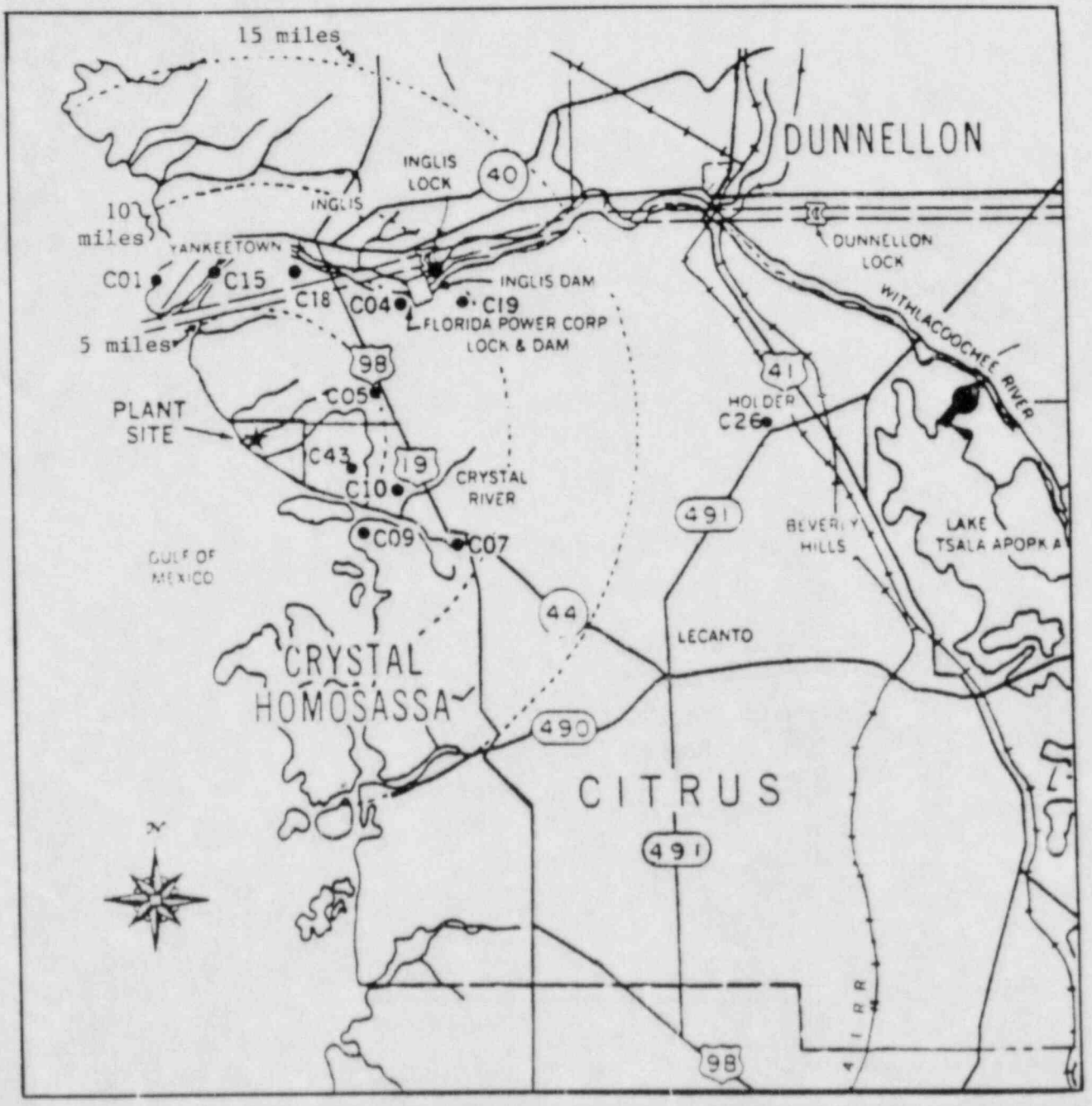
TABLE I-1 (Continued)

Radiological Environmental Monitoring Program

RESPONSIBILITY	PATHWAY	SAMPLE STATIONS
State	Ingestion Food Crops (Watermelon)	C04
University	Food Chain (Soil)	C04, C07, C18, C26, C40, C41, C46
State	Meat	C50
State	Poultry	C51
State	Eggs	C51
University	Food Chain (Green Leafy Vegetables)	C47, C48*

*Critical Pathway Sample Stations

C47 in Gainesville
52 Mi. NNE



OFF-SITE OPERATIONAL RADIOLOGICAL PROGRAM SAMPLING SITES

CRYSTAL RIVER UNIT 3

Figure I-2

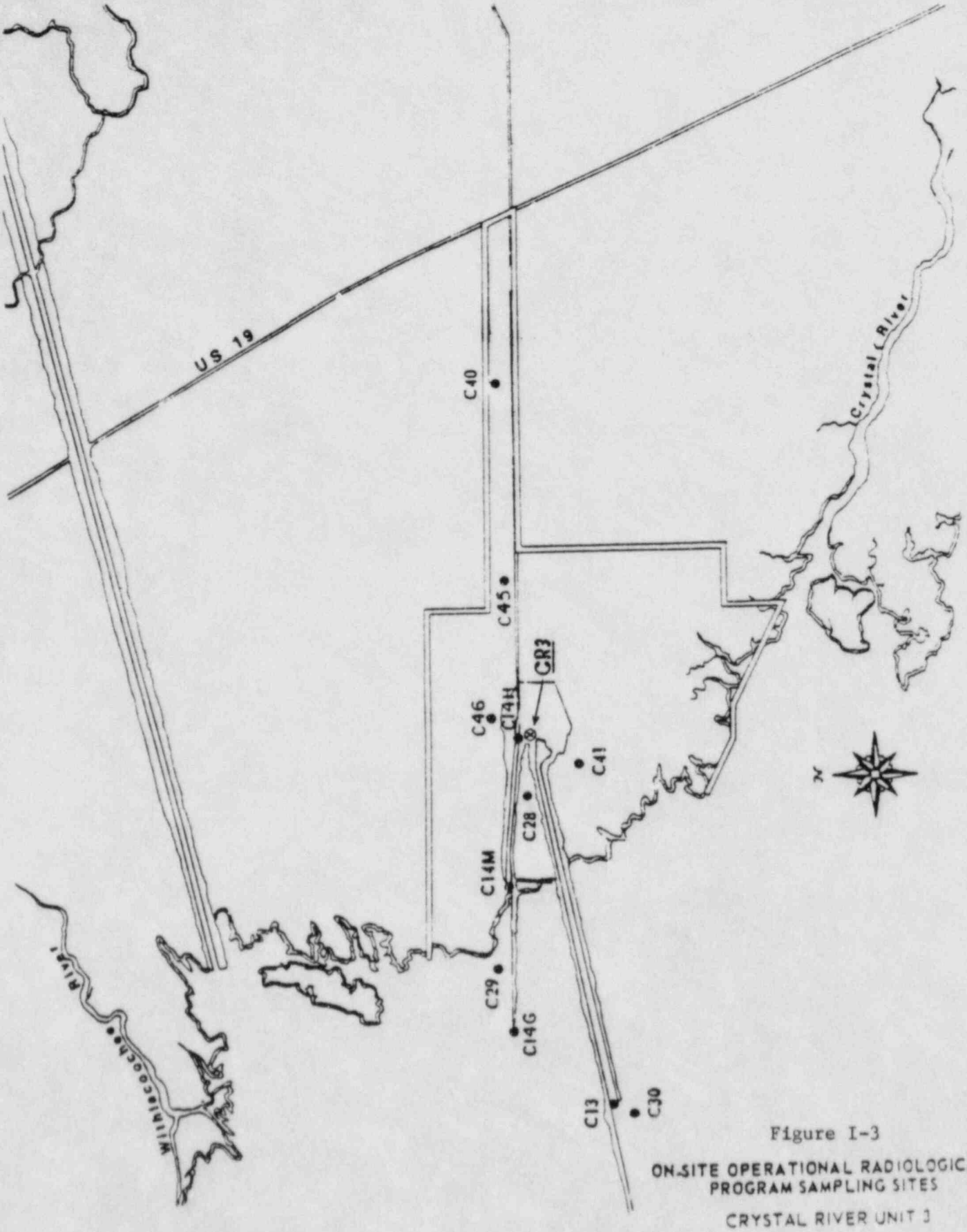


Figure I-3

ON-SITE OPERATIONAL RADIOLOGICAL PROGRAM SAMPLING SITES

CRYSTAL RIVER UNIT 3

SCALE 1" = 1.1 mi.

TABLE I-2

Operational Sample Station Locations

Station Number	Location	Distance From Plant (miles)	Distance From Plant
C01	Levy County Park West End State Road 40	4.9	NW
C04	State Park Old Dam on River near road intersection	6.3	ENE
C05	Entrance to Hollinswood Ranch	3.8	ENE
C07	Crystal River Public Water Plant	7.5	ESE
C09	Citrus Country Park West End State Road 44	3.2	S
C10	Indian Waters Public Water Supply	5.9	ESE
C13	Mouth of Intake Canal	3.4	WSW
C14H	Head of Discharge Canal	0.1	NW
C14M	Midway out Discharge Canal	1.5	W
C14G	Gulf of Mexico end of Discharge Canal	2.8	W
C15	Withlacoochee River Yankeetown Dock Isaac Walton Lodge	5.0	N
C18	Yankeetown City Well	5.2	N
C19	NW Corner State Road 488 and State Road 495	8.5	ENE
C26	FPC Substations on State Road 491 between Beverly Hills and Holder	16.6	E

TABLE I-2

Operational Sample Station Locations (Cont'd)

Station Number	Location	Distance From Plant (miles)	Distance From Plant
C27	Ralston Purina Research Facility between Intake and Discharge Canals	0.6	WNW
C29	Discharge Area	2.0	W
C30(a)	Intake Area	3.6	WSW
C40	On site near N.E. Boundary at excavated pond and pump station	3.5	E
C41	Onsite meteorological	0.4	SSW
C43	S.E. corner Hollinwood	4.7	ESE
C45	Between C40 and C46	NA	NA
C46	North Pump Station	0.4	N
C47	Univ. of Fla., Gainesville	52.0	NNE
C48	To be determined from Annual Vegetable Garden Census		
C49	To be determined from Semiannual Milk Animal Census		

(a) This station is considered as background station for marine sampling.

II. MILK AND GREEN LEAFY VEGETABLES CENSUS

Environmental Technical Specification 3.2.1 requires a census of animals producing milk for human consumption to be conducted semiannually. If this census fails to locate any such animals, a census of gardens producing fresh leafy vegetables for human consumption is required annually.

The garden census, required as a result of a lack of findings on the milk animal census, was completed on March 23 and 25, 1983. Eight (8) garden sites within five miles of the plant were located. A garden 4.1 miles east of the plant was chosen as the critical location based on FSAR historical meteorological data.

The first semiannual milk cow survey was initiated on March 23 and 25, 1983, and inquiries completed in June, with only one milk-producing goat located at the five mile radius north of the plant. The resident was unwilling to provide milk for routine analysis.

The second semiannual milk animal survey was performed on December 21 and 22, 1983, and no milk cows or goats were located within five miles of the plant.

III. MEDIA OTHER THAN EXTERNAL RADIATION

This category includes all samples of the food chain pathway other than External Radiation as depicted in Figure I-1. The samples are collected and analyzed in accordance with Crystal River Unit 3 Environmental Technical Specifications, Section 3.2.2. Each pathway analyzed is presented in this section by data summaries, data comparisons, and plots in order to document in easily usable form the effects of effluent releases from Crystal River Unit 3 on the surrounding environment.

Each pathway summary contains a brief narrative, two tables, and, as appropriate, a trend plot of the nuclides of interest. The first table provides a summary of each pathway data formatted as required by Section 5.6.1.A of Environmental Technical Specifications. The second table provides a comparison of required reporting levels to the analytical data as required by Section 5.6.2.C(2) for critical pathway samples as well as general pathway samples. The nuclide trends were developed from the means of all locations for each parameter analyzed from 1977 to 1983. The limits for comparison of highest single value for each pathway were calculated as described in the tables. Where no preoperational data were available, a control station was used, and where no control station existed, preoperation data were used for the limits.

AIR INHALATION PATHWAY

The Air Inhalation Pathway is one of two pathways split between the University and the State. In addition to the assigned stations, the University operates a station at C47 (Gainesville, FL).

Weekly Gross Beta Analysis

Two (2) weekly gross beta samples were not collected and analyzed, and the following discrepancies noted:

- C40 for week of March 8, 1983:
  Power outage during sample interval.

- C40 for week of April 4, 1983:
  No sample due to power outage.

- C41 for week of December 4, 1983:
  Sample collection exceeded collection interval date.

- C47 for weeks of February 7 and August 29, 1983:
  Sample collection exceeded allowable interval.

- C47 for week of September 23, 1983:
  No sample due to power outage.

There are no critical stations for this type of analysis.

The operational concentrations are similar to the preoperational concentrations and consistent with previous operational years' concentrations.

Weekly I-131 Analysis

All samples were collected and analyzed. Station C41 is the critical station for this type of analysis. Station C47, the control station in Gainesville, had the highest single value and mean (Table III-1). Station C41 had a single value in excess of preoperational limits, but less than the control location.

The following discrepancies were noted:

- C41 for week of December 4, 1983:
  Sample collection exceeded schedule interval.

- C47 for weeks of February 7 and August 29, 1983:
  Sample collection exceeded schedule interval.

- C47 for week of September 23, 1983:
  No sample due to power outage.

The LLD for the DHRS stations is determined by counting weekly composites of all stations (six in number) with a composite sample LLD equal to 0.012 pci/m^3. If I-131 is detected, an individual cartridge recount is performed. DHRS now counts the cartridges using GeLi spectroscopy. The reported LLD

is not an average system capability, but rather an upper 95 percentile value of system capabilities based on standard sample analysis procedures. The original Technical Specification LLD's were based on an average NaI system capability.

Quarterly Gamma Analysis

All samples were collected and analyzed. There are no critical stations for this type of analysis.

The concentrations of nuclides by gamma analysis during 1983 were generally less than the preoperational concentrations and consistent with all previous operational years' concentrations.

Quarterly Sr-89 and 90 Analysis

All samples were collected. There are no critical stations in this pathway.

There are no preoperational data and all operational concentrations are consistent with historical operational data.

TABLE III-1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
AIR INHALATION	GROSS B 416	0.008	0.016 (403/ 414)	C46 0.018 (51/ 52)	0.017 (351/ 362)	0
			(0.002-0.048)	(0.010-0.029)	(0.004-0.048)	

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
AIR INHALATION	IODINE 416	0.059	0.154 (8/ 415)	C47 0.160 (4/ 51)	0.160 (4/ 363)	312
			(0.015-0.226)	(0.041-0.226)	(0.041-0.226)	

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
AIR PARTICULATE (PCI/M3) INHALATION	SR 89/90 ANALYSIS 32					0
	SR-90	0.001	5.24E-04 (3/ 32)	C47 9.70E-04 (1/ 4)	9.70E-04 (1/ 28)	
			2.1E-04- 9.7E-04	9.7E-04- 9.7E-04	9.7E-04- 9.7E-04	
	SR-89	0.001	9.26E-04 (2/ 32)	C47 1.44E-03 (1/ 4)	1.44E-03 (1/ 28)	
			4.1E-04- 1.4E-03	1.4E-03- 1.4E-03	1.4E-03- 1.4E-03	

TABLE III-1 (Cont'd)

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		ANEA
AIR PART. (PCI/1000 M3) AIR INHALATION	GAMMA ANALYSIS 32								7
	CE-144	48.03	ND(0/ 32)						
	BA-140	9.25	50.00(2/ 32)	AC41	50.00(2/ 4)		ND (0/ 28)		
			(20.00- 80.00)		(20.00- 80.00)				
	TH-232	15.10	1.23(8/ 32)	AC47	1.25(4/ 4)		1.25(4/ 28)		
			(0.80- 2.00)		(1.00- 2.00)		(1.00- 2.00)		
	I-131	14.22	ND(0/ 32)						
	RA-226	30.10	1.39(7/ 32)	AC41	1.45(4/ 4)		1.30(3/ 28)		
			(0.90- 3.00)		(0.90- 3.00)		(0.90- 2.00)		
	RU-106	37.97	ND(0/ 32)						
	CS-137	7.61	0.30(2/ 32)	AC47	0.40(1/ 4)		0.40(1/ 28)		
			(0.20- 0.40)		(0.40- 0.40)		(0.40- 0.40)		
	ZR-95	7.60	ND(0/ 32)						
	MN-54	7.47	ND(0/ 31)						
	ZN-65	15.11	ND(0/ 32)						
	K-40	83.06	7.13(32)	AC47	8.00(4/ 4)		8.00(8/ 28)		
			(6.00- 9.00)		(6.00- 9.00)		(6.00- 9.00)		

TABLE III-2

AIR INHALATION

Parameter	Sampling Location	Mean (pci/m3)	No. of Samples	LLD (pci/m3)	Highest Single Value (pci/m3)	Limit* Location (pci/m3)
I-131**	all	0.154	416	0.059	----	----
	C41**	----	1	0.008	0.224	0.040 preop
	C47	----	1	0.015	0.226	0.040 preop
Gross Beta	all	0.016	416	0.008	----	----
	C41**	----	1	0.02	0.028	1.20 preop
	C40	----	1	0.01	0.048	1.20 preop
Sr 89	all	<LLD	32	0.0016	<LLD	----
	C41**	----	1	0.002	<LLD	
Sr 90	all	<LLD	32	0.0008	<LLD	----
	C41**	----	1	0.001	<LLD	

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclide.

