



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: ITS 5.7.1.1(b)

May 12, 2008
3F0508-01

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – 2007 Annual Radiological Environmental Operating Report

Dear Sir:

Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., hereby submits the 2007 Annual Radiological Environmental Operating Report for Crystal River Unit 3 (CR-3) in accordance with the CR-3 Improved Technical Specifications, Section 5.7.1.1(b) and Section 6.6 of the Offsite Dose Calculation Manual (ODCM). The data provided in the attached report is consistent with the objectives outlined in the ODCM, and includes all radiological environmental samples taken during the report period from January 1, 2007 through December 31, 2007.

This letter establishes no new regulatory commitments.

If you have any questions regarding this submittal, please contact Mr. Dennis Herrin, Acting Supervisor, Licensing and Regulatory Programs at (352) 563-4633.

Sincerely,

M. J. Annacone
Plant General Manager

MJA/ ff

Attachment

xc: NRR Project Manager
Regional Administrator, Region II
Senior Resident Inspector

TE25
KRR

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72

ATTACHMENT

**2007 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING
REPORT**

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

2007

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INTRODUCTION

This report is submitted as required by Technical Specification 5.7.1.1(b) to the Crystal River Facility Operating License No. DPR-72, and Section 6.6 of the Offsite Dose Calculation Manual.

The following information is required to be included in this report:

- Data Summaries
- Interpretations
- Unachievable LLDs
- An analysis of trends
- An assessment of any observed impact of plant operation on the environment

NOTE: If harmful effects or evidence of irreversible damage are detected by the monitoring, the report shall provide an analysis of the problem and a planned course of action to correct it.

- Summarized and tabulated results of all radiological environmental samples taken during the report period, in the format of Radiological Assessment Branch Technical Position, Revision 1, November, 1979

NOTE: If some results are not available for inclusion, the report shall note and explain the reason for the missing results. The missing results shall be submitted as soon as possible in a supplementary report.

- A summary description of the Radiological Environmental Monitoring Program
- A map of all sampling locations keyed to a table giving distances and directions from the reactor
- Land-use census results
- Interlaboratory Comparison Program results
- A discussion of airborne sample station availability.
- Results of any unplanned release or spill of radioactive material that could have the potential to contaminate the groundwater as reported to maintain compliance with the groundwater protection initiative (NEI 07-07).

I. SUMMARY DESCRIPTION OF THE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

The analytical results of the Crystal River Unit 3 (CR-3) operational Radiological Environmental Monitoring Program (REMP) for 2007 are contained in this report. The operational program began on January 1, 1977 just prior to initial criticality, which was achieved on January 14, 1977.

Sampling of the facility environs is performed by the State of Florida Department of Health, Bureau of Radiation Control. The State also performs the required analyses, participates in the Interlaboratory Comparison Program, and performs the annual land-use census. Prior to 1990, the program was split between the Department of Health and the University of Florida. The transition to the State performing all of the program's sampling and analyses in 1990 is evident in several of the trend graphs, most notably oysters and carnivorous fish, and is due to the State using less sensitive measurement techniques for several of the pathways which were formerly evaluated by the University of Florida.

Sample station locations are given in Table I-1 and Figures I-2, -3, and -4. Sample frequency and analysis type may be determined from Table I-2. Figure I-1 illustrates the relevant exposure pathways.

Except for air sample gross beta results and direct radiation measurements, most of the analytical results are below the lower limit of detection (LLD) of the sample. Sample LLDs are generally much lower than the required "a priori" LLD. When measurable results are reported, the values are also usually less than the required "a priori" LLD.

The results of the 2007 REMP have been compared to previous years' results. This comparison, in part illustrated by the trend graphs of Section IV, shows no evidence of consistent long-term increasing trends in any of the sample media. However, radioactive material is routinely quantified in sediment samples which are taken in the discharge canal near the liquid release discharge point. In general, these results verify the effectiveness of in-plant measures for controlling radioactive releases.

Trend graphs illustrate the mean measured concentration of a particular radionuclide for the year. When measurable results are not obtained, the highest sample LLD is plotted. LLD and measured values are plotted on the same line to best illustrate any trend. As shown on each graph's legend, any measured value is noted by a text box, unless all values trended are measured values for that particular parameter.

Statistical summary pages are provided for each medium or pathway. Measured values are reported in terms of a mean and range. In addition, the number of measured values versus samples obtained is reported. For example, the following entry

15 (249/256)
(4 - 35)

in the "All Indicator Locations" column would be interpreted as indicating a mean measured value of 15, with measured values ranging from 4 to 35. (249/256) means that out of 256 samples, 249 were measured values.

TABLE I-1

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

SAMPLE STATION LOCATIONS

SAMPLE MEDIA	STATION ID	DIRECTION	APPROX. DISTANCE
			(Miles)
TLD	C60	N	0.88
	C61	NNE	0.92
	C62	NE	1.17
	C63	ENE	0.87
	C64	E	0.80
	C65	ESE	0.33
	C66	SE	0.36
	C67	SSE	0.33
	C68	S	0.27
	C69	SSW	0.31
	C41	SW	0.43
	C70	WSW	0.74
	C71	WNW	0.58
	C72	NW	0.30
	C73	NNW	0.74
	C27	W	0.41
	C18	N	5.3
	C03	NNE	4.89
	C04	NE	5.95
	C74	ENE	5.13
	C75	E	3.99
	C76	ESE	5.61
	C08	SE	5.66
	C77	SSE	3.39
	C09	S	3.23
	C78	WSW	4.59
	C14G	W	2.53
	C01	NW	4.8
	C79	NNW	4.97
	C47-Control	ESE	78
	C07*	ESE	7.67
	C40*	E	3.48
	C46*	N	0.37

*TLDs not required by ODCM. Deployed at air sample locations.

TABLE I-1 (CONT'D)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

SAMPLE STATION LOCATIONS

SAMPLE MEDIA	STATION ID	DIRECTION	DISTANCE (Miles)
AIR	C07	ESE	7.7
	C18	N	5.3
	C40	E	3.5
	C41	SW	0.4
	C46	N	0.4
	C47-Control	ESE	78
SEAWATER	C14H	NW	0.1
	C14G	W	2.5
	C13-Control	WSW	4.6
GROUND WATER	C40-Control	E	3.6
SITE GROUND WATER	CR3-2	E	0.1
	CR3-4	SSE	0.086
	CR3-5	SSW	0.051
	CR3-6S	W	0.038
	CR3-6D	W	0.038
	CR3-7	WNW	0.060
	CR3-8	WNW	0.073
	CR3-9	NW	0.1
	CR3-10	NNE	0.1
	DRINKING WATER	C07-Control	ESE
C10-Control		ESE	6.0
C18-Control		N	5.3
SHORELINE SEDIMENT	C09-Control	S	3.2
	C14H	NW	0.1
	C14M	W	1.2
	C14G	W	2.5
FISH & OYSTERS	C29	W	2.5
	C30-Control	WSW	3.4
BROAD LEAF VEGETATION	C48A	N	0.4
	C48B	NNE	0.9
	C47-Control	ESE	78
WATERMELON	C04	NE	13
CITRUS	C19	ENE	9.6

TABLE I-2
PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007
SAMPLING AND ANALYSIS PROGRAM

SAMPLE MEDIA	# OF STATIONS	FREQUENCY	ANALYSIS	LLD ¹	
TLD	33*	Quarterly	γ Dose	---	
Air Iodine	6	Weekly	I-131	0.07 pCi/m ³	
Air Particulate	6	Weekly	Gross β	0.01	
		Quarterly	γ Spec :	Cs-134	0.05
			Cs-137	0.06	
Seawater	3	Monthly	Tritium	3000 pCi/L	
		Monthly	γ Spec :	Mn-54	15
				Fe-59	30
				Co-58	15
				Co-60	15
				Zn-65	30
				Zr-Nb-95	15
				I-131	1
				Cs-134	15
				Cs-137	18
				Ba-La-140	15
Ground Water	1	Semiannual	Tritium	2000 pCi/L	
		Semiannual	γ Spec :	²	
Site Ground Water ⁶	9	Quarterly	Tritium	3000 pCi/L	
		Quarterly	γ Spec :	²	
Drinking Water	3	Quarterly	Tritium	2000 pCi/L	
		Quarterly	γ Spec :	²	
Shoreline Sediment	4	Semiannual	γ Spec :	Cs-134	150 pCi/kg
				Cs-137	180