TABLE III-2 (Continued)

AIR INHALATION

Parameter	Sampling Location	Mean (pci/m3)	No. of Samples	LLD (pci/m3)	Highest Single Value (pci/m3)	Limit* Location (pci/m3)
Gamma Analysis						
Ra 226	all	<LLD	32	0.030	----	----
	C41**	----	1	0.001	0.003	2.41/preop
	C47	----	1	0.001	0.002	2.41/preop
Th 232	all	<LLD	32	0.015	0.002	----
	C41**	----	1	0.001	0.002	0.08/preop
I 131**	all	<LLD	32	0.014	<LLD	----
	C41**	----	4	0.005	<LLD	0.04/preop
Ba 140	all	0.05	32	0.01	0.08	----
	41**	----	1	0.01	0.08	0.16/preop
Ru 106	all	<LLD	32	0.038	<LLD	----
	C41**	----	4	0.002	<LLD	2.16/preop
Cs 137	all	<LLD	32	0.007	<LLD	----
	C41**	----	4	0.002	<LLD	0.13/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclide.

TABLE III-2 (Continued)

AIR INHALATION

Parameter	Sampling Location	Mean (pci/m3)	No. of Samples	LLD (pci/m3)	Highest Single Value (pci/m3)	Limit* Location (pci/m3)
Gamma Analysis						
Zr 95	all	< LLD	32	0.008	< LLD	----
	C41**	----	4	0.001	< LLD	0.43/preop
Mn 54	all	< LLD	32	0.008	< LLD	----
	C41**	----	4	0.001	< LLD	0.10/preop
Zn 65	all	< LLD	32	0.015	< LLD	----
	C41**	----	4	0.001	< LLD	0.10/preop
K 40	all	0.017	32	0.083	0.009	----
	C41**	----	1	0.001	0.007	1.10/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-1

AIR INHALATION NUCLIDE TRENDS

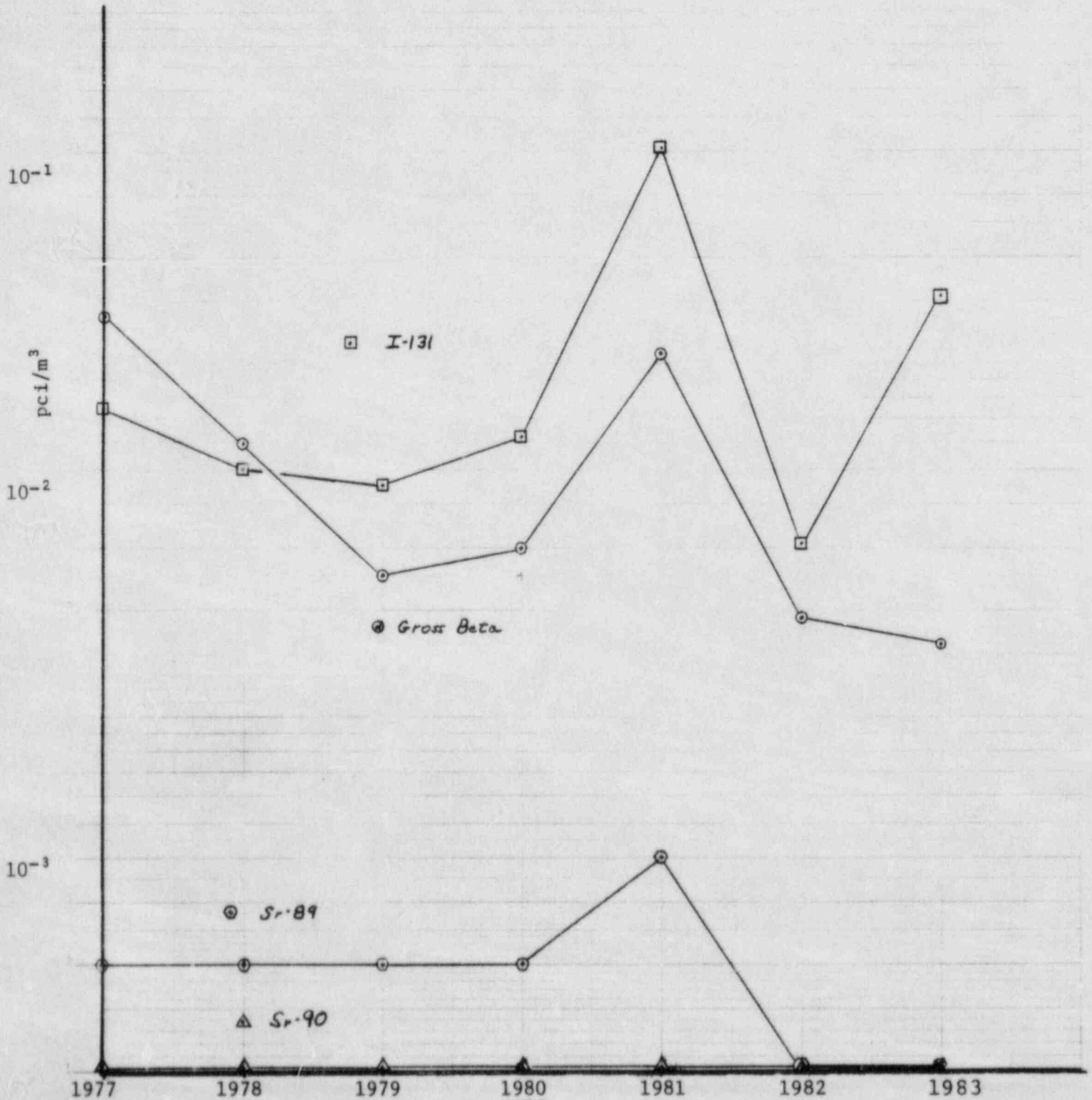
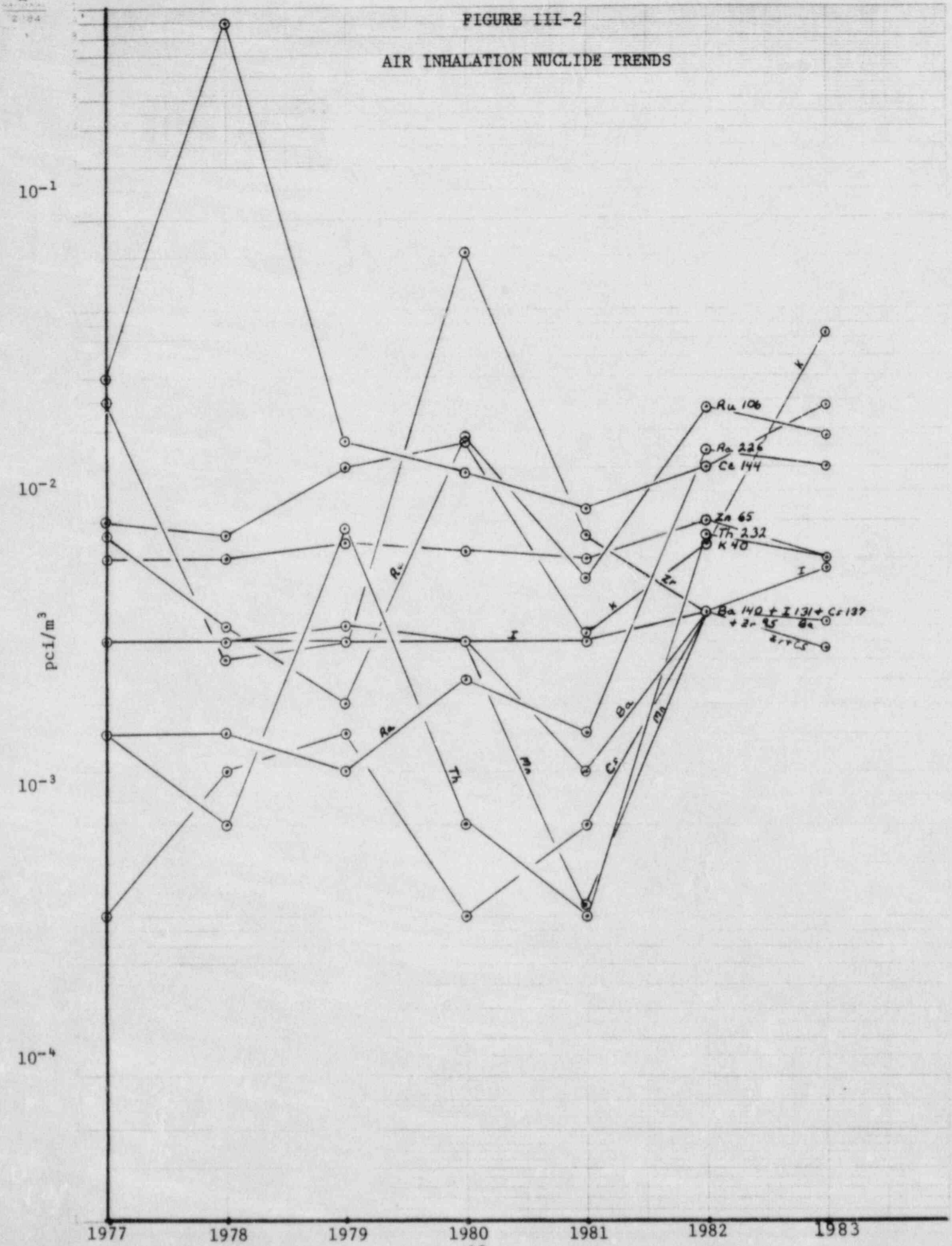


FIGURE III-2

AIR INHALATION NUCLIDE TRENDS



PRECIPITATION PATHWAY

The State has the responsibility to collect and analyze precipitation samples. There are no additional stations for the pathway.

Monthly Gamma Analysis

All monthly samples were collected and analyzed. There are no critical stations in this pathway.

The 1983 operational activities of the nuclides determined by gamma analysis were non-detectable as were the preoperational and all operational activities to date.

Monthly Tritium Analysis

All samples were collected and analyzed. There are no critical stations in this pathway.

All of the 1983 operational activity data for tritium were less than the LLD's.

No trend plots of the precipitation pathway are provided due to the lack of variation in the data. Since 1977, all of the monthly gamma analyses and tritium analyses have been less than the LLD.

TABLE III-3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
PRECIPITATION (PCI/L) FOOD CHAIN	GAMMA ANALYSIS 36					0
	BA-140	17.0	ND(0/ 33)			
	I-131	17.0	ND(0/ 33)			
	CS-134	17.0	ND(0/ 33)			
	CS-137	17.0	ND(0/ 33)			
	CO-58	17.0	ND(0/ 33)			
	MN-54	15.0	ND(0/ 33)			
	ZN-65	30.0	ND(0/ 33)			
	CO-60	17.0	ND(0/ 33)			

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
PRECIPITATION (PCI/L)	TRITIUM ANALYSIS 36					0
	H-3	200.0	ND (0/ 33)			

TABLE III-4

PRECIPITATION

Parameter	Sampling Location	Mean (pci/l)	No. of Samples	LLD (pci/l)	Highest Single Value (pci/l)	Limit* Location (pci/l)
Gamma Analysis						
I 131	all	<LLD	36	17	<LLD	170/preop
Ba 140	all	<LLD	36	17	<LLD	170/preop
Cs 137	all	<LLD	36	17	<LLD	170/preop
Cs 134	all	<LLD	36	17	<LLD	170/preop
Co 58	all	<LLD	36	17	<LLD	170/preop
Mn 54	all	<LLD	36	15	<LLD	150/preop
Zn 65	all	<LLD	36	30	<LLD	300/preop
Co 60	all	<LLD	36	17	<LLD	170/preop
Tritium	all	<LLD	36	200	<LLD	2000/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

SEAWATER PATHWAY

The University has the responsibility to collect and analyze seawater samples. There are no additional stations for this pathway.

Monthly Gamma Analysis

All monthly samples were collected and analyzed.

Sample Station C14G is the critical station in this pathway and no sample had activity greater than 10 times the preoperational or control station values.

The concentrations of nuclides by gamma analysis during 1983 were consistent with preoperational and operational concentrations for previous years.

Quarterly Tritium Analysis

All samples were collected and analyzed. There are no critical stations in this pathway.

The concentrations observed in 1983 were consistent with preoperational and previous operational concentrations.

Quarterly Sr-89 and 90 Analysis

All samples were collected and analyzed. Sr-89 and 90 are not critical nuclides in this pathway. There are no preoperational data. The 1983 Sr-89 and 90 concentrations are consistent with those of previous operational years.

TABLE III-5

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
SEA WATER (PCI/KG) SUBMERSION	GAMMA ANALYSIS 72					0
	BA-140	4.9	21.0(11/ 72)C14H (4.6- 75.3)	41.0(2/ 12) (6.6- 75.3)	25.7(8/ 60) (6.6- 75.3)	
	TH-232	5.1	15.5(69/ 72)C13 (7.2- 31.8)	16.6(12/ 12) (11.8- 24.2)	15.6(58/ 60) (7.2- 31.8)	
	I-131	2.8	2.2(1/ 72)C01 (2.2- 2.2)	2.2(1/ 12) (2.2- 2.2)	2.2(1/ 60) (2.2- 2.2)	
	RA-226	5.2	22.9(69/ 72)C09 (5.8- 88.5)	30.1(12/ 12) (9.0- 46.3)	24.2(57/ 60) (5.8- 88.5)	
	CS-134	2.3	2.9(2/ 71)C14M (2.1- 3.7)	3.7(1/ 12) (3.7- 3.7)	2.9(2/ 59) (2.1- 3.7)	
	RU-106	21.1	13.4(1/ 72)C14G (13.4- 13.4)	13.4(1/ 12) (13.4- 13.4)	ND (0/ 60)	
	CS-137	2.6	4.0(14/ 72)C01 (2.3- 9.0)	9.0(1/ 12) (9.0- 9.0)	4.0(14/ 60) (2.3- 9.0)	
	ZR-95	2.4	4.4(5/ 72)C14G (1.9- 11.3)	7.5(2/ 12) (3.7- 11.3)	2.3(3/ 60) (1.9- 3.1)	
	MN-54	2.2	4.2(2/ 72)C14M (4.0- 4.3)	4.3(1/ 12) (4.3- 4.3)	4.2(2/ 60) (4.0- 4.3)	
	ZN-65	4.9	ND(0/ 72)			
	K-40	33.2	237.2(71/ 72)C14M (50.2- 475.0)	283.3(12/ 12) (204.9- 353.0)	234.8(59/ 60) (50.2- 475.0)	

TABLE III-5 (Cont'd)

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	ANR
SEA WATER (PC1/KG)	TRITIUM ANALYSIS 24					0
	H-3	527.0	753.0(2/ 24)	C01 926.0(1/ 4)	753.0(2/ 20)	
			(580.0- 926.0)	(926.0- 926.0)	(580.0- 926.0)	

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	ANR
SEA WATER (PC1/L) SUBMERSION	SR 89/90 ANALYSIS 24					0
	SR-90	0.357	7.41E-01(11/ 24)	C09 1.09E+00(3/ 4)	7.45E-01(10/ 20)	
			2.3E-01- 2.3E+00	3.1E-01- 2.3E+00	2.3E-01- 2.3E+00	
	SR-89	0.893	1.97E+00(4/ 24)	C09 3.24E+00(1/ 4)	2.16E+00(3/ 20)	
			1.2E+00- 3.2E+00	3.2E+00- 3.2E+00	1.2E+00- 3.2E+00	

TABLE III-4

SEA WATER

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	22.9	72	5.2	----	----
	C14G**	----	1	9.0	37.0	398/C13
	C01	----	1	6.0	88.6	398/C13
Th 232	all	15.5	72	5.1	----	----
	C14G**	----	1	4.0	22.0	70/preop
	C09	----	1	10.0	31.8	70/preop
I 131**	all	<LLD	72	2.8	----	----
	C14G**	----	12	5.0	<LLD	85/C13
	C01	----	1	2.0	2.2	85/C13
Ba 140	all	21.0	72	4.9	----	----
	C14G**	----	1	4.0	16.0	110/preop
	C14H	----	1	6.0	75.3	110/preop
Ru 106	all	<LLD	72	21.1	----	----
	C14G**	----	1	12.0	13.4	358/C13
Cs 137**	all	4.0	72	2.6	----	----
	C14G**	----	1	4.0	<LLD	48/C13
	C01	----	1	4.0	9.0	48/C13
Zr 95	all	4.4	72	2.4	----	----
	C14G**	----	1	4.0	11.3	43/C13

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-6

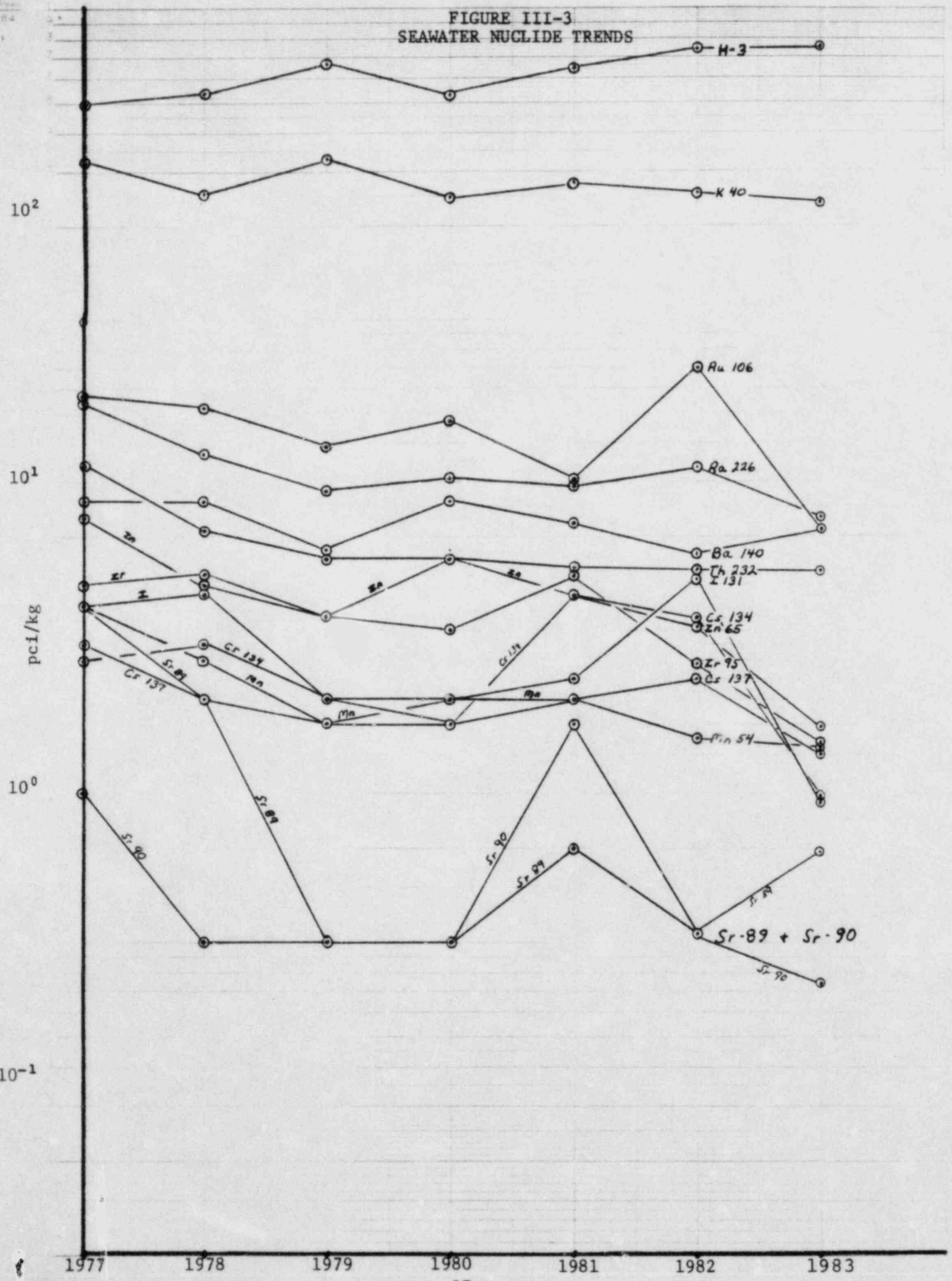
SEA WATER

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (Con't)						
Cs 134**	all	2.9	72	2.3	----	----
	C14G**	----	1	4.0	LLD	67/C13
	C14M	----	1	2.0	4.0	67/C13
Mn 54	all	4.2	72	2.2	----	----
	C14G**	----	12	3.0	<LLD	39/C13
	C14M	--	1	3.0	4.0	39/C13
Zn 65	all	<LLD	72	4.9	----	----
	C14G**	----	12	8.0	<LLD	93/C13
K 40	all	237	72	33.2	----	----
	C14G**	----	1	54.0	299	3970/C13
	C14H	----	1	20.0	475	3970/C13
Tritium	all	753	24	527	----	----
	C14G**	----	1	566	LLD	870/ preop
	C01	----	1	538	926	870/ preop
Sr 89	all	1.97	24	0.89	----	----
	C14G**	----	1	0.99	1.40	13/C13
	C09	----	1	0.94	3.20	13/C13
Sr 90	all	0.74	24	0.36	----	----
	C14G**	----	1	0.30	0.70	10/C13
	C09	----	1	0.77	2.30	10/C13

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-3
SEAWATER NUCLIDE TRENDS



RIVER WATER PATHWAY

The State has the responsibility to collect and analyze river water samples. There are no additional stations for this pathway.

Quarterly Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. Neither preoperational nor operational samples have had detectable activities present within the required LLD's.

Quarterly Tritium Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. Neither preoperational nor operational samples have had detectable activities present within the required LLD's.

No trend plots of the river water pathway are provided due to the lack of variation in the data. Since 1977, all of the quarterly gamma and tritium analyses have been less than LLD.

TABLE III-7

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.		LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
RIVER WATER (PCI/L) INGESTION	GAMMA ANALYSIS	4						0
	BA-140		17.0	ND(	0/ 4)			
	I-131		17.0	ND(	0/ 4)			
	CS-134		17.0	ND(	0/ 4)			
	CS-137		17.0	ND(	0/ 4)			
	CO-58		17.0	ND(	0/ 4)			
	MN-54		15.0	ND(	0/ 4)			
	ZN-65		30.0	ND(	0/ 4)			
	CO-60		17.0	ND(	0/ 4)			
RIVER WATER (PCI/L)	TRITIUM ANALYSIS	4						0
	H-3		200.0	<LLD(	0/ 4)			

TABLE III-8

RIVER WATER

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
I 131	all	<LLD	4	17	<LLD	----
Ba 140	all	<LLD	4	17	<LLD	----
Co 58	all	<LLD	4	17	<LLD	----
Cs 137	all	<LLD	4	17	<LLD	----
Cs 134	all	<LLD	4	17	<LLD	----
Mu 54	all	<LLD	4	15	<LLD	----
Zn 65	all	<LLD	4	30	<LLD	----
Co 60	all	<LLD	4	17	<LLD	----
Tritium	all	<LLD	4	200	<LLD	----

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

GROUND WATER PATHWAY

The State has the responsibility to collect and analyze ground water samples. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. All operational samples had no detectable activity (except for naturally occurring isotopes) and there are no preoperational data.

Semiannual Tritium Analysis

There are no critical stations in this pathway. All operational samples had no detectable activity and there are no preoperational data.

TABLE III-9

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
GROUND WATER (PCI/L) INGESTION	GAMMA ANALYSIS 2					0
	BA-140	17.0	ND(0/ 2)			
	I-131	17.0	ND(0/ 2)			
	CS-134	17.0	ND(0/ 2)			
	CS-137	17.0	ND(0/ 2)			
	CO-58	17.0	ND(0/ 2)			
	MN-54	15.0	ND(0/ 2)			
	ZN-65	30.0	ND(0/ 2)			
	CO-60	17.0	ND(0/ 2)			

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
GROUND WATER (PCI/L)	TRITIUM ANALYSIS 2					0
	H-3	200.0	<LLD(0/ 2)			

TABLE III-10

GROUND WATER

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
I 131	all	<LLD	2	17	<LLD	----
Ba 140	all	<LLD	2	17	<LLD	----
Co 58	all	<LLD	2	17	<LLD	----
Cs 137	all	<LLD	2	17	<LLD	----
Cs 134	all	<LLD	2	17	<LLD	----
Mu 54	all	<LLD	2	15	<LLD	----
Zn 65	all	<LLD	2	30	<LLD	----
Co 60	all	<LLD	2	17	<LLD	----
Tritium	all	<LLD	2	200	<LLD	----

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

POTABLE WATER PATHWAY

The University has the responsibility to collect and analyze potable water samples. There are no additional stations for this pathway.

Quarterly Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. The 1983 operational activity was generally less than the pre-operational activity levels and consistent with previous operational years' activities.

Quarterly Tritium Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. All sample activities were less than the LLD.

TABLE III-11

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
POTABLE WATER (PCI/KG) INGESTION	GAMMA ANALYSIS 12					0
	BA-140	6.7	27.1(3/ 12) (7.8- 63.5)	C10 63.5(1/ 4) (63.5- 63.5)	27.1(3/ 12) (7.8- 63.5)	
	I-131	2.9	22.8(2/ 12) (18.2- 27.3)	C07 27.3(1/ 4) (27.3- 27.3)	22.8(2/ 12) (18.2- 27.3)	
	CS-134	2.4	ND(0/ 12)			
	CS-137	2.9	3.7(1/ 12) (3.7- 3.7)	C18 3.7(1/ 4) (3.7- 3.7)	3.7(1/ 12) (3.7- 3.7)	
	CO-58	2.2	ND(0/ 12)			
	MN-54	2.2	ND(0/ 12)			
	ZN-65	6.2	ND(0/ 12)			
	CO-60	2.2	4.5(1/ 12) (4.5- 4.5)	C10 4.5(1/ 4) (4.5- 4.5)	4.5(1/ 12) (4.5- 4.5)	

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
POTABLE WATER (PCI/L)	TRITIUM ANALYSIS 12					0
	H-3	450.8	273.0(1/ 12) (273.0- 273.0)	C18 273.0(1/ 4) (273.0- 273.0)	273.0(1/ 12) (273.0- 273.0)	

TABLE III-12

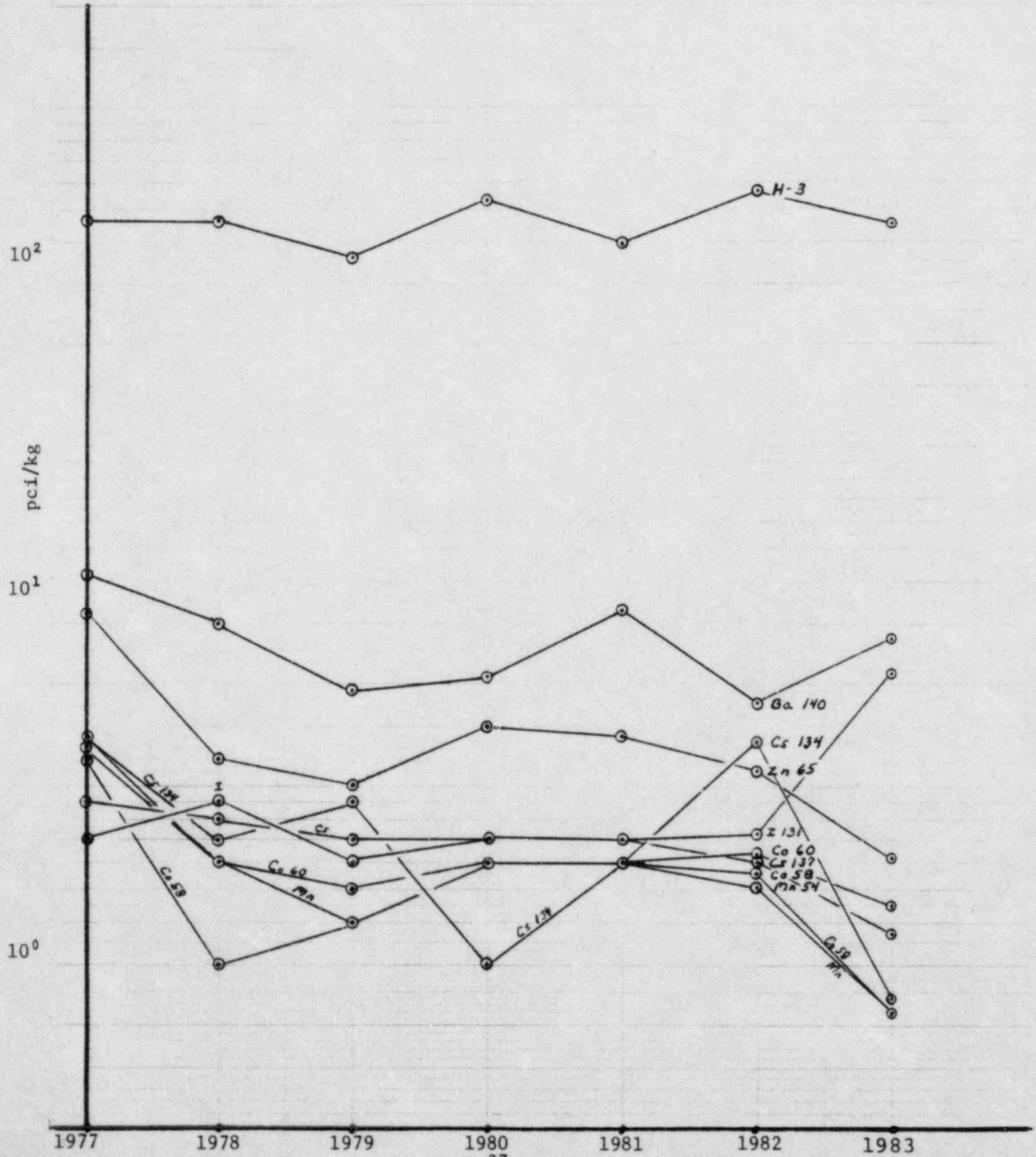
POTABLE WATER

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
I 131	all	22.8	12	2.9	----	----
	C07	----	1	2.0	27.3	100/preop
Ba 140	all	27.1	12	6.7	---	---
	C10	--	1	6.0	63.5	500/preop
Cs 137	all	3.7	12	2.9	----	----
	C18	----	1	3.0	3.7	200/preop
Cs 134	all	2.4	12	2.4	<LLD	150/preop
Co 58	all	<LLD	12	2.2	<LLD	150/preop
Mu 54	all	<LLD	12	2.2	<LLD	200/preop
Zn 65	all	<LLD	12	6.2	<LLD	200/preop
Co 60	all	4.5	12	2.2	----	----
	C10	----	1	3.0	4.5	200/preop
Tritium	all	<LLD	12	451	---	---
	C18	---	1	211	273	12000/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

FIGURE III-4

POTABLE WATER NUCLIDE TRENDS



SHORELINE EXTERNAL SEDIMENT PATHWAY

The University has the responsibility to collect and analyze shoreline external sediment samples. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. The critical stations for this analysis are Sample Stations C14H, C14M, and C14G. No sample had activity greater than 10 times the control station value.

The 1983 operational data showed nuclide concentrations generally lower than the preoperational data and consistent with previous years' operational data.

Semiannual Sr-90 Analysis

All samples were collected and analyzed. The critical stations are Sample Stations C14H, C14M, and C14G. No sample had activity greater than 10 times the control station value.

There are no preoperational data and the 1983 data showed no significant change in Sr-90 concentration, in this pathway, over previous years' concentrations.

TABLE III-13

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		NRR
BOT. SEDIMENTS (PCI/KG) SHORELINE EXP.	GAMMA ANALYSIS 10								0
	BA-140	7.3	17.1	(6/ 10)	C01	24.8 (1/ 2)	18.6	(2/ 4)	
			(12.4- 24.8)			(24.8- 24.8)	(12.4- 24.8)		
	TH-232	8.4	89.7	(9/ 10)	C14H	140.5 (2/ 2)	81.0	(4/ 4)	
			(39.9- 175.0)			(106.0- 175.0)	(40.8- 133.0)		
	I-131	3.9	ND	(0/ 10)					
	RA-226	8.2	495.3	(10/ 10)	C14H	926.5 (2/ 2)	202.1	(4/ 4)	
			(80.9-1130.0)			(723.0-1130.0)	(80.9- 347.0)		
	CS-134	3.1	5.1	(6/ 10)	C14H	10.7 (1/ 2)	3.9	(3/ 4)	
			(2.6- 10.7)			(10.7- 10.7)	(2.6- 5.6)		
	RU-106	24.6	21.7	(1/ 10)	C14M	21.7 (1/ 2)	ND	(0/ 4)	
			(21.7- 21.7)			(21.7- 21.7)			
	CS-137	3.5	22.9	(7/ 10)	C01	41.9 (2/ 3)	36.8	(3/ 4)	
			(4.1- 79.0)			(4.8- 79.0)	(4.8- 79.0)		
	ZR-95	4.0	ND	(0/ 10)					
	MN-54	2.9	ND	(0/ 10)					
	ZN-65	6.4	ND	(0/ 10)					
	K-40	38.6	289.7	(9/ 10)	C09	364.5 (2/ 2)	363.0	(4/ 4)	
			(51.1- 678.0)			(51.1- 678.0)	(51.1- 678.0)		
BOTTOM SED. (PCI/KG) SHORELINE EXT	SR 89/90 ANALYSIS 10								0
	SR-90	33.3	3.5	(3/ 10)	C09	6.2 (1/ 2)	6.2	(1/ 4)	
			(2.0- 6.2)			(6.2- 6.2)	(6.2- 6.2)		

TABLE III-14

SHORELINE EXTERNAL SEDIMENTS

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	495	10	8.2	1130	----
	C14H**	----	1	11.0	1130	4695/C09
	C14M**	----	1	16.0	620	4695/C09
	C14G**	----	1	5.0	610	4695/C09
Th 232	all	89.7	10	8.4	175	----
	C14H**	----	1	13	175	1466/C09
	C14M**	----	1	6.0	85	1466/C09
	C14G**	----	1	8.0	78	1466/C09
I 131	all	<LLD	10	3.9	<LLD	----
	C14H**	----	2	7.0	<LLD	67/C09
	C14M**	----	2	4.0	<LLD	67/C09
	C14G**	----	2	3.0	<LLD	67/C09

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-14

SHORELINE EXTERNAL SEDIMENTS

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (con't)						
Ba 140	all	17.1	10	7.3	---	----
	C14H**	----	2	10.0	21.0	173/C09
	C14M**	----	2	6.0	13.0	173/C09
	C14G**	----	2	5.0	19.0	173/C09
	C01	--	1	10.0	24.8	173/C09
Ru 106	all	<LLD	10	24.6	<LLD	----
	C14H**	----	2	55.0	<LLD	362/C09
	C14M**	----	1	20.0	21.7	362/C09
	C14G**	----	2	23.0	<LLD	362/C09
Cs 137**	all	22.9	10	3.5	----	----
	C14H**	----	1	8.0	15.0	500/C09
	C14M**	----	1	3.0	22.0	500/C09
	C14G**	----	1	3.0	4.0	500/C09
	C01	----	1	5.0	79.0	500/C09
Zr 95	all	<LLD	10	4.0	----	----
	C14H**	----	2	9.0	<LLD	67/C09
	C14M**	----	2	3.0	<LLD	67/C09
	C14G**	----	2	4.0	<LLD	67/C09