*Includes 3 stations which are not required by the ODCM

¹The maximum "a priori" LLD

²Same as Seawater γ Spec

³When available

⁴During harvest

⁵Same as broad leaf vegetation

⁶Additional 2 stations reported that are not required by the ODCM

TABLE I-2 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

SAMPLING AND ANALYSIS PROGRAM

SAMPLE MEDIA	# OF STATIONS	FREQUENCY	ANALYSIS	LLD ¹	
Carnivorous Fish and Oysters	2	Quarterly	γ Spec :	Mn-54	130 pCi/kg
				Fe-59	260
				Co-58	130
				Co-60	130
				Zn-65	260
				Cs-134	130
				Cs-137	150
Broad Leaf Vegetation	3	Monthly ³	γ Spec :	I-131	60 pCi/kg
				Cs-134	60
				Cs-137	80
Watermelon	1	Annual ⁴	γ Spec :	⁵	⁵
Citrus	1	Annual ⁴	γ Spec :	⁵	⁵

¹The maximum "a priori" LLD

²Same as Seawater γ Spec

³When available

⁴During harvest

⁵Same as broad leaf vegetation

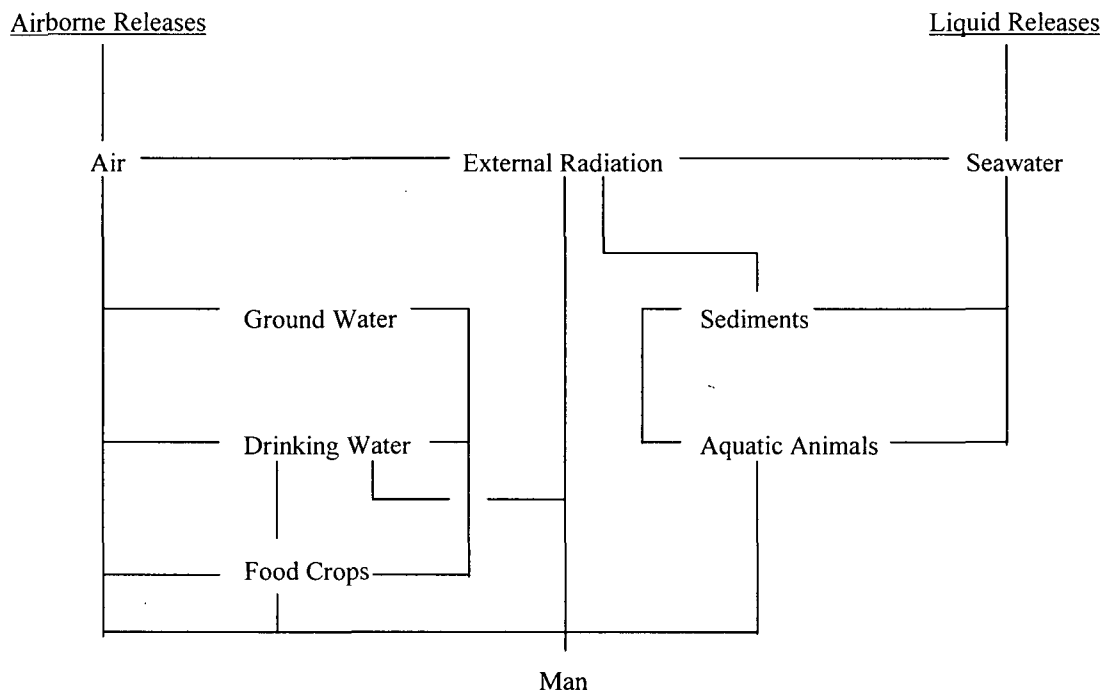


FIGURE I-1: Environmental Media and Exposure Pathways

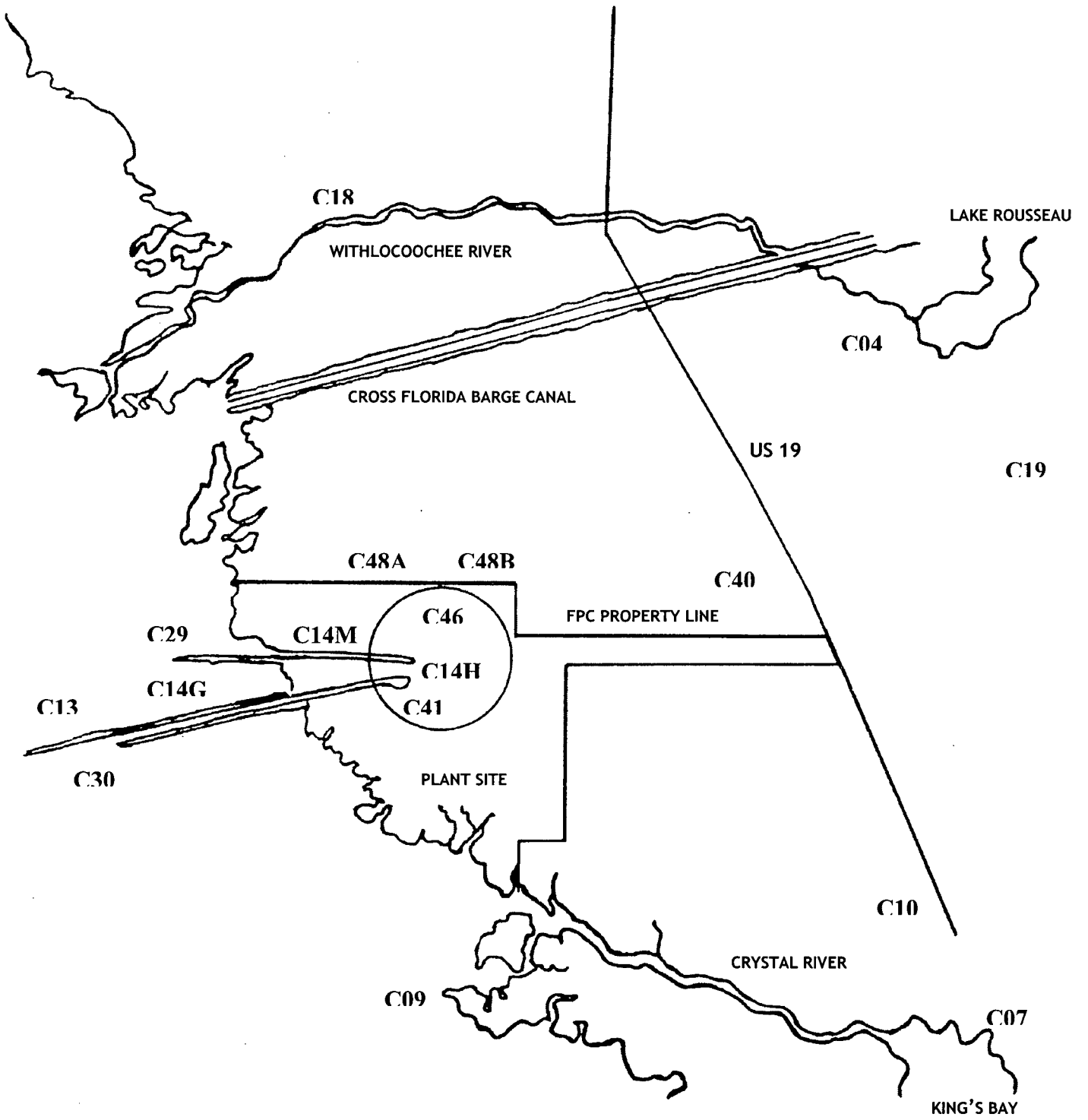
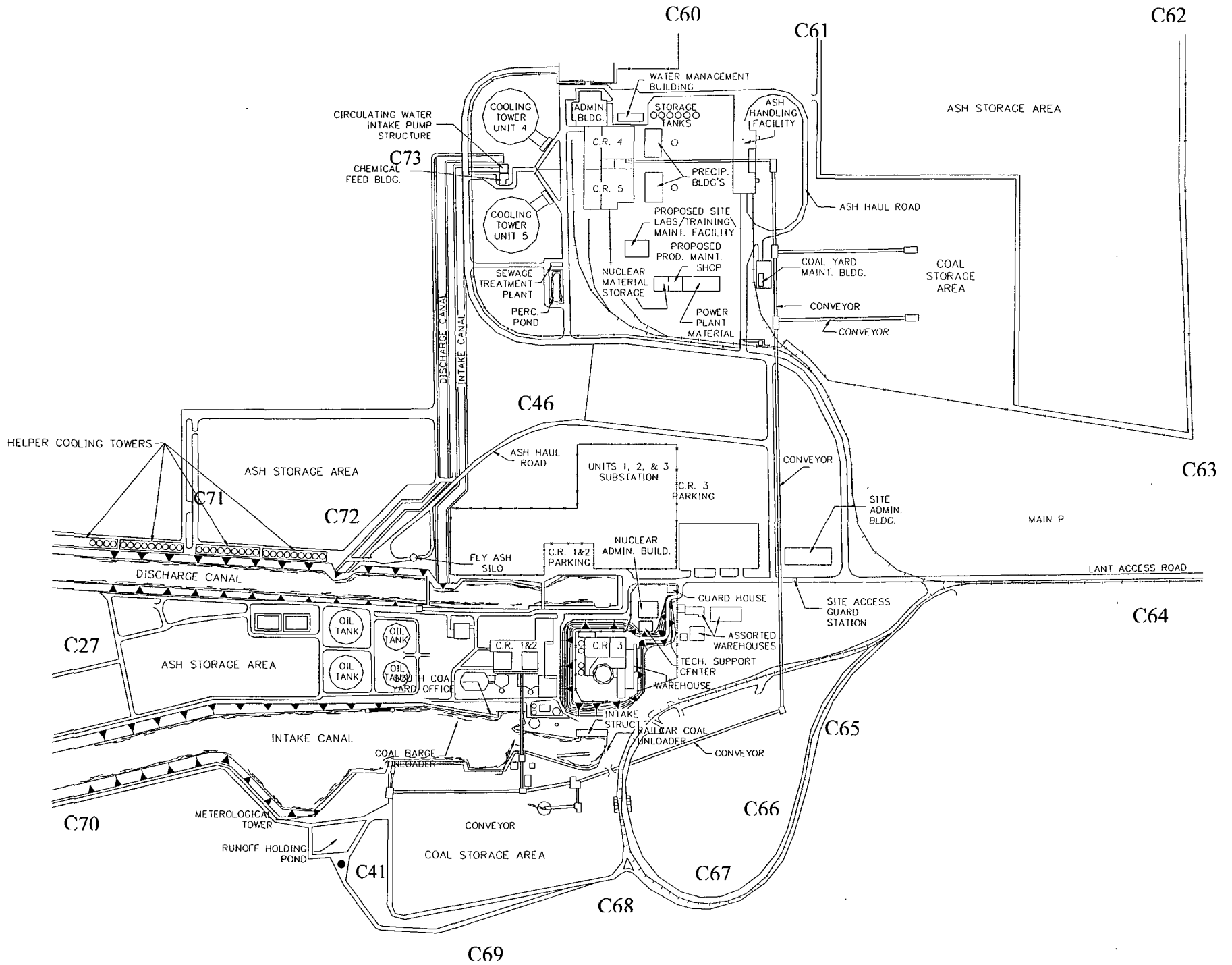


FIGURE I-2: Environmental Monitoring Sample Stations (non-TLDs)

FIGURE I-3: Environmental Monitoring TLD Locations (on site)

8



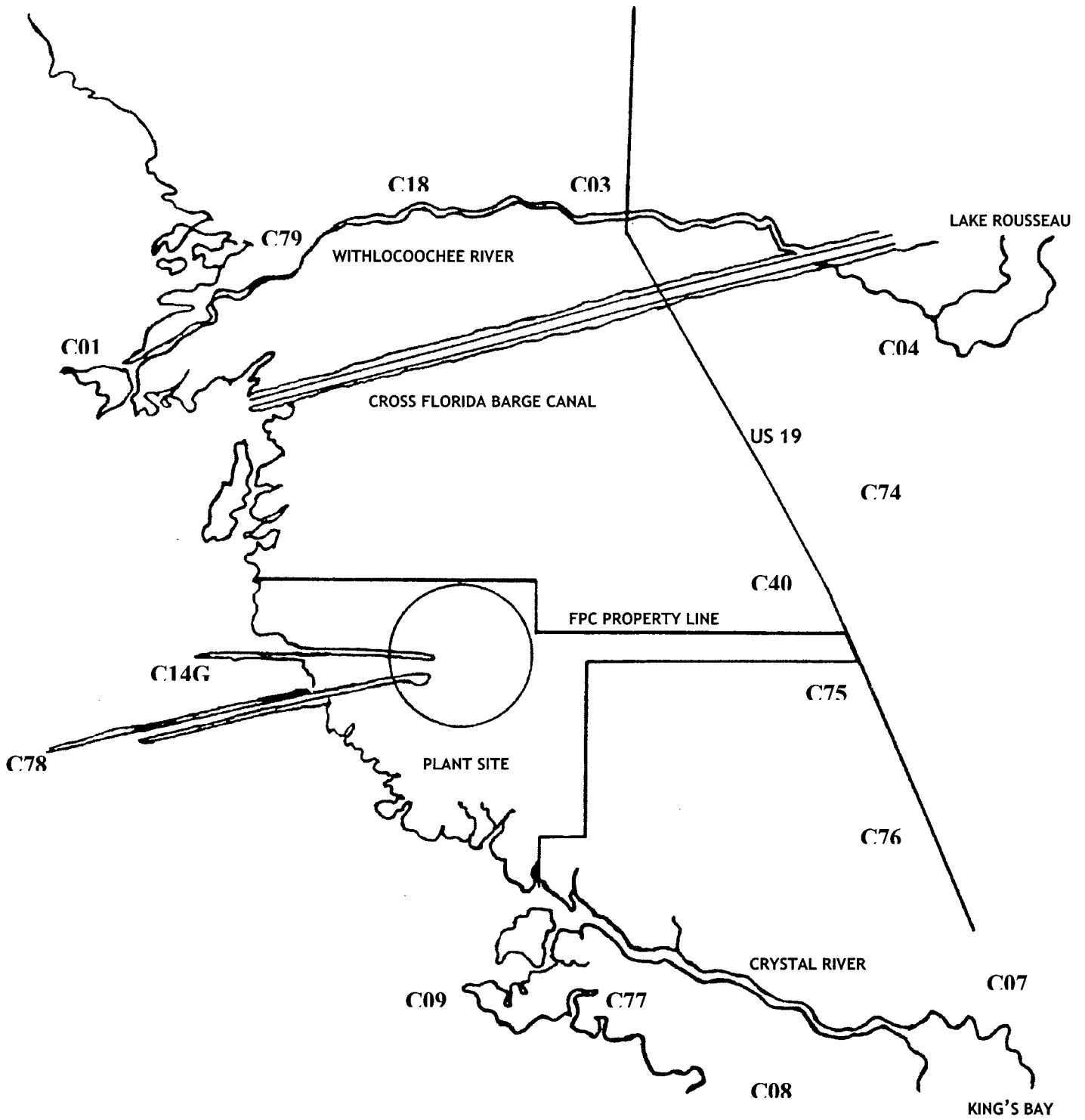
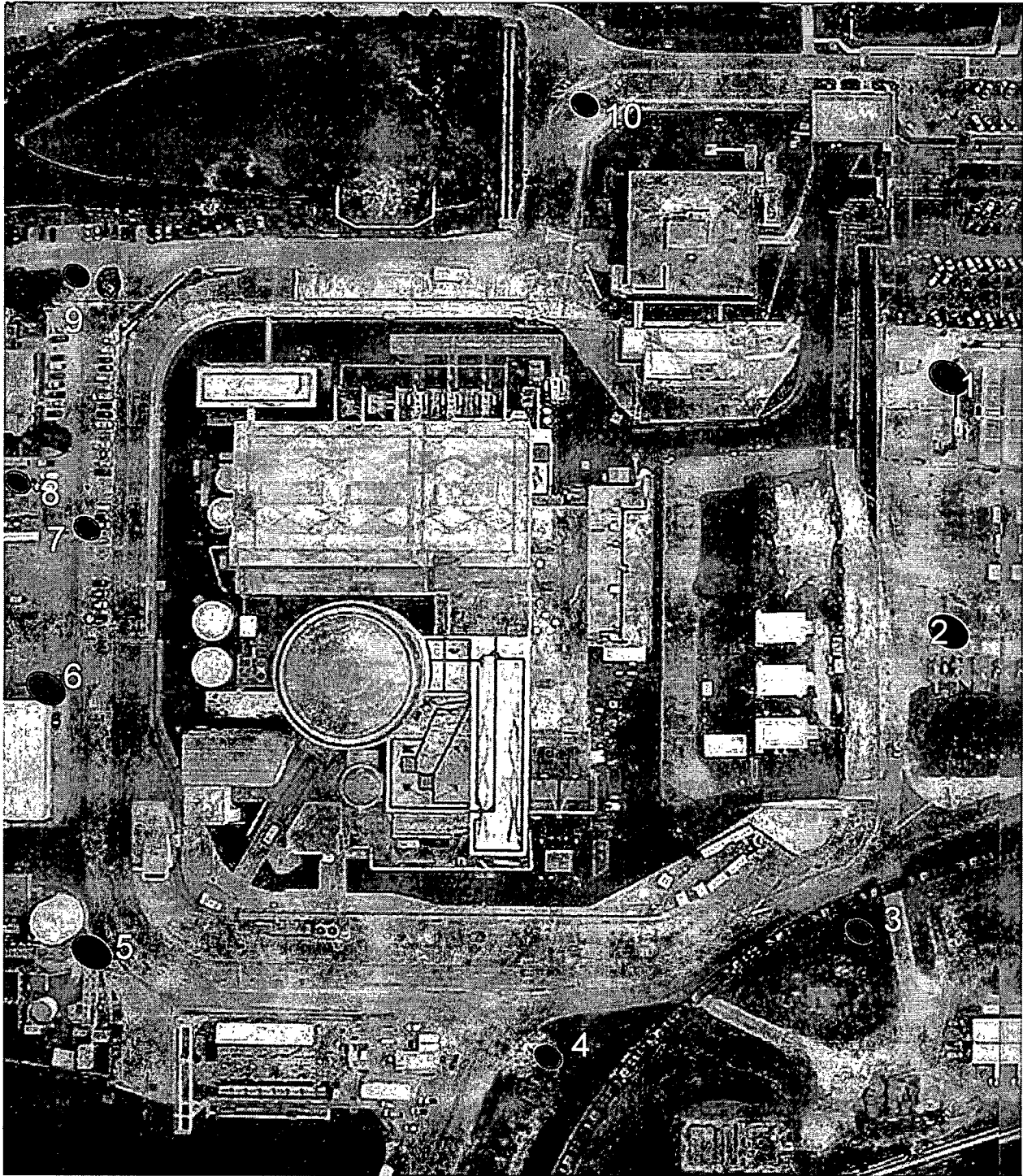