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-14

SHORELINE EXTERNAL SEDIMENTS

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (con't)						
Cs 134**	all	5.1	10	3.1	10.7	----
	C14H**	----	1	4.0	10.7	30/C09
	C14M**	----	1	2.0	5.0	30/C09
	C14G**	----	1	2.0	3.0	30/C09
Mn 54	all	<LLD	10	2.9	< LLD	----
	C14H**	----	2	7.0	<LLD	48/C09
	C14M**	----	2	2.0	<LLD	48/C09
	C14G**	----	2	3.0	<LLD	48/C09
Zn 65	all	<LLD	10	6.4	<LLD	----
	C14H**	----	2	17.0	<LLD	133/C09
	C14M**	----	2	4.0	<LLD	133/C09
	C14G**	----	2	5.0	<LLD	133/C09

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-14

SHORELINE EXTERNAL SEDIMENTS

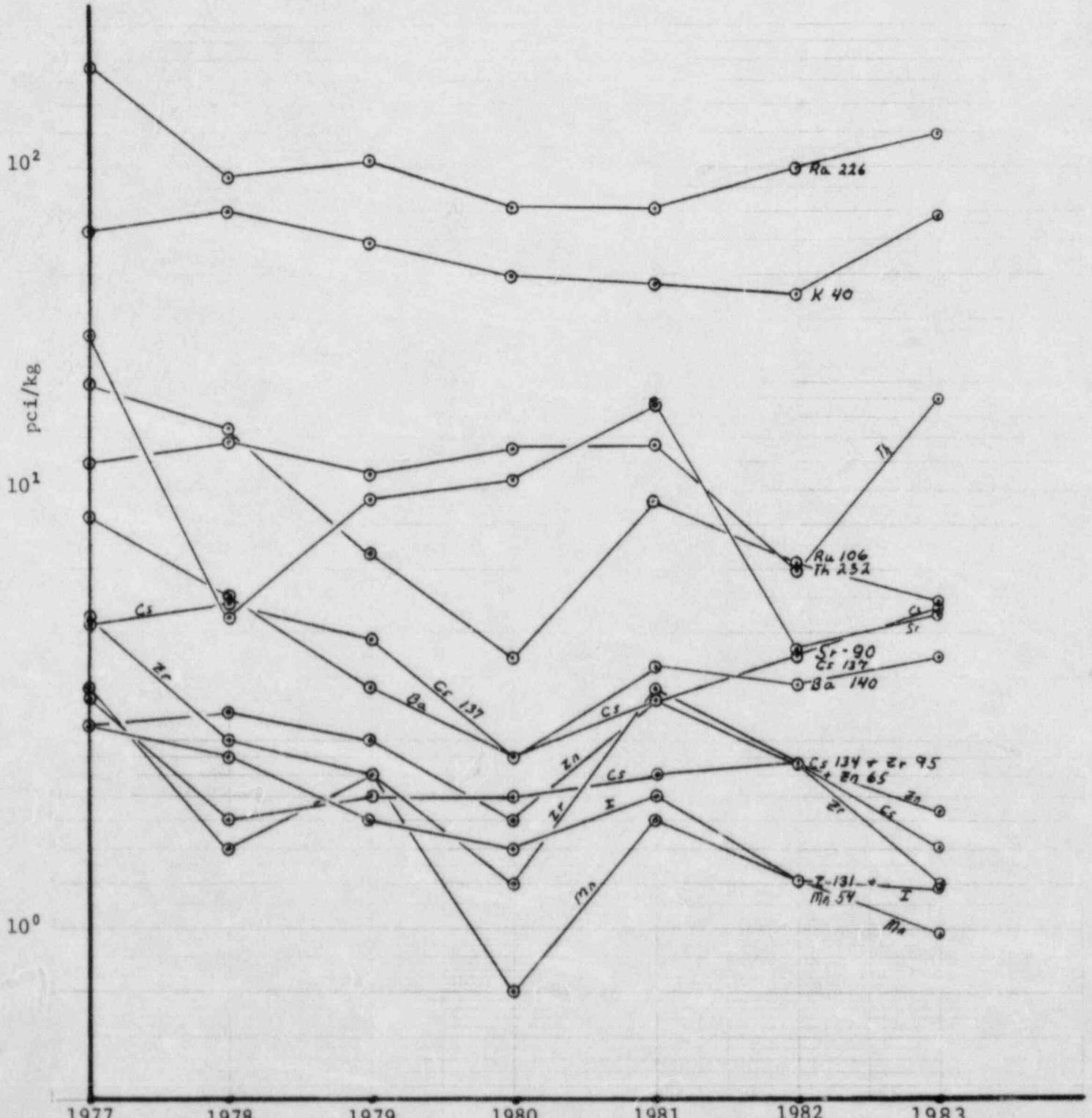
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (con't)						
K 40	all	289.7	10	38.6	678	----
	C14H**	----	1	39.0	255	12335 /C09
	C14M**	----	1	19.0	313	12335 /C09
	C14G**	----	1	23.0	243	12335 /C09
	C09	--	1	71.0	678	12335 /C09
Sr 90	all	<LLD	10	23.3	6.2	----
	C14H**	----	1	2.1	2.1	1128/C09
	C14M**	----	2	37.9	<LLD	1128/C09
	C14G**	----	1	0.2	2.0	1128/C09

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-5

SHORELINE EXTERNAL SEDIMENTS NUCLIDE TRENDS



SEAFOOD CHAIN PATHWAY (MARINE PLANTS)

The University has the responsibility to collect and analyze marine plants in the seafood chain. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway.

The 1983 operational concentrations are generally less than the preoperational concentrations and are consistent with previous operational years' concentrations.

Semiannual Sr-89 and 90 Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. There are no preoperational data and the 1983 data are consistent with previous operational years' concentrations.

The following discrepancies were noted:

- C29 Second Half 1983: The small sample size and long holding time resulted in large sample LLD.

- C30 First Half 1983 : The small sample size and long holding time resulted in large sample LLD.

TABLE III-15

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		NR
MARINE PLANTS (PCI/KG) SEAFOOD CHAIN	GAMMA ANALYSIS 4								0
	BA-140	9.8	30.2(3/ 4)	C30	35.3(1/ 2)		35.3(1/ 2)		
			(25.1- 35.3)		(35.3- 35.3)		(35.3- 35.3)		
	TH-232	9.0	54.3(3/ 4)	C30	60.9(1/ 2)		60.9(1/ 2)		
			(32.6- 69.3)		(60.9- 60.9)		(60.9- 60.9)		
	I-131	5.8	ND(0/ 4)						
	RA-226	9.2	86.0(3/ 4)	C29	92.4(2/ 2)		73.0(1/ 2)		
			(31.9- 153.0)		(31.9- 153.0)		(73.0- 73.0)		
	RU-106	38.0	ND(0/ 4)						
	CS-137	4.7	11.9(3/ 4)	C29	13.9(2/ 2)		8.1(1/ 2)		
			(5.7- 22.0)		(5.7- 22.0)		(8.1- 8.1)		
	ZR-95	4.6	ND(0/ 4)						
	MN-54	4.3	ND(0/ 4)						
	ZN-65	10.3	ND(0/ 4)						
	K-40	57.3	5046.7(3/ 4)	C30	5240.0(1/ 2)		5240.0(1/ 2)		
			(1680.0-8220.0)		(5240.0-5240.0)		(5240.0-5240.0)		
MARINE PLANTS (PCI/KG) SEAFOOD CHAIN	SR 89/90 ANALYSIS 4								2
	SR-90	0.819	2.2 (2/ 4)	C30	2.2 (2/ 2)		2.2 (2/ 2)		
			(0.032 - 4.4)		(0.032/ 4.4)		(0.032 - 4.4)		
	SR-89	10.130	3.6 (1/ 4)	C29	18.0(1/ 2)				
			(3.6 - 3.6)		(36.0 - 36.0)				

TABLE III-16

MARINE PLANTS

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	86.0	4	9.2	----	----
	C29	----	1	10.0	15.3	1330/C30
Th 232	all	54.3	4	9.0	----	----
	C29	----	1	13.0	69.3	1124/C30
I 131	all	<LLD	4	5.8	<LLD	124/C30
Ba 140	all	30.2	4	9.8	----	----
	C30	----	1	5.0	35.3	545/C30
Ru 106	all	<LLD	4	38.0	<LLD	757/C30
Cs 137	all	11.9	4	4.7	----	----
	C29	----	1	5.0	22.0	124/C30
Zr 95	all	<LLD	4	4.6	<LLD	95/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

TABLE III-16 (Con't)

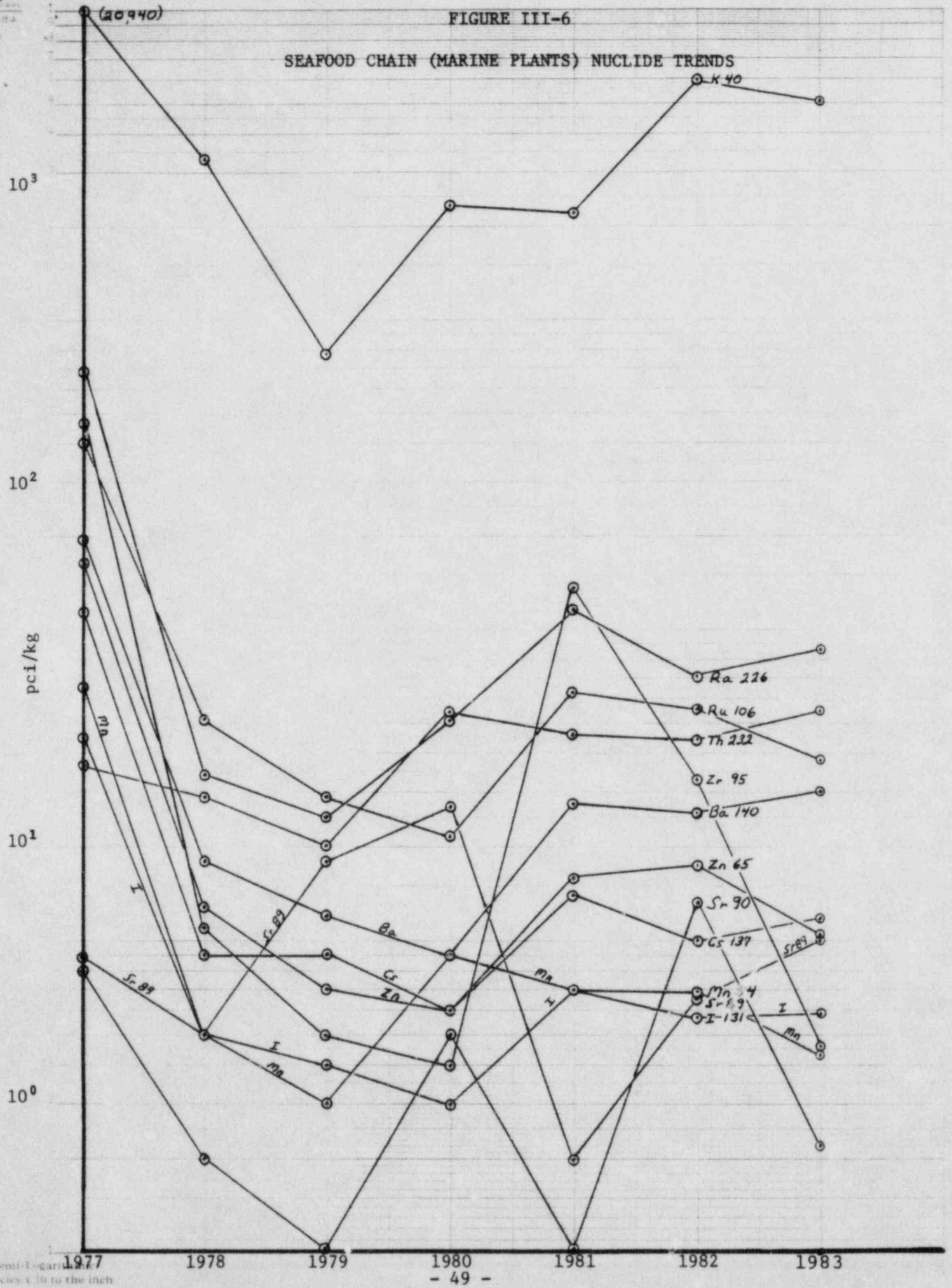
MARINE PLANTS

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (Con't)						
Mn 54	all	<LLD	4	4.3	<LLD	95.4/C30
Zn 65	all	<LLD	4	10.3	<LLD	248/C30
K 40	all	5047	4	57.3	----	----
	C29	----	1	50.0	8220	26285/C30
Sr 89	all	<LLD	4	10.1	<LLD	---
	C29	---	1	23.0	36.0	220/C30
Sr 90	all	2.2	4	0.82	----	----
	C30	----	1	1.5	4.4	83/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

FIGURE III-6

SEAFOOD CHAIN (MARINE PLANTS) NUCLIDE TRENDS



Semi-Logarithmic
1 Cycles x 10 to the inch

INGESTION PATHWAY (CRAB)

The University has the responsibility to collect and analyze crabs. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. Sample Station C29 is the critical station in this pathway and no sample had activity greater than 10 times the control station or preoperational values.

The 1983 operational concentrations are generally less than the preoperational concentrations and consistent with previous years' operational concentrations.

TABLE III-17

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		NR
CRABS (PCI/KG) INGESTION	GAMMA ANALYSIS 4								0
	BA-140	13.2	16.1(1/ 4)	C29	16.1(1/ 2)		ND (0/ 2)		
			(16.1- 16.1)		(16.1- 16.1)				
	TH-232	12.0	60.9(3/ 4)	C29	62.0(2/ 2)		58.9(1/ 2)		
			(58.9- 65.0)		(58.9- 65.0)		(58.9- 58.9)		
	I-131	6.1	ND(0/ 4)						
	RA-226	13.4	114.0(4/ 4)	C30	118.6(2/ 2)		118.6(2/ 2)		
			(56.6- 162.0)		(92.2- 145.0)		(92.2- 145.0)		
	CS-134	5.5	4.3(1/ 4)	C29	4.3(1/ 2)		ND (0/ 2)		
			(4.3- 4.3)		(4.3- 4.3)				
	RU-106	50.0	ND(0/ 4)						
	CS-137	6.4	10.6(1/ 4)	C30	10.6(1/ 2)		10.6(1/ 2)		
			(10.6- 10.6)		(10.6- 10.6)		(10.6- 10.6)		
	ZR-95	6.6	ND(0/ 4)						
	MN-54	5.5	ND(0/ 4)						
	ZN-65	13.4	ND(0/ 4)						
	K-40	167.4	2340.4(4/ 4)	C30	2530.7(2/ 2)		2530.7(2/ 2)		
			(1930.0-2901.4)		(2160.0-2901.4)		(2160.0-2901.4)		

TABLE III-18

CRABS

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	114	4	13.4	162	1920/C30
	C29**	----	2	7.0	162	1920/C30
Th 232	all	60.9	4	12.0	65	----
	C29**	----	1	7.0	65	1015/C30
I 131**	all	<LLD	4	6.1	<LLD	----
	C29**	----	2	7.0	<LLD	125/C30
Ba 140	all	16.1	4	13.2	16.1	----
	C29**	----	1	7.0	16.1	206/C30
Ru 106	all	<LLD	4	50.0	<LLD	----
	C29**	----	2	57.0	<LLD	865/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-18 (Cont)