FIGURE I-4: Environmental Monitoring TLD Locations (off site)

CR3 Groundwater Monitoring Well Locations
Deep Wells Are Also Installed at #'s 1, 3, 6



Wells # 1 & 3 are not routinely
sampled by the REMP

II. LAND-USE CENSUS

A land-use census was conducted during June and July. The purpose of this census is to identify the nearest residences, vegetable gardens, and potential milk-producing animals within a five mile radius of the nuclear plant. The distance in miles and bearing in degrees for each receptor type in each of the sixteen sectors is summarized below.

SECTOR	NEAREST RESIDENCE	NEAREST GARDEN (A)	NEAREST MILK ANIMAL
N	4.46 @ 2°	4.77 @ 2°	*
NNE	3.95 @ 15°	*	*
NE	3.84 @ 54°	*	*
ENE	3.43 @ 60°	*	*
	3.4 @ 57°	*	*
E	2.40 @ 92°	4.80 @ 92°	*
ESE	4.24 @ 102°	5.0 @ 102°	*
SE	4.90 @ 133°	*	*
SSE	3.53 @ 149°	*	*
S	*	*	*
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	*	*	*
NW	4.77 @ 323°	*	*
	4.90 @ 321°	*	*
NNW	4.60 @ 339°	*	*

(A)- Only gardens with an estimated total area of 500 square feet, or more, and producing green leafy vegetables are considered.

* No suitable sites were located within 5 miles.

FLORIDA DEPARTMENT OF HEALTH - INTERLABORATORY COMPARISON PROGRAM DATA

The EPA crosscheck program ceased operation at the end of 1998. To meet the requirements for a crosscheck program, the Florida Department of Health participates in the Department of Energy's Mixed-Analyte Performance Evaluation Program (MAPEP). The following units are used for each of the four media:

Air Filters: Bq/sample
 Soil: Bq/Kg
 Vegetation: Bq/sample
 Water: Bq/L

Analytical performance is based on historical analytical capabilities for individual analyte/matrix pairs.

Acceptable performance is designated by an "A".

Acceptable with warning is designated by a "W".

Performance which is not acceptable is designated by an "N".

Results for January 2007:

Media	Nuclide	Result	% Bias	Acceptance Range	Flag
Air	Mn-54	4.17	18.5	2.46 – 4.57	A
Air	Co-60	3.11	7.0	2.04 – 3.78	A
Air	Cs-134	4.52	7.7	2.94 – 5.45	A
Air	Cs-137	2.95	14.8	1.80 – 3.34	A
Air	Zn-65	2.77	3.3	1.88 – 3.49	A
Air	Gross Beta	0.50	13.4	0.221 - 0.662	A
Soil	Mn-54	706.67	3.1	479.6 – 890.8	A
Soil	Co-60	269.67	-1.8	192.3 – 357.1	A
Soil	Cs-134	319.26	-2.5	229.2 – 425.6	A
Soil	Cs-137	808.67	1.1	559.8 – 1039.6	A
Soil	Zn-65	563.3	4.9	375.8 – 697.8	A
Vegetation	Mn-54	7.59	-10.2	5.91 – 10.98	A
Vegetation	Co-60	5.03	-13.6	4.07 – 7.57	A
Vegetation	Cs-134	5.63	-9.3	4.35 – 8.07	A
Vegetation	Cs-137	6.35	-9.2	4.90 – 9.09	A
Vegetation	Zn-65	6.05	6.2	3.99 – 7.41	A
Water	H-3	293.75	3.8	198.1 – 367.9	A
Water	Mn-54	133.17	7.6	86.7 – 160.9	A
Water	Co-60	28.41	5.6	18.8 – 35.0	A
Water	Cs-134	84.74	1.5	58.5 – 108.6	A
Water	Cs-137	170.7	4.7	114.1 – 211.9	A
Water	Zn-65	126.13	9.9	80.4 – 149.2	A

The second set of MAPEP samples (Series 18) that is normally supplied by the Radiological and Environmental Sciences Laboratory (RESL) was delayed due to a competitive sourcing study initiated by the DOE headquarters. This study, along with other factors has prevented shipment of this series of unknown samples. As of this typing, the set has still not been received by the DOH lab in Orlando. There are no criteria for the number of unknown samples to be tested. All sample media has been tested, which meets the intent of the program. This event is documented in the plant corrective action program (CAP) under Nuclear Condition Report (NCR) 275233.

IV-A. AIRBORNE PATHWAY

Air samples are taken at five locations in the vicinity of the plant. The control location is 78 miles ESE of the plant, at the Department of Health, State Bureau of Radiation Control in Orlando.

Table IV-A.1 provides a statistical summary of the analytical results for 317 gross beta samples and 311 iodine samples.

Tables IV-A.2 and IV-A.3 provide the results for each weekly air sample.

Three hundred seventeen particulate samples were analyzed for gross beta activity, all of which had measurable activity except 2 samples. The average indicator concentration was 17 pCi/1000 m³ with a range of 4 to 37 pCi/1000 m³. The average indicator concentration since 1996 was in the range of 15 to 19 pCi/1000 m³. The control location concentration for 2007 averaged 19 pCi/1000 m³, with a range of 4 to 34 pCi/1000 m³.

Three hundred eleven samples were analyzed for iodine activity, with none having measurable activity.

Quarterly composite data are summarized in Table IV-A.4. Measurable quantities of cesium were not identified, except in one sample at station C07 where cesium 137 was measured at 1.2 pCi/1000m³. The highest cesium LLD was 1.7 pCi/1000 m³ for cesium 134.

There was one non-collected sample for the year 2007 located at air sample station C07 due to the sampler was non-operational for one week and a partial week due to a loss of power to the station because of a circuit breaker panel failure. There was one instance of air sample station C46 being down for 45.7 hours due to a power failure. There were 6 instances of air sample station C40 being down for partial weeks due to problems associated with GFI circuits and damage to the power line from a fallen tree limb. The control air sample station C47 was down for several hours due to a power outage for scheduled electrical work. The remaining sample stations were in service 100% of the time, with exception of filter changes and air pump/gas meter replacements. The percentage of down times for the 4 stations are as follows:

C07	2.39%
C40	5.08%
C46	0.52%
C47	0.18%

The air sample station's down times are documented in the plant CAP under NCRs 236557, 237736, and 239122.

TABLE IV-A.1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME	MEAN RANGE		
AIRBORNE IODINE (pCi/m ³)	γ Spec 311 I-131	0.04	<LLD	-	-	<LLD	0
AIRBORNE PARTICULATES (pCi/1000m ³ for Gross β, pCi/1000m ³ for γ Spec)	Gross β 317 γ Spec 24	9.0	17 (315/317) (4-37)	C18 5.2 @ 0°	20 (57/57) (6-33)	19 (57/57) (4-34)	0
	Cs-134 Cs-137	1.7 1.6	<LLD 1.2 (1/24)	- C07 7.67@135°	- 1.2(1/24)	<LLD <LLD	0 0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-A.2

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/m³ IODINE - 131 IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
02-Jan-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
09-Jan-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
16-Jan-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23-Jan-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
30-Jan-07	<0.02	<0.02	<0.03	<0.03	<0.02	<0.02
06-Feb-07	<0.03	<0.03	<0.03	<0.02	<0.03	<0.03
12-Feb-07	<0.03	<0.03	<0.03	<0.04	<0.03	<0.03
20-Feb-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26-Feb-07	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
06-Mar-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
14-Mar-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
20-Mar-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27-Mar-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE IV-A.2 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/m³ IODINE - 131 IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
03-Apr-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
09-Apr-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
17-Apr-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25-Apr-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
02-May-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
08-May-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
16-May-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23-May-07	<0.01	<0.01	<0.03(A)	<0.01	<0.01	<0.01
30-May-07	<0.01	<0.01	<0.03(B)	<0.01	<0.01	<0.01
05-Jun-07	<0.02	<0.02	<0.02(C)	<0.02	<0.02	<0.02
12-Jun-07	<0.01	<0.01	<0.02(D)	<0.01	<0.01	<0.01
19-Jun-07	<0.02	<0.02	<0.04(E)	<0.02	<0.02	<0.02
26-Jun-07	<0.02(F)	<0.02	<0.01(G)	<0.02	<0.02	<0.02

(A) Power off due to tripped GFI. Run time estimated 66.7 out of 164.8 hours.

(B) Power off due to tripped GFI. New pump installed. Run time estimated 68 out of 167.6 hours.

(C) Power off due to tripped GFI. New GFI installed. Run time estimated 98 out of 142.75 hours.

(D) Power off due to tripped GFI. GFI use was removed from service. Run time estimated 151.3 out of 169.667 hours.

(E) Power on at time of collection but appeared to be off sometime during the week. Run time estimated 77.5 out of 169.7 hours.

(F) No power inside station due to inoperable breaker panel. Panel was replaced. Run time estimated 121.5 out of 162 hours.

(G) No power to station due to fallen tree limb on feeder line. Power was restored. Run time estimated 76 out of 167 hours.

TABLE IV-A.2 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/m³ IODINE - 131 IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
03-Jul-07	(A)	<0.02	<0.02	<0.02	<0.02	<0.02
10-Jul-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
16-Jul-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23-Jul-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
30-Jul-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
07-Aug-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
15-Aug-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
21-Aug-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
28-Aug-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
04-Sep-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11-Sep-07	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01
18-Sep-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26-Sep-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

(A) No power; no run time.

TABLE IV-A.2 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/m³ IODINE - 131 IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
02-Oct-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
10-Oct-07	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01
16-Oct-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23-Oct-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
30-Oct-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
06-Nov-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02(A)
13-Nov-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
19-Nov-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27-Nov-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
04-Dec-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
11-Dec-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
18-Dec-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
24-Dec-07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

(A) Power to building out due to scheduled electrical maintenance. Estimated run time 145.5 out of 161.25 hours.

TABLE IV-A.3

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/1000m³ GROSS B IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
02-Jan-07	13	15	12	17	13	7
09-Jan-07	15	13	15	14	10	5
16-Jan-07	9	10	9	10	9	7
23-Jan-07	13	15	14	15	15	15
30-Jan-07	16	24	20	21	14	21
06-Feb-07	21	18	25	18	23	21
12-Feb-07	32	33	30	25	21	25
20-Feb-07	25	21	19	21	15	20
26-Feb-07	17	16	20	12	11	14
06-Mar-07	21	22	19	19	15	21
14-Mar-07	18	20	17	17	23	16
20-Mar-07	21	20	15	7	16	34
27-Mar-07	15	19	16	17	15	17
Average:	18	19	18	16	15	17

TABLE IV-A.3 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/1000m³ GROSS β IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
03-Apr-07	20	23	20	17	17	17
09-Apr-07	21	19	20	19	20	17
17-Apr-07	13	22	19	21	20	14
25-Apr-07	25	12	18	16	23	18
02-May-07	19	19	26	20	20	19
08-May-07	25	21	16	24	27	21
16-May-07	17	13	14	15	14	18
23-May-07	19	23	15	19	20	21
30-May-07	26	23	19	21	17	19
05-Jun-07	23	22	30	28	27	27
12-Jun-07	17	18	15	15	16	20
19-Jun-07	19	18	31	16	14	13
26-Jun-07	17	18	<9	20	18	18
Average:	20	19	19	19	20	19

TABLE IV-A.3 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/1000m³ GROSS β IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
03-Jul-07	(A)	10	9	15	12	13
10-Jul-07	12	11	10	17	11	9
16-Jul-07	12	9	10	17	12	14
23-Jul-07	12	12	13	12	15	14
30-Jul-07	6	13	11	10	8	13
07-Aug-07	14	17	10	13	14	12
15-Aug-07	21	22	20	29	22	22
21-Aug-07	18	22	22	17	19	16
28-Aug-07	10	13	11	12	14	14
04-Sep-07	15	12	14	15	11	16
11-Sep-07	17	16	14	10	16	18
18-Sep-07	11	11	13	12	12	11
26-Sep-07	10	6	9	4	14	11
Average:	13	14	13	14	14	14

(A) No power, no run time.