CRABS

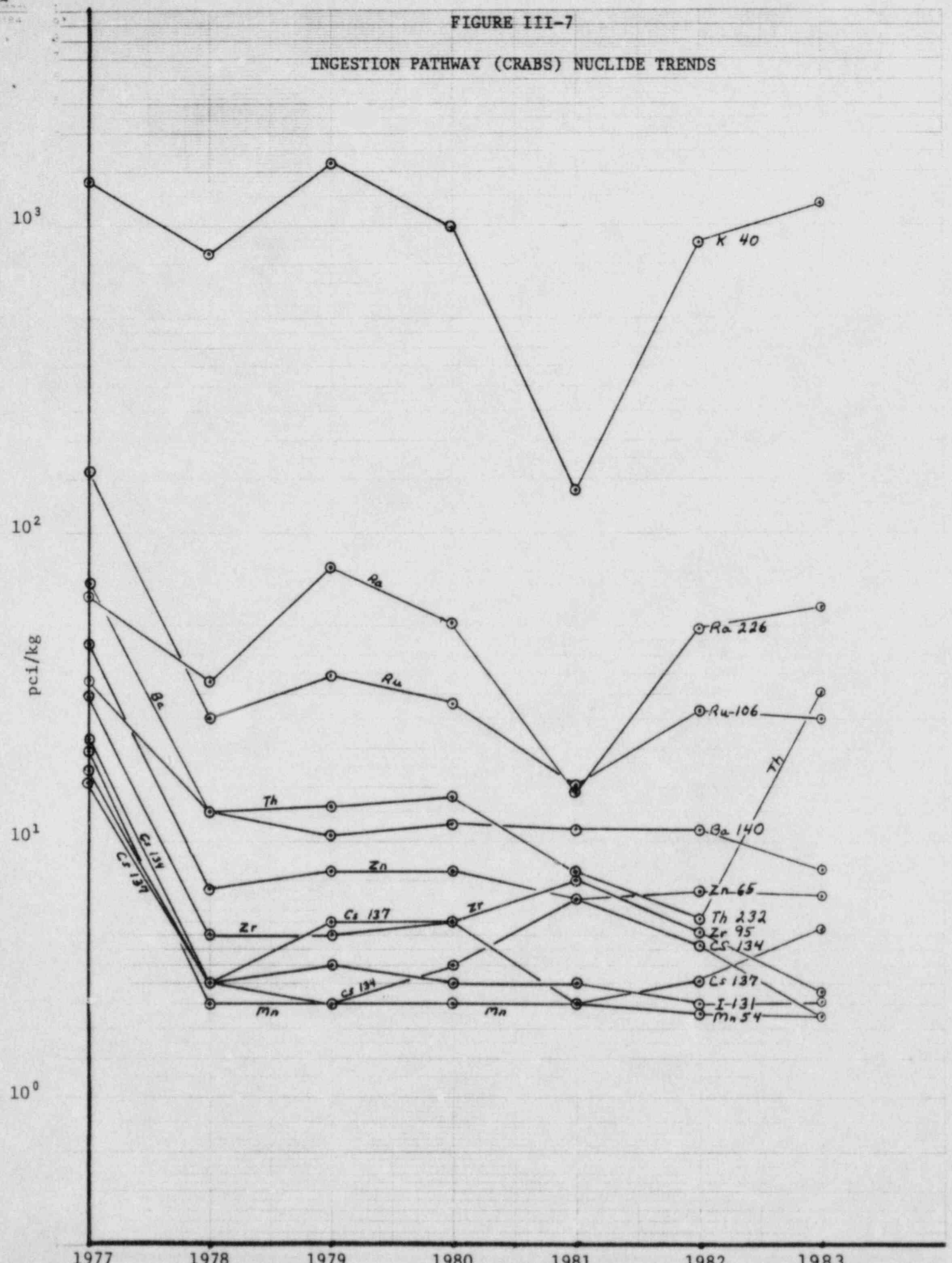
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (Con't)						
Cs 137**	all	10.6	4	6.4	---	----
	C29**	----	2	6.0	<LLD	145/C30
	C30	---	1	9.0	10.6	145/C30
Zr 95	all	<LLD	4	6.6	<LLD	----
	C29**	----	2	7.0	<LLD	80/C30
Cs 134**	all	<LLD	4	5.5	4.0	----
	C29**	----	1	3.0	4.0	79/C30
Mn 54	all	<LLD	4	5.5	<LLD	---
	C29**	----	2	6.0	<LLD	79/C30
Zn 65	all	<LLD	4	13.4	<LLD	----
	C29**	----	2	15.0	<LLD	205/C30
K 40	all	2340	4	167	----	----
	C29*	----	1	291	2370	35570/C30
	C30	----	1	243	2901	35570/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-7

INGESTION PATHWAY (CRABS) NUCLIDE TRENDS



INGESTION PATHWAY (CARNIVOROUS FISH)

The University has the responsibility to collect and analyze carnivorous fish. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed except for the first half 1983 at C30. No carnivorous fish could be obtained. Sample Station C29 is the critical station in this pathway and no sample had activity greater than 10 times the control station or preoperational values.

The operational concentrations for 1983 are generally less than the preoperational concentrations and consistent with previous years' operational concentrations.

TABLE III-19

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
CARN. FISH (PCI/KG) INGESTION	GAMMA ANALYSIS 4					0
	BA-140	7.5	29.0(1/ 3)C29 (29.0- 29.0)	29.0(1/ 2) (29.0- 29.0)	ND (0/ 1)	
	TH-232	7.2	49.0(3/ 3)C30 (20.4- 71.3)	55.2(1/ 1) (55.2- 55.2)	55.2(1/ 1) (55.2- 55.2)	
	I-131	3.9	35.6(1/ 3)C29 (35.6- 35.6)	35.6(1/ 2) (35.6- 35.6)	ND (0/ 1)	
	RA-226	8.6	57.4(3/ 3)C29 (29.4- 113.0)	71.2(2/ 2) (29.4- 113.0)	29.9(1/ 1) (29.9- 29.9)	
	CS-134	3.4	ND(0/ 3)			
	RU-106	32.6	ND(0/ 3)			
	CS-137	4.5	18.8(3/ 3)C29 (5.3- 33.6)	25.5(3/ 2) (17.4- 33.6)	5.3(1/ 1) (5.3- 5.3)	
	ZR-95	3.9	5.4(1/ 3)C29 (5.4- 5.4)	5.4(1/ 2) (5.4- 5.4)	ND (0/ 1)	
	MN-54	3.5	ND(0/ 3)			
	ZN-65	8.2	ND(0/ 3)			
	K-40	84.7	2213.3(3/ 3)C30 (1860.0-2620.0)	2620.0(1/ 1) (2620.0-2620.0)	2620.0(1/ 1) (2620.0-2620.0)	

TABLE III-20

CARNIVOROUS FISH

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	57.4	4	8.6	113	----
	C29**	----	1	13.0	113	300/C30
Th 232	all	49.0	4	7.2	71.3	----
	C29**	----	1	11.0	71.3	550/C30
I 131	all	35.6	4	3.9	35.6	----
	C29**	----	1	2.0	35.6	40/preop
Ba 140	all	29.0	4	7.5	29.0	----
	C29**	----		12.0	29.0	70/C30
Ru 106	all	<LLD	4	32.6	<LLD	----
	C29**	----	2	47.0	<LLD	320/C30
Cs 137**	all	18.8	4	4.5	33.6	----
	C29**	----	1	2.0	33.6	50/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-20 (Con't)

CARNIVOROUS FISH

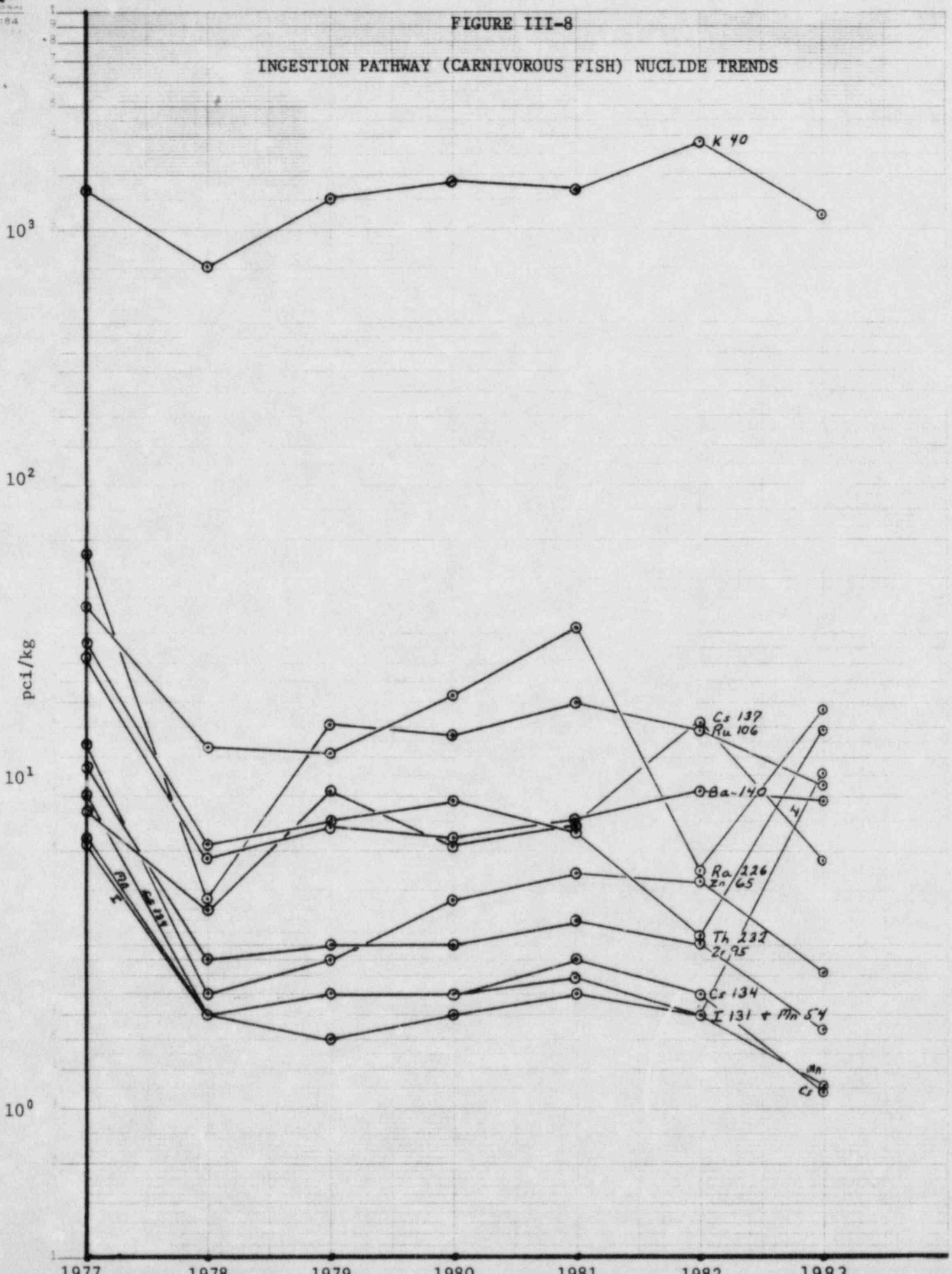
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (Con't)						
Zr 95	all	5.4	4	3.9	5.4	----
	C29**	----	1	2.0	5.4	40/C30
Cs 134**	all	<LLD	4	3.4	<LLD	----
	C29**	----	2	5.0	<LLD	30/C30
Mn 54	all	<LLD	4	3.5	<LLD	----
	C29**	----	2	5.0	<LLD	30/C30
Zn 65	all	<LLD	4	8.2	<LLD	----
	C29**	----	2	12.0	<LLD	80/C30
K 40	all	2213	4	84.7	---	----
	C29**	----	1	65.0	2160	26200/C30
	C30	---	1	42.0	2620	26200/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-8

INGESTION PATHWAY (CARNIVOROUS FISH) NUCLIDE TRENDS



INGESTION PATHWAY (HERBIVOROUS FISH)

The University has the responsibility to collect and analyze herbivorous fish. There are no additional stations for this pathway.

Semiannual Gamma Analysis

Sample Station C29 is the critical station in this pathway and no sampie had greater than 10 times the control station or preoperational values.

The 1983 operational concentrations are generally lower than preoperational concentrations and are consistent with previous years' operational concentrations.

TABLE III-21

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		NAME
HERB. FISH (PCI/KG) INGESTION	GAMMA ANALYSIS 4								0
	BA-140	13.6	163.9(2/ 4) (17.7- 310.0)	C29	310.0(1/ 2) (310.0- 310.0)		17.7(1/ 2) (17.7- 17.7)		
	TH-232	12.5	52.9(4/ 4) (46.2- 62.0)	C29	54.5(2/ 2) (46.9- 62.0)		51.4(2/ 2) (46.2- 56.6)		
	I-131	7.3	ND(0/ 4)						
	RA-226	14.2	114.2(4/ 4) (49.2- 214.0)	C29	134.8(2/ 2) (55.6- 214.0)		93.6(2/ 2) (49.2- 138.0)		
	CS-134	6.1	ND(0/ 4)						
	RU-106	54.3	ND(0/ 4)						
	CS-137	7.3	14.4(4/ 4) (5.6- 22.3)	C29	21.2(2/ 2) (20.1- 22.3)		7.6(2/ 2) (5.6- 9.7)		
	ZR-95	6.5	ND(0/ 4)						
	MN-54	6.0	6.5(1/ 4) (6.5- 6.5)	C30	6.5(1/ 2) (6.5- 6.5)		6.5(1/ 2) (6.5- 6.5)		
	ZN-65	15.0	ND(0/ 4)						
	K-40	122.0	3212.4(4/ 4) (2530.0-3720.0)	C29	3715.0(2/ 2) (3710.0-3720.0)		2700.7(2/ 2) (2530.0-2889.4)		

TABLE III-22

HERBIVOROUS FISH

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	114	4	14.2	214	----
	C29**	----	1	22.0	214	2160/C30
Th 232	all	52.9	4	12.5	62.0	----
	C29**	----	1	18.0	62.0	667/C30
I 131**	all	<LLD	4	7.3	<LLD	----
	C29**	----	2	9.0	<LLD	100/preop
Ba 140	all	164	4	13.6	310	----
	C29**	----	1	18.0	310	206/C30
Ru 106	all	<LLD	4	54.3	<LLD	----
	C29**	----	2	77.0	<LLD	708/C30
Cs 137**	all	14.4	4	7.3	22.3	----
	C29**	----	1	10.0	22.3	135/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-22 (Con't)

HERBIVOROUS FISH

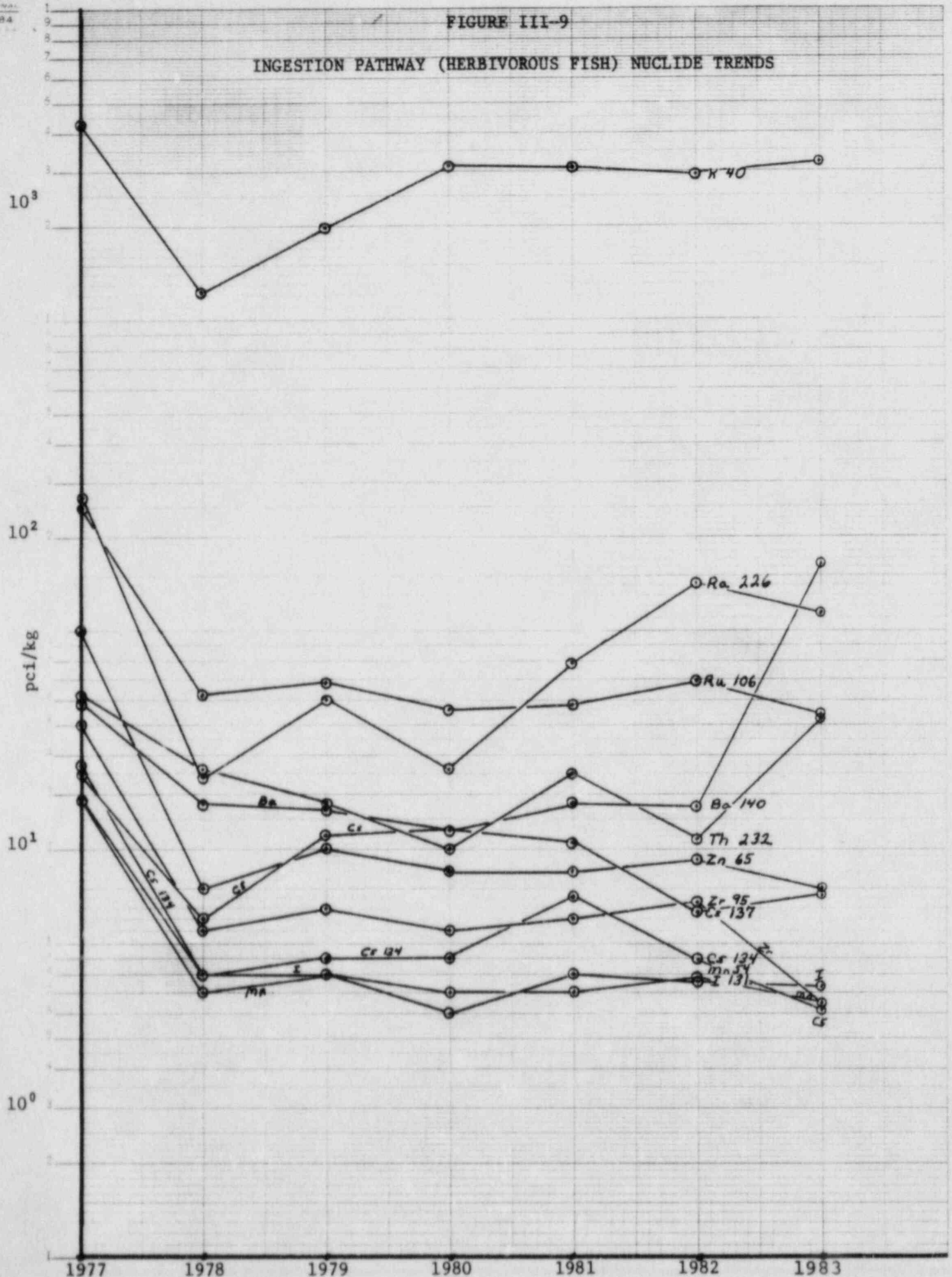
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (Con't)						
Zr 95	all	<LLD	4	6.5	<LLD	----
	C29**	----	2	9.0	<LLD	88/C30
Cs 134**	all	<LLD	4	6.1	<LLD	----
	C29**	----	2	8.0	<LLD	96/C30
Mn 54	all	6.5	4	6.0	----	----
	C29**	----	2	8.0	<LLD	96/C30
	C30	----	1	5.0	6.5	96/C30
Zn 65	all	<LLD	4	15.0	<LLD	----
	C29**	----	2	19.0	<LLD	213/C30
K 40	all	3212	4	122	3720	----
	C29**	----	1	47	3720	31006/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's nfluence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-9

INGESTION PATHWAY (HERBIVOROUS FISH) NUCLIDE TRENDS



INGESTION PATHWAY (OYSTERS)

The University has the responsibility to collect and analyze oysters. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed except for the second half 1983 C29. No live oysters could be found. There are no critical stations in this pathway.

The 1983 operational concentrations are consistent with previous years' operational concentrations and generally lower than the preoperational concentrations.