TABLE IV-A.3 (Cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/1000m³ GROSS β IN AIR

Collection Date	SAMPLE SITE					
	C07	C18	C40	C41	C46	C47
02-Oct-07	8	14	9	8	16	5
10-Oct-07	9	8	8	4	12	4
16-Oct-07	25	18	20	15	23	23
23-Oct-07	17	21	17	12	19	10
30-Oct-07	18	15	16	18	14	12
06-Nov-07	20	24	10	28	30	29
13-Nov-07	29	31	37	25	33	11
19-Nov-07	26	31	23	27	26	26
27-Nov-07	18	25	25	22	10	14
04-Dec-07	23	31	18	18	24	20
11-Dec-07	22	16	26	27	31	31
18-Dec-07	7	17	10	15	19	10
24-Dec-07	13	15	14	15	18	10
31-Dec-07	8	20	9	3	<6	5
Average:	17	20	17	17	20	15

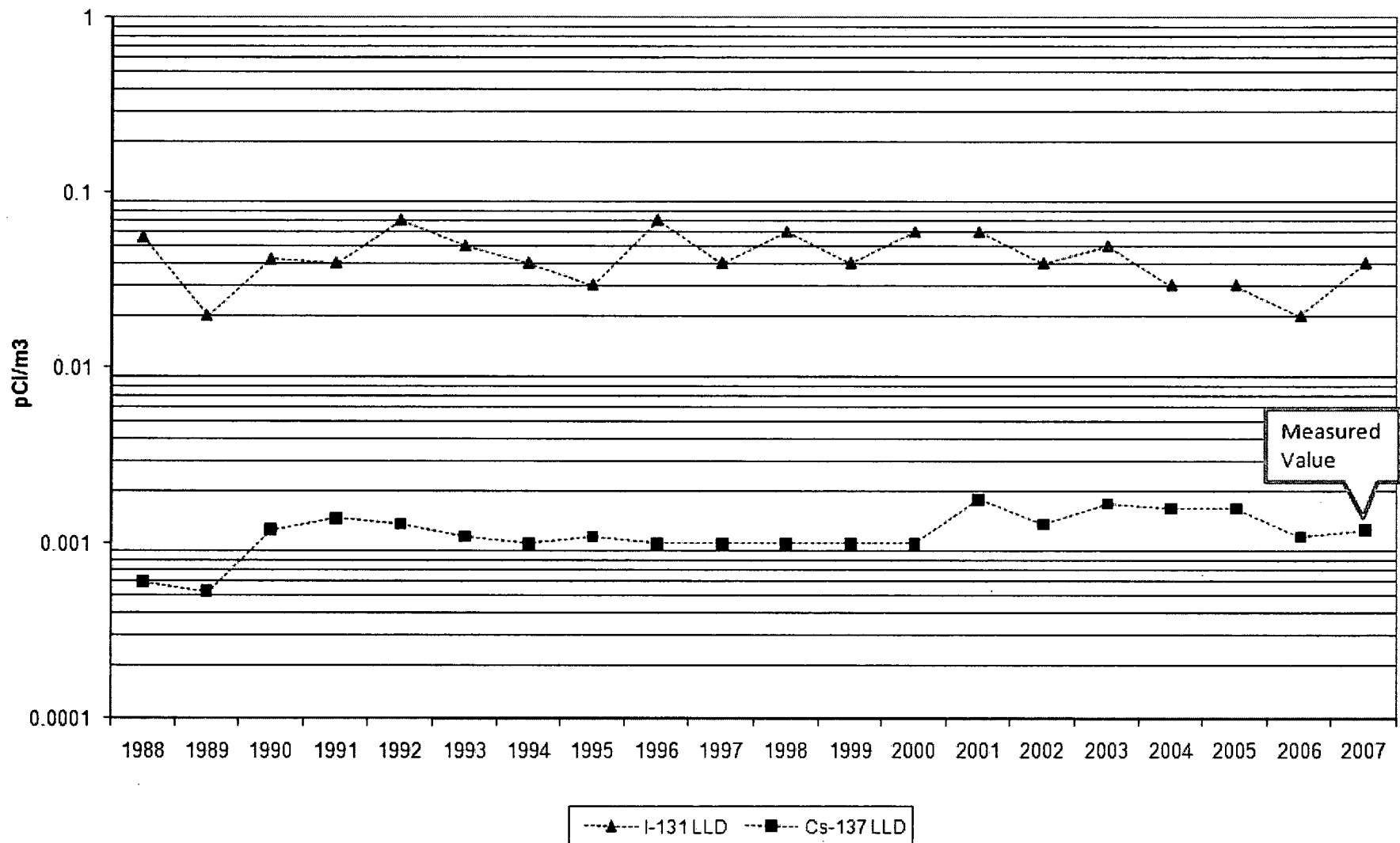
TABLE IV-A.4

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/1000m³ γ EMITTERS IN QUARTERLY COMPOSITES OF AIR PARTICULATES

STATION	NUCLIDE	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
C07	Be-7	197	218	152	176
	K-40	<21	<11	<18	<23
	Cs-134	<1.5	<0.7	<1.3	<1.8
	Cs-137	1.2	<0.5	<1.0	<1.6
C18	Be-7	189	228	130	195
	K-40	<6.0	<20	<18	<16
	Cs-134	<0.4	<1.4	<1.0	<1.1
	Cs-137	<0.3	<0.7	<1.0	<0.9
C40	Be-7	190	209	136	178
	K-40	<8.0	<10	<28	<27
	Cs-134	<0.6	<0.7	<1.2	<1.5
	Cs-137	<0.4	<0.5	<1.1	<1.1
C41	Be-7	212	229	104	166
	K-40	<16	<20	<24	<25
	Cs-134	<1.7	<1.1	<1.5	<1.6
	CS-137	<0.9	<1.2	<1.6	<1.3
C46	Be-7	183	233	131	173
	K-40	<18	<22	<16	<19
	Cs-134	<1.4	<1.1	<1.3	<1.1
	Cs-137	<0.9	<1.1	<1.1	<0.9
C47	Be-7	182	215	146	152
	K-40	<17	<19	<19	<17
	Cs-134	<1.4	<1.1	<1.4	<0.9
	Cs-137	<1.1	<1.1	<0.7	<0.7

Airborne (highest values plotted)



IV-B. DIRECT RADIATION

Direct radiation measurements (using TLDs) were taken at seventeen locations (stations C60 through C73 and station C27) within one mile of the plant, at fifteen locations ranging from 2.8 to 6.3 miles from the plant, and at one control location 78 miles from the site. One-hundred and thirty-one TLDs were collected during 2007.

Table IV-B provides a statistical summary of the analytical results for 131 TLDs sampled throughout the year.

Table IV-B.1 provides the results of the individual TLD measurements.

The highest on-site dose was 107 mrem/yr at station C71 (WNW at 3600 feet). Station C71 was relocated in 1992 due to construction of the helper cooling towers on the former site. The new location has a higher background radiation level due to being closer to the storage pond for Units 4 & 5 fly ash, which produces a higher external radiation component than normal levels of natural background. The second highest on-site dose was 66 mrem/yr at station C65 (ESE at 1740 feet).

The highest off-site dose was 61 mrem/yr at station C40 (east at 3.5 miles). The control station (C47) dose was 50 mrem/yr. The average for all stations (except control) was 54 mrem/yr for 2007, 53 mrem/yr for 2006, and 54 mrem/yr for 2005. Direct radiation results are similar to previous years and show no change of significance.

There was one instance of a lost TLD at station C77 when the power pole it was mounted to was replaced with a concrete pole during the fourth quarter of 2007. This event is documented in the plant CAP under NCR 254925.