TABLE III-23

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
OYSTERS (PCI/KG) INGESTION	GAMMA ANALYSIS 4					0
	BA-140	10.6	ND(0/ 3)			
	TH-232	7.8	22.7(3/ 3) (10.4- 34.5)	C29 34.5(1/ 1) (34.5- 34.5)	16.9(2/ 2) (10.4- 23.3)	
	I-131	4.0	ND(0/ 3)			
	RA-226	9.1	36.4(3/ 3) (14.8- 63.1)	C30 39.0(2/ 2) (14.8- 63.1)	39.0(2/ 2) (14.8- 63.1)	
	RU-106	32.7	ND(0/ 3)			
	CS-137	4.7	1.5(1/ 3) (1.5- 1.5)	C30 1.5(1/ 2) (1.5- 1.5)	1.5(1/ 2) (1.5- 1.5)	
	ZR-95	4.8	ND(0/ 3)			
	MN-54	3.5	ND(0/ 3)			
	ZN-65	8.3	ND(0/ 3)			
	K-40	75.4	861.6(3/ 3) (363.0-1220.0)	C29 1001.8(1/ 1) (1001.8-1001.8)	791.5(2/ 2) (363.0-1220.0)	

TABLE III-24

OYSTERS

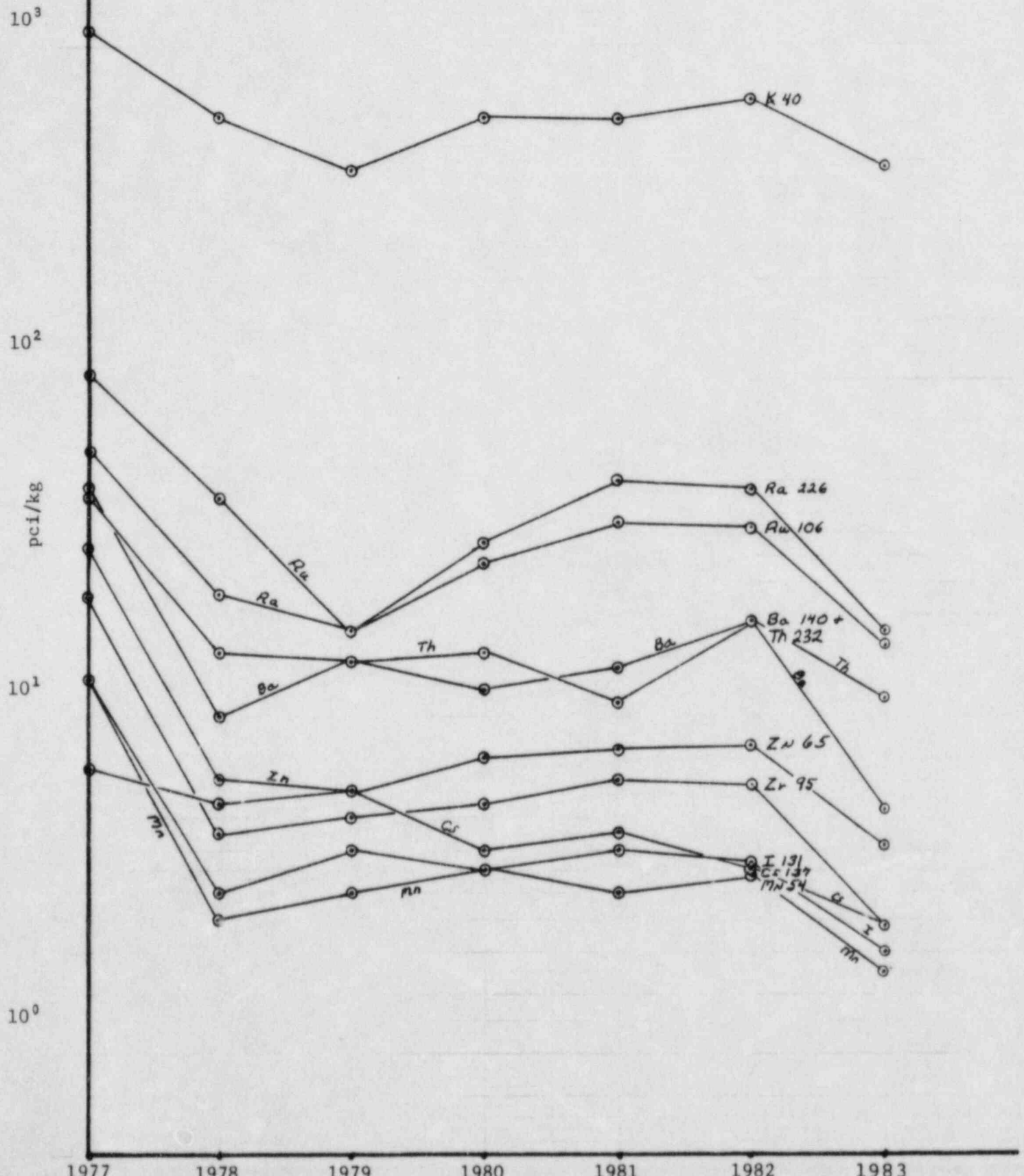
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	36.4	4	9.1	----	----
	C30	----	1	9.0	63.1	1060/C30
Th 232	all	22.7	4	7.8	----	----
	C29	----	1	12.0	34.5	345/C30
I 131	all	<LLD	4	4.0	<LLD	76.5/C30
Ba 140	all	<LLD	4	10.6	<LLD	124/C30
Ru 106	all	<LLD	4	32.7	<LLD	600/C30
Cs 137	all	<LLD	4	4.7	----	----
	C30	----	1	1.0	1.5	85.4/C30
Zr 95	all	<LLD	4	4.8	<LLD	67/C30
Mn 54	all	<LLD	4	3.5	<LLD	67/C30
Zn 65	all	<LLD	4	8.3	<LLD	170/C30
K 40	all	861	4	75.4	----	----
	C30	----	1	49.0	1220	19790/C30

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-10

INGESTION PATHWAY (OYSTERS) NUCLIDE TRENDS



INGESTION PATHWAY (SHRIMP)

The University has the responsibility to collect and analyze shrimp. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway.

The 1983 operational concentrations are consistent with previous years' operational concentrations and preoperational concentrations.

The 1983 samples were collected in the vicinity of the Discharge Canal rather than the Ralston Purina facility. This is because the Ralston Purina facility is no longer operating. This collection method will replace Station C27 for this pathway.

TABLE III-25

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	ANRR
SHRIMP (PCI/KG) INGESTION	GAMMA ANALYSIS 2					0
	BA-140	11.6	20.2(1/ 1)C27 (20.2- 20.2)	20.2(1/ 1) (20.2- 20.2)	20.2(1/ 1) (20.2- 20.2)	
	TH-232	13.9	53.6(1/ 1)C27 (53.6- 53.6)	53.6(1/ 1) (53.6- 53.6)	53.6(1/ 1) (53.6- 53.6)	
	I-131	7.1	ND(0/ 1)			
	RA-226	14.1	69.0(1/ 1)C27 (69.0- 69.0)	69.0(1/ 1) (69.0- 69.0)	69.0(1/ 1) (69.0- 69.0)	
	RU-106	51.8	ND(0/ 1)			
	CS-137	7.2	ND(0/ 1)			
	ZR-95	6.3	ND(0/ 1)			
	MN-54	6.1	ND(0/ 1)			
	ZN-65	14.7	ND(0/ 1)			
	K-40	243.0	1860.0(1/ 1)C27 (1860.0-1860.0)	1860.0(1/ 1) (1860.0-1860.0)	1860.0(1/ 1) (1860.0-1860.0)	

TABLE III-26

SHRIMP

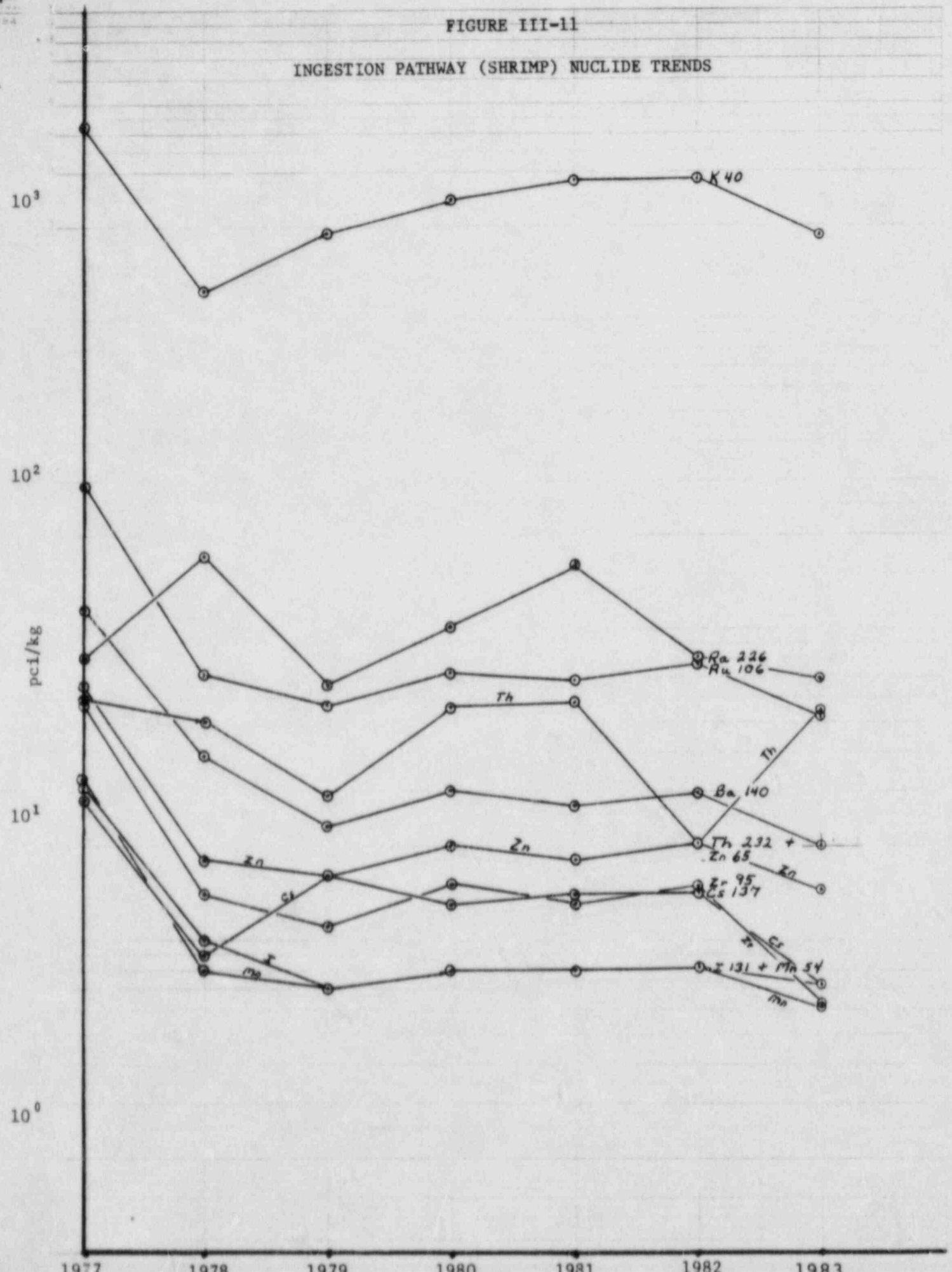
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	C27	69.0	1	14.1	69.0	300/preop
Th 232	C27	53.6	1	13.9	53.6	500/preop
I 131	C27	<LLD	1	7.1	<LLD	100/preop
Ba 140	C27	20.2	1	11.6	20.2	500/preop
Ru 106	C27	<LLD	1	51.8	<LLD	1200/preop
Cs 137	C27	<LLD	1	7.2	<LLD	200/preop
Zr 95	C27	<LLD	1	6.3	<LLD	200/preop
Mn 54	C27	<LLD	1	6.1	<LLD	100/preop
Zn 65	C27	<LLD	1	14.7	<LLD	200/preop
K 40	C27	1860	1	243	1860	25140/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-11

INGESTION PATHWAY (SHRIMP) NUCLIDE TRENDS



INGESTION PATHWAY (MILK)

The University has the responsibility to collect and analyze milk. There are no additional stations for this pathway.

Semiannual Gamma Analysis

The samples at Sample Station C49, the critical station for this pathway, were not collected due to the unavailability of milk. All other samples were collected and analyzed.

The 1983 operational concentrations are consistent with previous years' operational concentrations and generally lower than the preoperational concentrations. All gamma analysis nuclides indicated drops in environmental concentrations for 1983.

Monthly Sr-89 and 90 Analysis

All samples were collected and analyzed. Sample Station C49 is the critical station for this pathway and no samples were collected due to the unavailability of milk.

The 1983 operational concentrations are less than the preoperational values and are consistent with other operational concentrations.

TABLE III-27

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		ANRR
MILK (PCI/L) INGESTION	GAMMA ANALYSIS 24								0
	BA-140	5.4	6.2	(1/ 12)	C47 6.2	(1/ 12)	6.2	(1/ 12)	
			(6.2- 6.2)		(6.2- 6.2)		(6.2- 6.2)		
	I-131	2.9	3.5	(1/ 12)	C47 3.5	(1/ 12)	3.5	(1/ 12)	
			(3.5- 3.5)		(3.5- 3.5)		(3.5- 3.5)		
	CS-134	2.6	ND	(0/ 12)					
	CS-137	2.9	6.7	(10/ 12)	C47 6.7	(10/ 12)	6.7	(10/ 12)	
			(4.1- 11.3)		(4.1- 11.3)		(4.1- 11.3)		
	ZR-95	2.8	ND	(0/ 12)					
	CO-58	2.7	ND	(0/ 12)					
	MN-54	2.7	2.7	(1/ 12)	C47 2.7	(1/ 12)	2.7	(1/ 12)	
			(2.7- 2.7)		(2.7- 2.7)		(2.7- 2.7)		
	CO-60	2.9	3.3	(1/ 12)	C47 3.3	(1/ 12)	3.3	(1/ 12)	
			(3.3- 3.3)		(3.3- 3.3)		(3.3- 3.3)		
MILK (PCI/L) INGESTION	SR 89/90 ANALYSIS 24								0
	SR-90	0.30	4.16	(11/ 12)	C47 4.16	(11/ 12)	3.67	(11/ 12)	
			(0.35- 9.10)		(0.35- 9.10)		(0.35- 9.10)		
	SR-89	4.54	26.70	(11/ 12)	C47 26.70	(1/ 12)	26.70	(1/ 12)	
			(26.70-26.70)		(26.70-26.70)		(26.70-26.70)		

TABLE III-28

MILK

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
I 131**	C47	3.5	12	2.9	3.5	----
Ba 140	C47	6.2	12	5.4	6.2	----
Cs 137	C47	6.7	12	2.9	11.3	----
Zr 95	C47	<LLD	12	2.8	<LLD	----
Cs 134	C47	<LLD	12	2.6	<LLD	----
Co 58	C47	<LLD	12	2.7	<LLD	----
Mn 54	C47	2.7	12	2.7	2.7	----
Co 60	C47	3.3	12	2.9	3.3	----
Sr 89	C47	26.7	12	4.54	26.7	----
Sr 90	C47	4.16	12	0.3	9.10	----

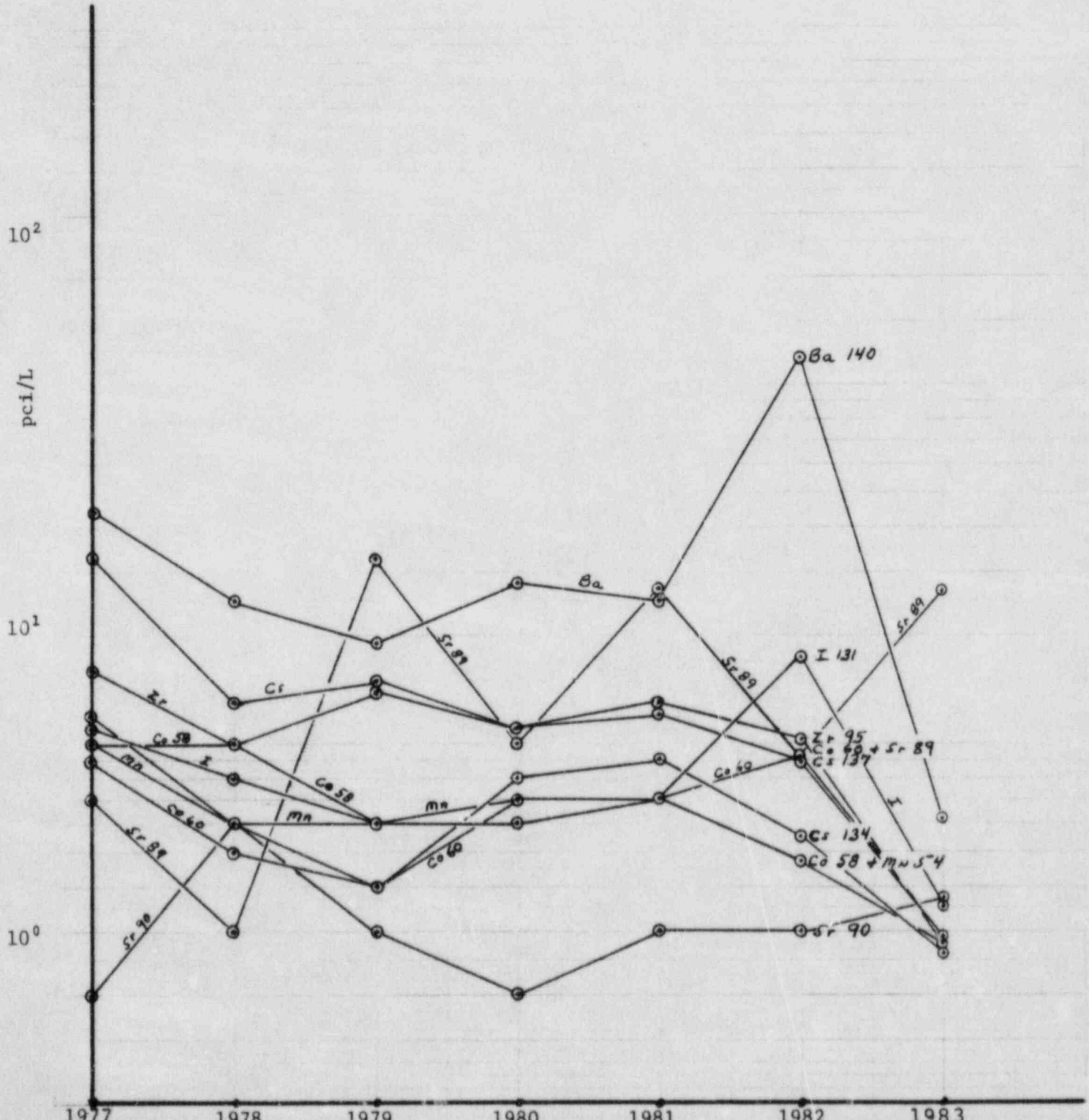
C47 is located in Gainesville, Florida, well outside the plants influence. Milk was unavailable from critical sample location C49

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

Critical radionuclides.