TABLE IV-B

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD)	<u>ALL INDICATOR LOCATIONS</u>	<u>LOCATION WITH HIGHEST MEAN</u>		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME DISTANCE & BEARING	MEAN RANGE		
DIRECT RADIATION (mrem/yr)	γ DOSE 131	15	54 (127/127) (34 - 116)	C71 0.6 @ 296°	107 (4/4) (101 - 116)	50 (4/4) (45 - 55)	0

TABLE IV-B.1

PROGRESS ENERGY FLORIDA, INC. - CR-3 - 2007

mrem/yr γ Dose

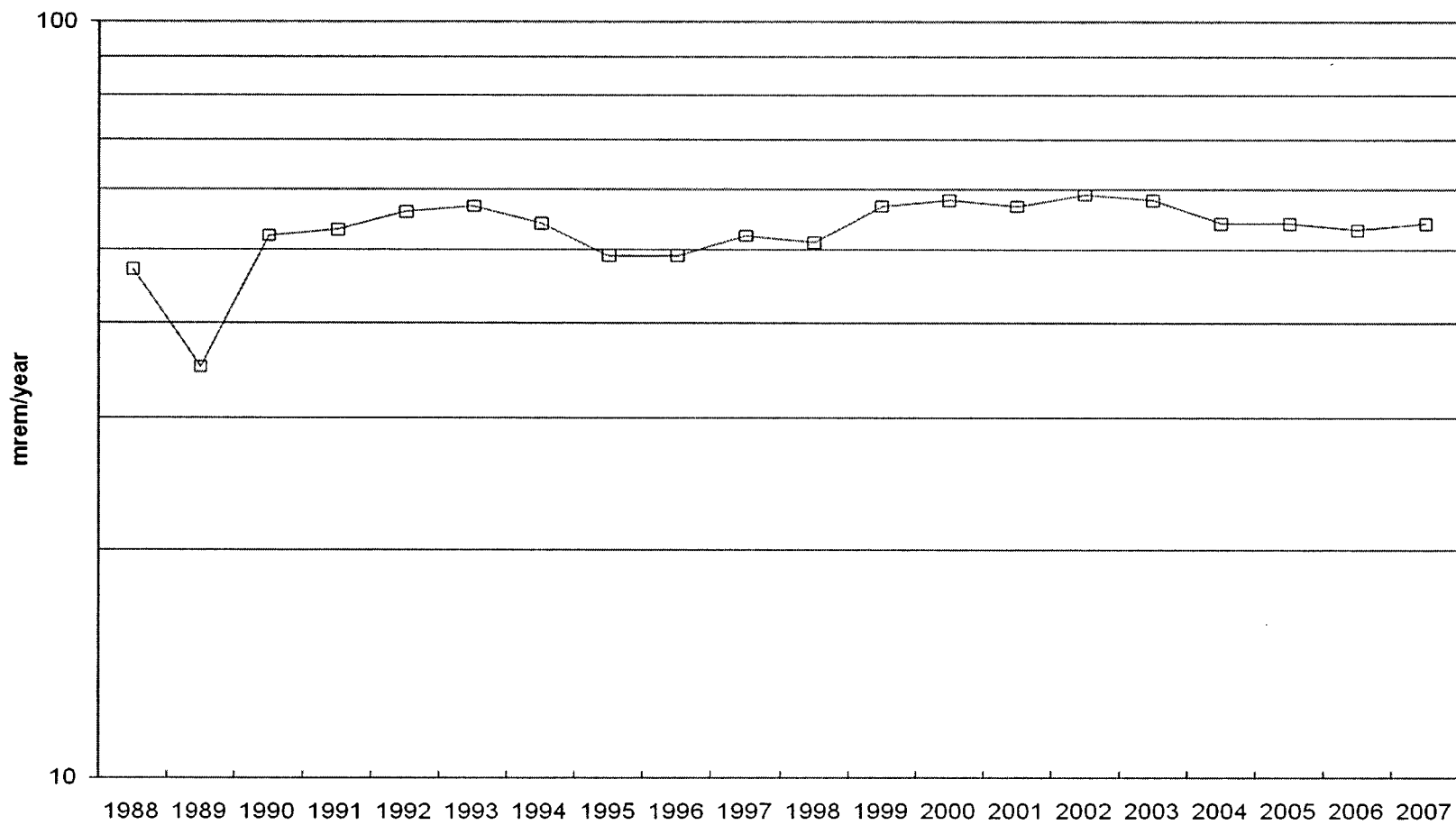
TLD STATION	Quarter	1	2	3	4
CO1		41	41	41	44
CO3		42	39	41	44
CO4		41	41	41	47
CO7*		39	42	42	45
CO8		38	40	40	46
C09		41	43	41	45
C14G		51	54	51	55
C18		46	47	43	51
C27		65	65	62	68
C40*		58	60	62	64
C41		54	55	53	58
C46*		52	55	52	58
C47 (CONTROL)		45	48	52	55
C60		52	58	54	60
C61		54	57	57	63
C62		63	60	61	67
C63		58	62	59	66
C64		55	51	54	60
C65		60	67	66	72
C66		55	56	57	63
C67		52	54	52	61
C68		55	59	58	65
C69		58	63	63	70
C70		55	61	58	68
C71		104	107	101	116
C72		61	59	59	52
C73		49	53	54	61
C74		40	39	40	48
C75		47	53	53	57
C76		47	47	47	51
C77		34	37	37	N/A ₁
C78		39	44	44	49
C79		46	50	50	51

*TLDs not required by the ODCM.

Quarterly values are multiplied by 4 to obtain an equivalent yearly dose.

1 = TLD was lost when utility pole was replaced.

Direct Radiation



—□— TLD Average of All Stations

IV-C. WATERBORNE PATHWAY

To evaluate the waterborne pathway, samples are taken of seawater, ground water, drinking water, and shoreline sediment.

1. Monthly seawater grab samples are taken at two locations in the discharge canal (C14G and C14H) and at one control location (C13) near the mouth of the intake canal. Of twenty-four indicator samples, thirteen had measurable tritium at an average concentration of 282 pCi/L as compared to two measurable samples containing tritium with an average of 445 pCi/L in 2006. The sample with the highest concentration of tritium, 914 pCi/L, was obtained in April at station C14G near the mouth of the discharge canal. The seawater tritium activity is consistent with the concentration of tritium in the liquid waste stream and the release times of waste tanks. Four control station samples contained tritium at an average concentration of 194 pCi/L. The 2006 control station results averaged 272 pCi/L.

Gamma spectral analysis was performed on thirty-six samples, none of which showed measurable amounts of the gamma emitters of interest.

Table IV-C.1 provides a statistical summary of the seawater tritium and gamma spectroscopy results.

Table IV-C.1.a provides the results of the monthly samples.

2. Semiannual ground water samples are taken at one location, station C40, located approximately 3.5 miles east of CR-3. Gamma spectral and tritium analyses are performed on both samples. All results were less than the detection limits. Since plant startup, all results, except for the results of one 1985 tritium analysis, have been less than LLD. The required sensitivity for measuring tritium in ground water is 2000 pCi/L. Analysis of ground water in the vicinity of CR-3 is done at a sensitivity of approximately 150 pCi/L for tritium and less than 10 pCi/L for select gamma emitters.

Table IV-C.2 provides a statistical summary of the groundwater tritium and gamma spectroscopy results.

Table IV-C.2.a provides the results of the semi-annual samples.

3. Quarterly site ground water samples are taken at nine locations surrounding the perimeter of the CR-3 protected area. Presently 5 of these ground water wells have shown indications of very low levels of tritium on the west-southwest side of the plant. It is believed that this tritium is the result of a leak in the Station Drain Tank (SDT-1) to the settling pond discharge line that occurred many years ago. This discharge line has recently been leak tested and is leak free. There are no other known leaking plant components. The five wells that have shown measurable amounts of tritium range from 69 to 808 pCi/L. These wells have been sampled additionally on a monthly basis to develop trend data. This information is shown as supplemental data. Along with these wells, two other wells that are not presently part of the REMP have been sampled that are on either side of the plant settling ponds (percolation ponds). These two wells are showing measurable amounts of tritium in the range of 244 to 1199 pCi/L, which are a result of plant discharges from the SDT-1. These discharges are being minimized through operational focus. The tritium values are below the reporting criteria of the ODCM or the NEI 07-07 Ground Water Protection Initiative Guidelines. There have been no measurable amounts of gamma emitting radionuclides in any of these wells. This information is documented in NCR 228274. It should be noted that site ground water flows in a west-southwest direction toward the Gulf of Mexico. This flow was re-verified in 2006 with a new ground water flow study performed by a hydro-geologist as part of the NEI Ground Water Protection Initiative. Additionally, the ground water at the CR-3 site is too saline for use as a potable water source.