FIGURE III-12

INGESTION PATHWAY (MILK) NUCLIDE TRENDS



INGESTION PATHWAY (ANIMAL)

The University has the responsibility to collect and analyze small terrestial animals. There are no additional stations for this pathway.

Semiannual Gamma Analysis

Samples for the first and second halves of 1983 could not be obtained. There are no critical stations in this pathway.

Samples for this pathway have always been extremely difficult to obtain.

TABLE III-29

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
SMALL ANIMALS (PCI/KG) INGESTION	GAMMA ANALYSIS 2					0
	BA-140	0.0	NC/M(0/ 0)			
	TH-232	0.0	NC/M(0/ 0)			
	I-131	0.0	NC/M(0/ 0)			
	RA-226	0.0	NC/M(0/ 0)			
	RU-106	0.0	NC/M(0/ 0)			
	CS-137	0.0	NC/M(0/ 0)			
	ZR-95	0.0	NC/M(0/ 0)			
	MN-54	0.0	NC/M(0/ 0)			
	ZN-65	0.0	NC/M(0/ 0)			
	K-40	0.0	NC/M(0/ 0)			

TABLE III-30

ANIMALS

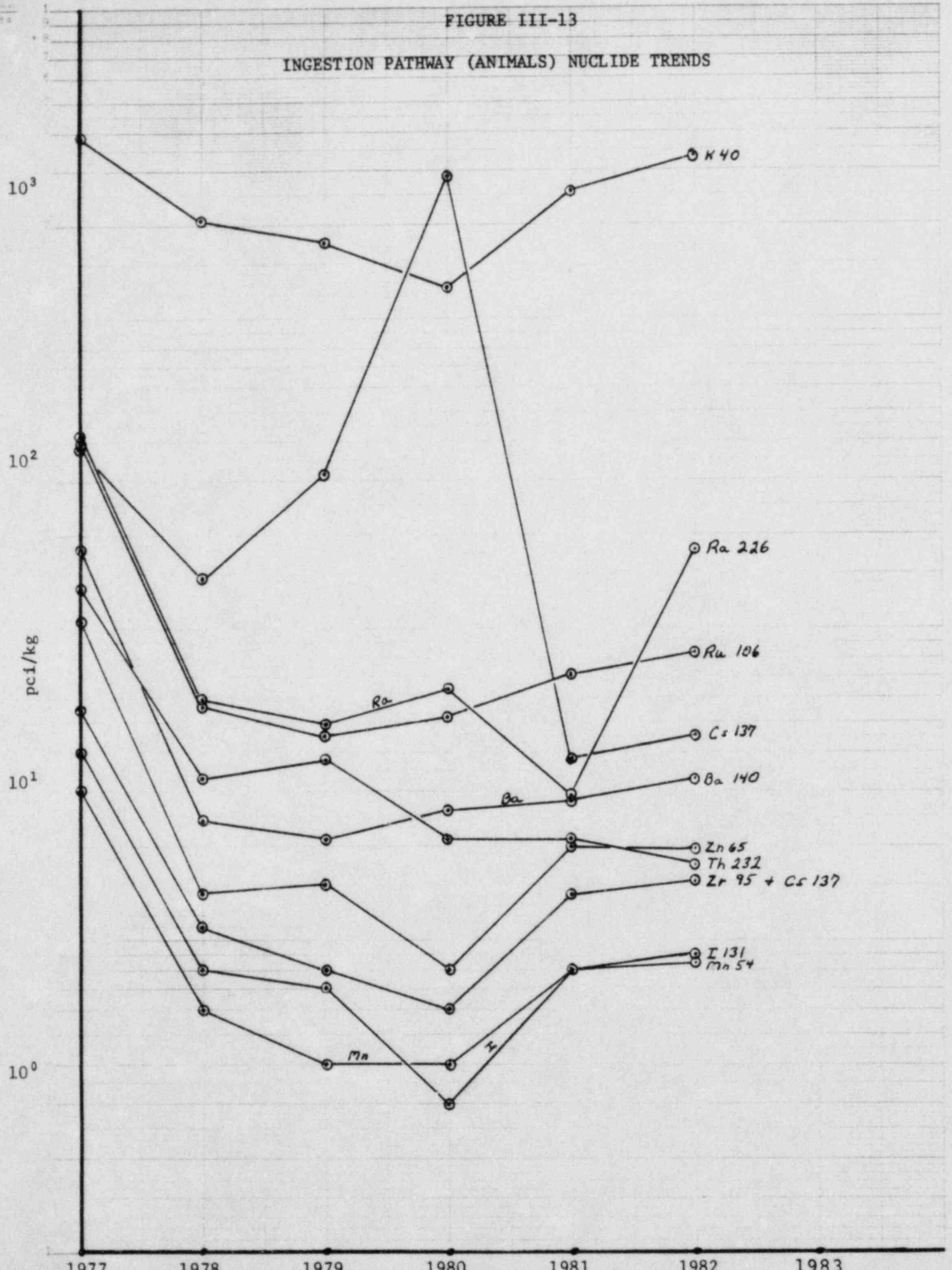
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						

NO SAMPLES COLLECTED

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever smaller. The location associated with the limit designates preoperational program or operating station us to calculate limit.

FIGURE III-13

INGESTION PATHWAY (ANIMALS) NUCLIDE TRENDS



INGESTION FOOD CROPS PATHWAY (CITRUS)

The State has the responsibility to collect and analyze citrus samples. There are no additional stations in this pathway.

Annual Gamma Analysis

There are no critical stations in this pathway. All samples were collected and analyzed. The 1983 operational analysis resulted in non-detectable activity as did all previous operational analyses. Therefore, no trend plots are included with this pathway.

TABLE III-31

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	ANRR
CITRUS (PCI/KG) INGESTION	GAMMA ANALYSIS 1					0
	BA-140	24.0	ND(0/ 1)			
	I-131	24.0	ND(0/ 1)			
	CS-134	24.0	ND(0/ 1)			
	CS-137	24.0	ND(0/ 1)			
	CO-58	24.0	ND(0/ 1)			
	MN-54	21.0	ND(0/ 1)			
	ZN-65	42.0	ND(0/ 1)			
	CO-60	24.0	ND(0/ 1)			

INGESTION FOOD CROPS PATHWAY (WATERMELON)

The State has the responsibility to collect and analyze watermelon samples. There are no additional stations in this pathway.

Annual Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway. There are no preoperational data for this pathway. The 1983 operational analyses resulted in non-detectable activity as did all previous operational analyses. Therefore, no trend plots were included for this pathway.

TABLE III-32

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
WATERMELON (PCI/KG) INGESTION	GAMMA ANALYSIS 1					0
	BA-140	24.0	ND(0/ 1)			
	I-131	24.0	ND(0/ 1)			
	CS-134	24.0	ND(0/ 1)			
	CS-137	24.0	ND(0/ 1)			
	CO-58	24.0	ND(0/ 1)			
	MN-54	21.0	ND(0/ 1)			
	ZN-65	42.0	ND(0/ 1)			
	CO-60	24.0	ND(0/ 1)			

FOOD CHAIN PATHWAY (GRASSES)

The University has the responsibility to collect and analyze grass samples. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There are no critical stations in this pathway.

The 1983 operational concentrations are consistent with previous operational and preoperational concentrations.

The following discrepancy was noted:

- C40 and second half I-131 LLD exceeded the Technical Specification required LLD due to the bulky nature of the sample which prevented sufficient density (wt/vol) to meet the required LLD's.

TABLE III-33

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS		HIGHEST MEAN LOCATION		CONTROL LOCATION		NR
VEGETATION (PCI/KG) FOOD CHAIN	GAMMA ANALYSIS 6								2
	BA-140	15.1	93.6(1/ 6)	C05	93.6(1/ 2)		93.6(1/ 6)		
			(93.6- 93.6)		(93.6- 93.6)		(93.6- 93.6)		
	TH-232	15.1	69.8(6/ 6)	C40	96.2(2/ 2)		69.8(6/ 6)		
			(38.5- 98.9)		(93.4- 98.9)		(38.5- 98.9)		
	I-131	8.9	ND(0/ 6)						
	RA-226	15.2	81.5(6/ 6)	C40	122.0(2/ 2)		81.5(6/ 6)		
			(39.5- 134.0)		(110.0- 134.0)		(39.5- 134.0)		
	RU-106	59.3	67.2(1/ 6)	C41	67.2(1/ 2)		67.2(1/ 6)		
			(67.2- 67.2)		(67.2- 67.2)		(67.2- 67.2)		
	CS-137	7.5	271.8(6/ 6)	C05	425.0(2/ 2)		271.8(6/ 6)		
			(18.0- 778.0)		(71.9- 778.0)		(18.0- 778.0)		
	ZR-95	6.8	ND(0/ 6)						
	MN-54	6.4	ND(0/ 6)						
	ZN-65	14.8	ND(0/ 6)						
	K-40	116.0	2360.5(6/ 6)	C41	3375.0(2/ 2)		2360.5(6/ 6)		
			(1550.0-4300.0)		(2450.0-4300.0)		(1550.0-4300.0)		

TABLE III-34

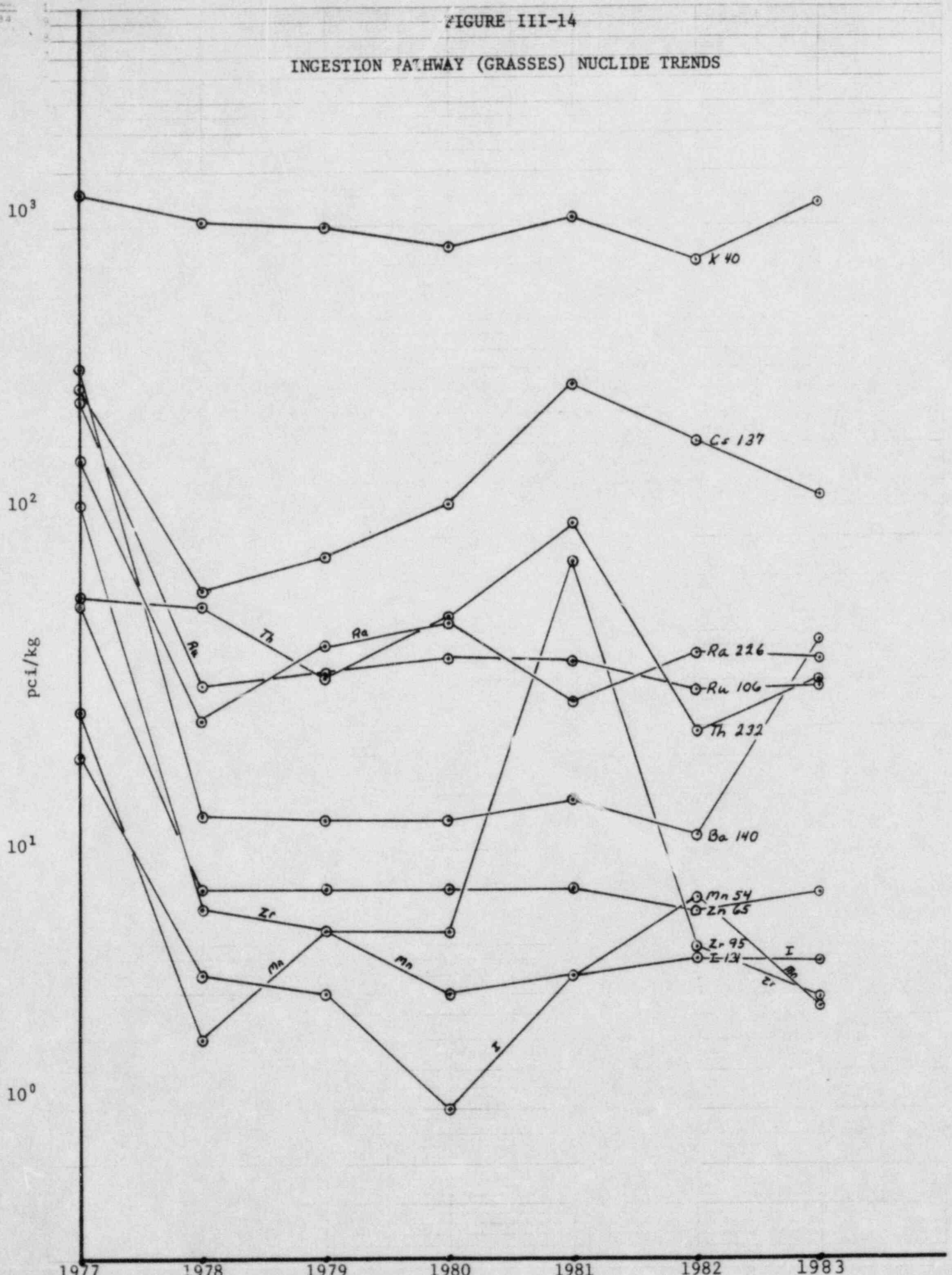
GRASSES

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	81.5	6	15.2	134	----
	C40	----	1	22.0	134	23630/preop
Th 232	all	69.8	6	15.1	98.9	----
	C40	----	1	19.0	98.9	1200/preop
I 131	all	<LLD	6	8.9	<LLD	100/preop
Ba 140	all	93.6	6	15.1	93.6	2530/preop
	C05	---	1	13.0	93.6	
Ru 106	all	67.2	6	59.3	67.2	1200/preop
	C41	---	1	59.0	67.2	
Cs 137	all	272	6	7.5	778	----
	C05	----	1	6.0	778	54160/preop
Zr 95	all	<LLD	6	14.8	<LLD	310/preop
Mn 54	all	<LLD	6	6.4	<LLD	100/preop
Zn 65	all	<LLD	6	14.8	<LLD	5890/preop
K 40	all	2360	6	116	4300	----
	C41	----	1	119	4300	24302/preop

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

FIGURE III-14

INGESTION PATHWAY (GRASSES) NUCLIDE TRENDS



FOOD CHAIN PATHWAY (SOIL)

The University of Florida has the responsibility to collect and analyze soil samples. There are no additional stations for this pathway.

Gamma Analysis

The soil sample collection and analysis is required once every three years. Samples were obtained in 1981 and are not required again until 1984.

FOOD CHAIN PATHWAY (MEAT)

The State has the responsibility to collect and analyze meat samples. There are no additional stations in this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There is no critical station in this pathway. There are no preoperational data for this pathway. All 1983 operational analyses resulted in non-detectable activity except for Cs-137 which had elevated concentrations on both samples. Of the two samples collected, the results were 126 pci/kg and 1800 pci/kg. A review of other nuclide concentrations and the previous two years of Effluent and Waste Disposal Semiannual Reports indicate that these values are not due to plant operations.

TABLE III-35

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
MEAT (PCI/KG) INGESTION	GAMMA ANALYSIS 2					1
	BA-140	39.0	ND(0/ 2)			
	I-131	38.0	ND(0/ 2)			
	CS-134	60.0	ND(0/ 2)			
	CS-137	37.0	963.0(2/ 2) (126.0-1800.0)	C50 963.0(2/ 2) (126.0-1800.0)	963.0(2/ 2) (126.0-1800.0)	
	CO-58	60.0	ND(0/ 2)			
	MN-54	32.0	ND(0/ 2)			
	ZN-65	66.0	ND(0/ 2)			
	CO-60	60.0	ND(0/ 2)			

FOOD CHAIN PATHWAY (POULTRY)

The State has the responsibility to collect and analyze poultry samples. There are no additional stations in this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There is no critical station in this pathway. There are no preoperational data for this pathway.

The 1983 operational concentrations were non-detectable as were all previous operational concentrations, therefore, no trend plots were included.

TABLE III-36

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NR
POULTRY (PCI/KG) INGESTION	GAMMA ANALYSIS 2					0
	BA-140	39.0	ND(0/ 2)			
	I-131	38.0	ND(0/ 2)			
	CS-134	60.0	ND(0/ 2)			
	CS-137	37.0	ND(0/ 2)			
	CO-58	60.0	ND(0/ 2)			
	MN-54	32.0	ND(0/ 2)			
	ZN-65	66.0	ND(0/ 2)			
	CO-60	60.0	ND(0/ 2)			

FOOD CHAIN PATHWAY (EGGS)

The State has the responsibility to collect and analyze egg samples. There are no additional stations in this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. There is no critical sample station in this pathway. There are no preoperational data for this pathway and all 1983 operational analyses resulted in non-detectable activity as did all previous operational analyses. Therefore, no trend plots were provided for this pathway.

TABLE III-37

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	NRR
EGGS (PCI/KG) INGESTION	GAMMA ANALYSIS 2					0
	LA-140	39.0	ND(0/ 2)			
	I-131	38.0	ND(0/ 2)			
	CS-134	60.0	ND(0/ 2)			
	CS-137	37.0	ND(0/ 2)			
	CO-58	60.0	ND(0/ 2)			
	MN-54	32.0	ND(0/ 2)			
	ZN-65	66.0	ND(0/ 2)			
	CO-60	60.0	ND(0/ 2)			

FOOD CHAIN PATHWAY (GREEN LEAFY VEGETABLES)

The University has the responsibility to collect and analyze green leafy vegetable samples. There are no additional stations for this pathway.

Semiannual Gamma Analysis

All samples were collected and analyzed. The critical station for this type of analysis (Sample Station C48) is in the east sector at 4.0 miles from the plant. There are no preoperational data for this pathway.

The 1983 operational concentrations are consistent with previous operational years' concentrations.

Semiannual Sr-90 Analysis

All samples were collected and analyzed. The critical station for this type of analysis is Station C48. The 1983 operational concentrations for Sr-90 were above the LLD for the analysis. No operational events of effluent releases from Crystal River Unit 3 could be linked with these values. The elevated concentrations may be the result of residual fallout from the 1980 weapons tests.

TABLE III-38

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/83-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS	HIGHEST MEAN LOCATION	CONTROL LOCATION	ANR
G. L. VEG. (PCI/KG) INGESTION	GAMMA ANALYSIS 4					0
	BA-140	10.5	98.6(1/ 4) (98.6- 98.6)	C48 98.6(1/ 2) (98.6- 98.6)	ND (0/ 2)	
	TH-232	10.1	46.2(4/ 4) (16.4- 97.8)	C47 70.5(2/ 2) (43.1- 97.8)	70.5(2/ 2) (43.1- 97.8)	
	I-131	6.0	17.3(1/ 4) (17.3- 17.3)	C47 17.3(1/ 2) (17.3- 17.3)	17.3(1/ 2) (17.3- 17.3)	
	RA-226	12.6	73.2(4/ 4) (15.3- 126.0)	C47 75.7(2/ 2) (37.4- 114.0)	75.7(2/ 2) (37.4- 114.0)	
	RU-106	45.4	ND(0/ 4)			
	CS-137	9.2	51.4(2/ 4) (42.8- 59.9)	C48 59.9(1/ 2) (59.9- 59.9)	42.8(1/ 2) (42.8- 42.8)	
	ZR-95	5.5	7.5(2/ 4) (6.7- 8.3)	C48 8.3(1/ 2) (8.3- 8.3)	6.7(1/ 2) (6.7- 6.7)	
	MN-54	4.9	ND(0/ 4)			
	ZN-65	14.1	ND(0/ 4)			
	K-40	109.3	5017.0(4/ 4) (2768.0-9750.0)	C47 6490.0(2/ 2) (3230.0-9750.0)	6490.0(2/ 2) (3230.0-9750.0)	
G. L. VEG. (PCI/KG) FOOD CHAIN	SR 89/90 ANALYSIS 4					1
	SR-90	1.9	107.7(4/ 4) (19.4-279.0)	C48 169.9(2/ 2) (60.8-279.0)	45.5(2/ 2) (19.4- 71.7)	

TABLE III-39

GREEN LEAFY VEGETABLES

Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis						
Ra 226	all	73.2	4	12.6	126	----
	C48**	----	1	18.0	126	1820/C47
Th 232	all	46.2	4	10.1	----	----
	C48**	----	1	6.0	28.0	1200/C47
	C47	----	1	13.0	97.8	1200/C47
I 131**	all	17.3	4	6.0	17.3	----
	C48**	----	2	8.0		
	C47	---	1	5.0	17.3	260/C47
Ba 140	all	98.6	4	10.5	98.6	----
	C48**	----	1	13.0	98.6	138/C47
Ru 106	all	<LLD	4	45.4	<LLD	----
	C48**	----	2	53.0	<LLD	622/C47
Cs 137	all	51.4	4	9.2	59.9	----
	C48*	----	1	3.0	59.9	749/C47

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

TABLE III-39 (Con't)

GREEN LEAFY VEGETABLES

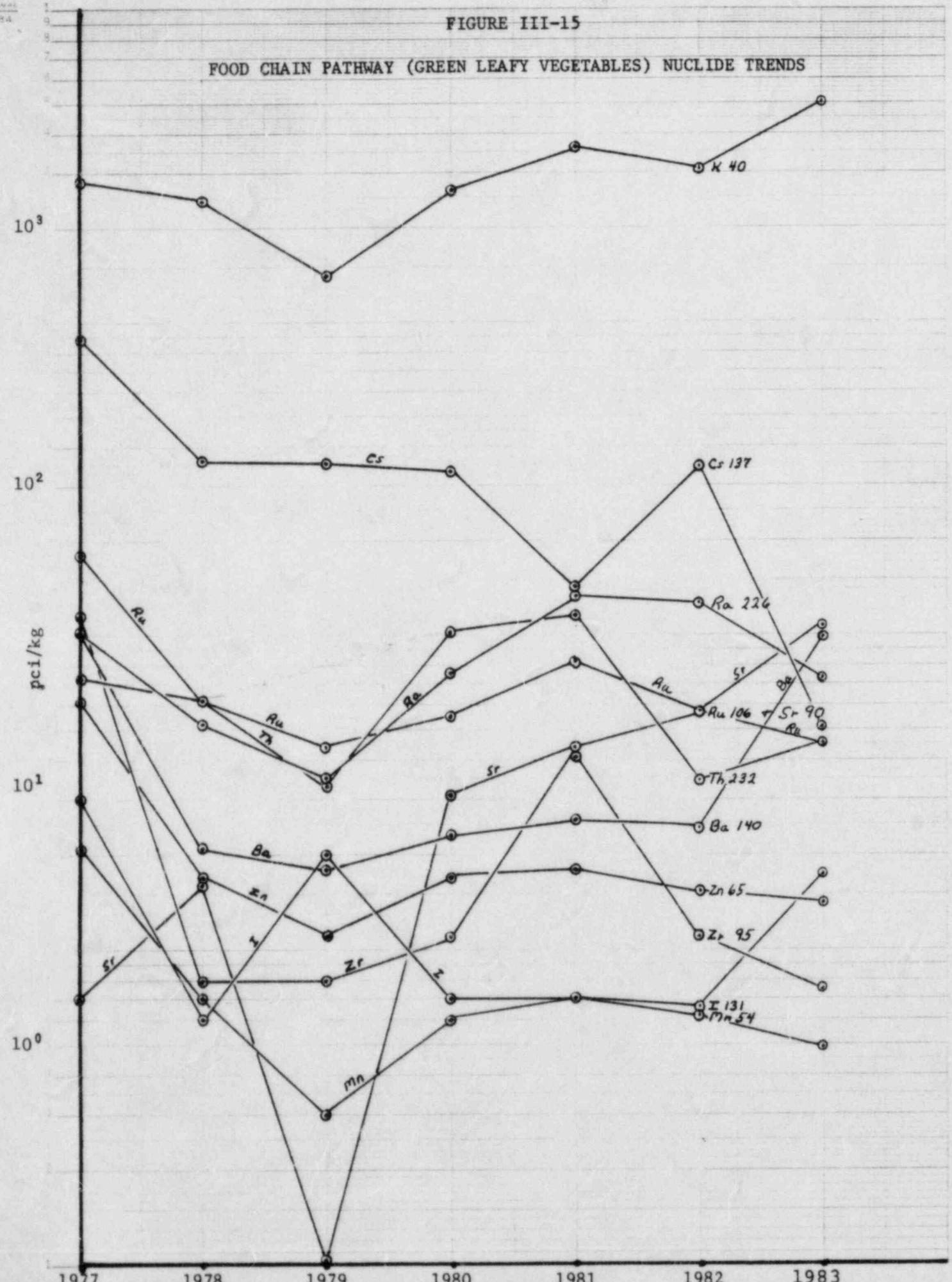
Parameter	Sampling Location	Mean (pci/kg)	No. of Samples	LLD (pci/kg)	Highest Single Value (pci/kg)	Limit* Location (pci/kg)
Gamma Analysis (Con't)						
Zr 95	all	7.5	4	5.5	8.3	----
	C48**	----	1	7.0	5.3	70/C47
Mn 54	all	<LLD	4	4.9	<LLD	----
	C48**	----	2	5.0	<LLD	60/C47
Zn 65	all	<LLD	4	14.1	<LLD	----
	C48**	----	2	19.0	<LLD	150/C47
K 40	all	5017	4	109	----	----
	C48**	----	1	34	4320	24300/C47
	C47	----	1	65	9750	24300/C47
Sr 90	all	108	4	1.9	279	----
	C48**	----	1	2.4	279	1181/C47

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE III-15

FOOD CHAIN PATHWAY (GREEN LEAFY VEGETABLES) NUCLIDE TRENDS



IV. EXTERNAL RADIATION

This category includes measurements of ambient radiation at numerous locations and frequencies as required by Section 3.2.2 of Environmental Technical Specifications. A brief narrative summary, two tables and a trend plot, is provided to document in easily usable form the effects of effluent releases from Crystal River Unit 3 on the surrounding environment.

The first table summarizes the data as required by Section 5.6.1.A of Environmental Technical Specifications. The second table provides a comparison of required reporting levels to the analytical data as required by Section 5.6.2.C(2). The trend plot was developed from the mean of the State DHRS and the University of Florida external radiation data for all locations from 1977 to 1983.

EXTERNAL RADIATION

The "External Radiation" portion of the Radiological Environmental Monitoring Program (Specification 3.2.3) is split between the University and the State. (See Table I-1.) The University also has a TLD at Sample Station C47 and the State has additional TLD's at Sample Stations C04, C40, and C46. Sample Stations C14H, C14M, and C14G are the critical stations in this pathway.

The 1983 data from all TLD stations are consistent with previous operational years' data and preoperational data. Additionally, the critical stations and the control stations of the University also compare very well. However, because the University and the State use different types of TLD's, it is necessary to report their results separately. The higher values associated with Station C26 are attributed to the concentration of phosphate local to the station as well as substrate adjacent to the TLD location.

TABLE IV-1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3 DOCKET NO.50-302

CITRUS COUNTY, FLORIDA REPORTING PERIOD 01/01/-12/31/83

PATHWAY	TYPE & NO.	LLD	ALL LOCATIONS			HIGHEST MEAN LOCATION			CONTROL LOCATION			NR
AIR SUBMERSION (MREM/YR)	EXTERNAL RADIATION 64	46.0	30.(64/ 64)AC26			154.(4/ 4)			34.(52/ 52)			0
			(7.- 160.)			(148.- 160.)			(7.- 160.)			

TABLE IV-2

EXTERNAL RADIATION

Parameter	Sampling Location	Mean (mrem/yr)	No. of Samples	LLD (mrem/yr)	Highest Single Value (mrem/yr)	Limit* Location (mrem/yr)
External Radiation (U of F)	all	30	36	15	----	----
	C14H**	----	1	15	15	158/C47
	C14M**	----	1	15	13	158/C47
	C14G**	----	1	15	13	158/C47

*Defined as either (1) 10 times the upper 95 percentile confidence value from preoperational program, or (2) 10 times the upper 95 percentile value from operating stations outside the plant's influence, whichever is smaller. The location associated with the limit designates preoperational program or operating station used to calculate limit.

**Critical Pathway Sample Station and critical radionuclides.

FIGURE IV-1

EXTERNAL RADIATION TRENDS

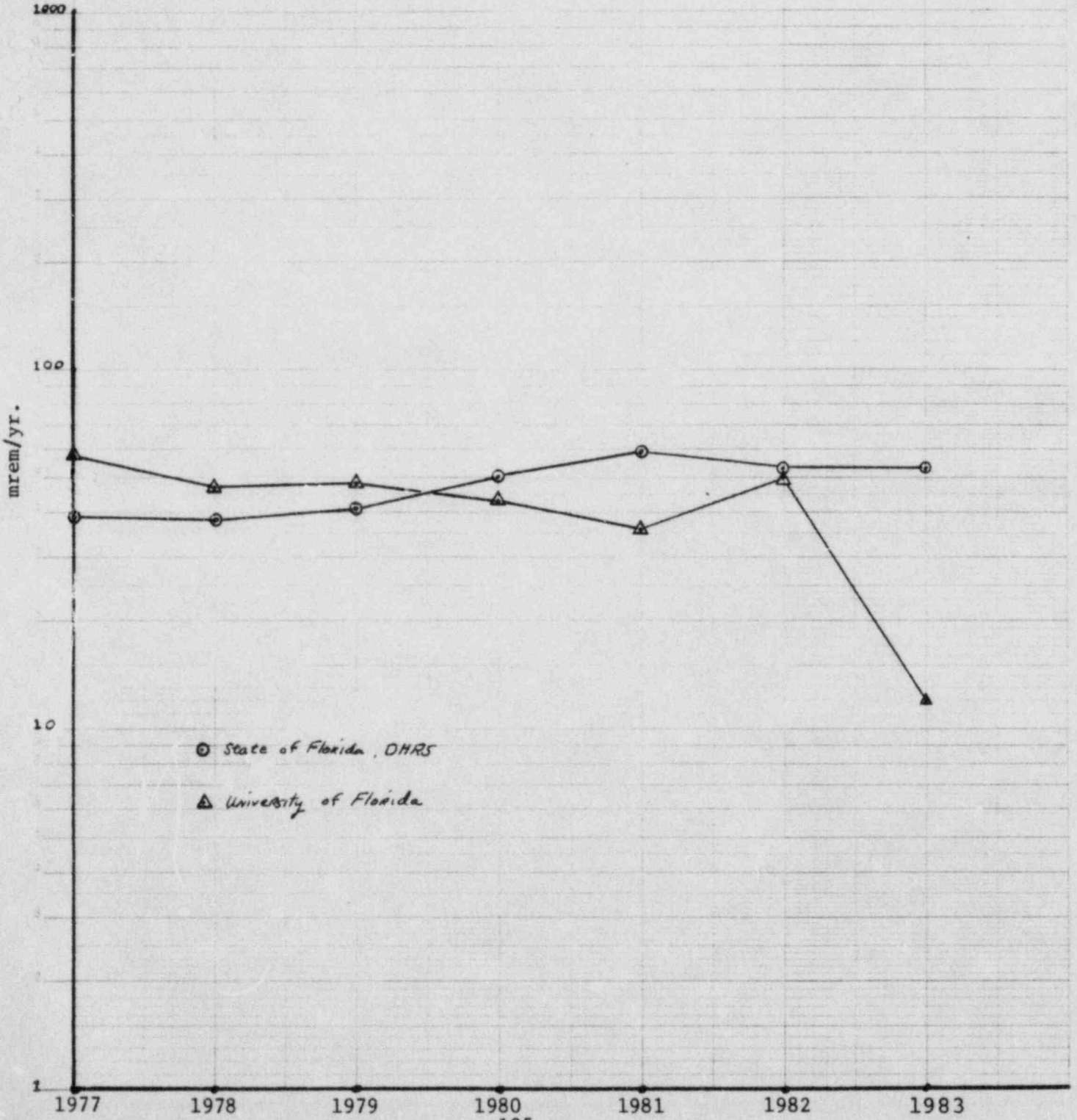


Table 2.1

Crystal River Unit 3 Nuclear Plant General Information

Licensee	Florida Power Corporation P. O. Box 14042 St. Petersburg, FL 33733
Location	7.5 miles northwest (NW) of Crystal River, Florida
Direction and Proximity of Nearest City	Crystal River, Florida; 7.5 miles southeast (SE)
Permanent Population	7,100
Population and Proximity of Nearest Metropolitan Areas	
Ocala, Florida	36,000; 45 miles northeast (NE)
Gainesville, Florida	72,000; 60 miles northeast (NE)
Approximate Population (1980)	
Around Site	0
2-mile Radius	0
5-mile Radius	1,200
10-mile Radius	11,200
50-mile Radius	275,000
Reactors	CR-3
Type - Size	PWR - 855 MWe
Commercial Operation	March, 1977
Nuclear Steam Supply System	Babcock & Wilcox
Number of Steam Generators	Two
Architect-Engineer	Gilbert Associates, Inc.
Constructor	J. A. Jones
Containment	Dry, reinforced concrete cylinder with steel liner
Condenser Cooling Method	Once-through
Cooling Water Source	Gulf of Mexico
Safety-related Service Water Source	Gulf of Mexico
Emergency AC Power Source	Emergency Diesel Generators
Size of Site	4,738 acres

MONTGOMERY

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Florida Power
CORPORATION

March 30, 1984
3F0384-23

Mr. James P. O'Reilly, Regional Administrator
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W., Suite 2900
Atlanta, GA 30303

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
Annual Radiological Environmental Operating Report

Dear Mr. O'Reilly:

Pursuant to Crystal River Unit 3 Technical Specification, Appendix B, Part 1, Section 5.6.1, attached is a copy of the Annual Radiological Environmental Operating Report. The report contains the data obtained from the radiological environmental surveillance program conducted for the Crystal River Site for 1983.

Should you have any questions concerning this matter, please contact this office.

Sincerely,

G. R. Westafer
Manager, Nuclear Operations
Licensing and Fuel Management

Attachment

REF/mlg

cc: Document Control Desk (18)
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

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