Table IV-C.2.b provides a statistical summary of the groundwater tritium and gamma spectroscopy results.

Table IV-C.2.b.1 provides the results of the quarterly samples.

Table IV-C.2.b.2 provides the results of the monthly supplemental samples.

4. Monthly non-REMP required well samples were collected as discussed above. Four wells were sampled. Two of these wells are located on either side of the site percolation ponds. The information is discussed above. Two other wells located north of the Units 1, 2, & 3 discharge canal and south of the Units 1, 2, & 3 intake canal were also sampled for tritium and gamma emitters. Both of these wells showed no measurable amounts of any radionuclide of interest.

Table IV-C.2.c provides a statistical summary of the groundwater tritium and gamma spectroscopy results.

Table IV-C.2.c.1 provides the results of the monthly supplemental non-REMP required samples.

5. Quarterly drinking water samples are drawn from three locations: the Crystal River City Hall (C07), the Days Inn Motel (C10), and the Yankeetown City Well (C18). All samples were collected and analyzed for gamma emitters and tritium. None of the samples yielded measurable activities of tritium or the required gamma emitters. The measurement sensitivity for drinking water samples are the same as those for ground water samples.

Table IV-C.3 provides a statistical summary of the drinking water tritium and gamma spectroscopy results.

Table IV-C.3.a provides the results of the quarterly samples.

6. Semiannual shoreline sediment samples are taken at three indicator locations in the discharge canal (C14H, C14M, C14G) and one control location (C09) at Fort Island Gulf Beach. The plant discharge canal is the primary liquid effluent release pathway from CR-3. Of the six indicator samples, three had measurable amounts of cesium-137 and two had measurable amounts of cobalt-60. The average cobalt-60 concentration at the indicator locations was 41 pCi/L. The average cobalt-60 concentration in 2006 was 230pCi/L. The average cobalt-60 concentration at the indicator locations ranged from 30 to 389 pCi/L from 1998 through 2006. The average cesium-137 concentration at the indicator locations was 23 pCi/L. The average cesium-137 concentration in 2006 was 55 pCi/L. These results are similar to previous years' results. None of the samples taken at Fort Island Gulf Beach, the control location station C09, indicated measurable amounts of cobalt or cesium.

Table IV-C.4 provides a statistical summary of the shoreline sediment gamma spectroscopy results.

Table IV-C.4.a provides the results of the semi-annual samples.

7. There were no unmonitored spills or releases of radioactive material in 2007 that could have the potential to contaminate the ground water per the guidelines of the Nuclear Energy Institute Ground Water Protection Initiative – Final Guidance Document 07-07. As such, there were no communiqués issued to state, local, or regulatory agencies.

TABLE IV-C.1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	<u>ALL INDICATOR LOCATIONS</u>	<u>LOCATION WITH HIGHEST MEAN</u>		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME DISTANCE & BEARING	MEAN RANGE		
SEAWATER (pCi/L)	Tritium 36	167	282 (13/24) (76-914)	C14G 2.5 @ 270°	383 (8/12) (84-914)	194 (4/12) (89-310)	0
	γ Spec 36						
	Mn-54	6	<LLD	-	-	<LLD	0
	Fe-59	13	<LLD	-	-	<LLD	0
	Co-58	6	<LLD	-	-	<LLD	0
	Co-60	7	<LLD	-	-	<LLD	0
	Zn-65	12	<LLD	-	-	<LLD	0
	Zr-Nb-95	10	<LLD	-	-	<LLD	0
	I-131	8	<LLD	-	-	<LLD	0
	Cs-134	7	<LLD	-	-	<LLD	0
	Cs-137	6	<LLD	-	-	<LLD	0
	Ba-La-140	15	<LLD	-	-	<LLD	0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-C.1.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN SEAWATER

STATION	MONTH	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C13	JAN	131±21	213±32	<4	<4	<7	<5	<9	<6	<4	<5	<4	<8
	FEB	<147	277±32	<3	<3	<7	<4	<9	<7	<5	<4	<4	<6
	MAR	89±20	228±34	<3	<4	<7	<4	<8	<7	<4	<4	<4	<13
	APR	<143	231±25	<2	<2	<4	<2	<4	<4	<2	<2	<2	<4
	MAY	<147	231±41	<5	<4	<11	<5	<12	<8	<6	<6	<5	<7
	JUN	<136	325±35	<4	<4	<7	<4	<8	<6	<4	<4	<4	<7
	JUL	<167	200±50	<5	<6	<11	<7	<9	<8	<8	<6	<5	<9
	AUG	247±48	255±40	<4	<4	<8	<5	<9	<8	<4	<5	<4	<8
	SEP	<130	238±42	<4	<4	<8	<4	<10	<8	<4	<5	<4	<15
	OCT	310±48	350±33	<3	<3	<8	<3	<7	<7	<6	<4	<5	<5
	NOV	<146	370±31	<3	<3	<8	<5	<7	<4	<4	<4	<4	<6
	DEC	<143	297±47	<4	<4	<7	<5	<8	<7	<4	<5	<4	<10
C14G	JAN	137±28	229±29	<2	<2	<5	<3	<5	<4	<2	<3	<2	<7
	FEB	<147	229±27	<3	<3	<7	<4	<7	<5	<4	<4	<4	<4
	MAR	<143	228±26	<3	<4	<8	<4	<8	<6	<3	<5	<3	<12
	APR	914±36	231±35	<4	<5	<8	<4	<8	<7	<5	<5	<4	<6
	MAY	491±31	221±45	<4	<5	<10	<5	<9	<7	<7	<5	<4	<9
	JUN	<136	309±44	<5	<5	<11	<5	<12	<10	<4	<6	<5	<9
	JUL	112±21	306±46	<4	<5	<13	<6	<11	<9	<8	<4	<6	<7
	AUG	792±59	220±37	<3	<3	<7	<4	<8	<6	<4	<4	<4	<7
	SEP	84±24	285±31	<3	<4	<7	<4	<9	<7	<4	<5	<4	<12
	OCT	358±49	354±47	<4	<5	<11	<5	<12	<7	<6	<6	<5	<9
	NOV	175±28	339±43	<6	<5	<11	<7	<13	<8	<5	<7	<6	<9
	DEC	<143	247±35	<2	<2	<5	<3	<5	<4	<3	<3	<2	<5

TABLE IV-C.1a (CONT'D)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN SEAWATER

STATION	MONTH	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C14H	JAN	103±27	264±25	<3	<3	<5	<3	<6	<5	<4	<3	<3	<5
	FEB	<147	265±29	<3	<4	<6	<3	<9	<7	<5	<4	<4	<6
	MAR	<143	285±28	<3	<3	<6	<3	<8	<6	<4	<4	<3	<13
	APR	155±27	187±31	<4	<3	<7	<4	<8	<6	<5	<4	<4	<8
	MAY	<147	306±31	<4	<4	<8	<4	<9	<6	<5	<3	<4	<5
	JUN	<136	297±30	<3	<3	<7	<4	<7	<6	<5	<5	<3	<8
	JUL	<167	266±28	<4	<3	<8	<5	<6	<7	<6	<4	<4	<6
	AUG	124±26	318±24	<3	<3	<5	<3	<5	<4	<3	<3	<3	<5
	SEP	76±24	329±30	<4	<3	<9	<4	<8	<6	<3	<4	<4	<10
	OCT	147±44	309±35	<3	<4	<8	<4	<8	<4	<4	<5	<4	<4
	NOV	<146	390±31	<4	<3	<6	<4	<9	<6	<5	<4	<4	<7
	DEC	<143	333±24	<3	<2	<5	<3	<6	<5	<3	<4	<3	<5

Seawater

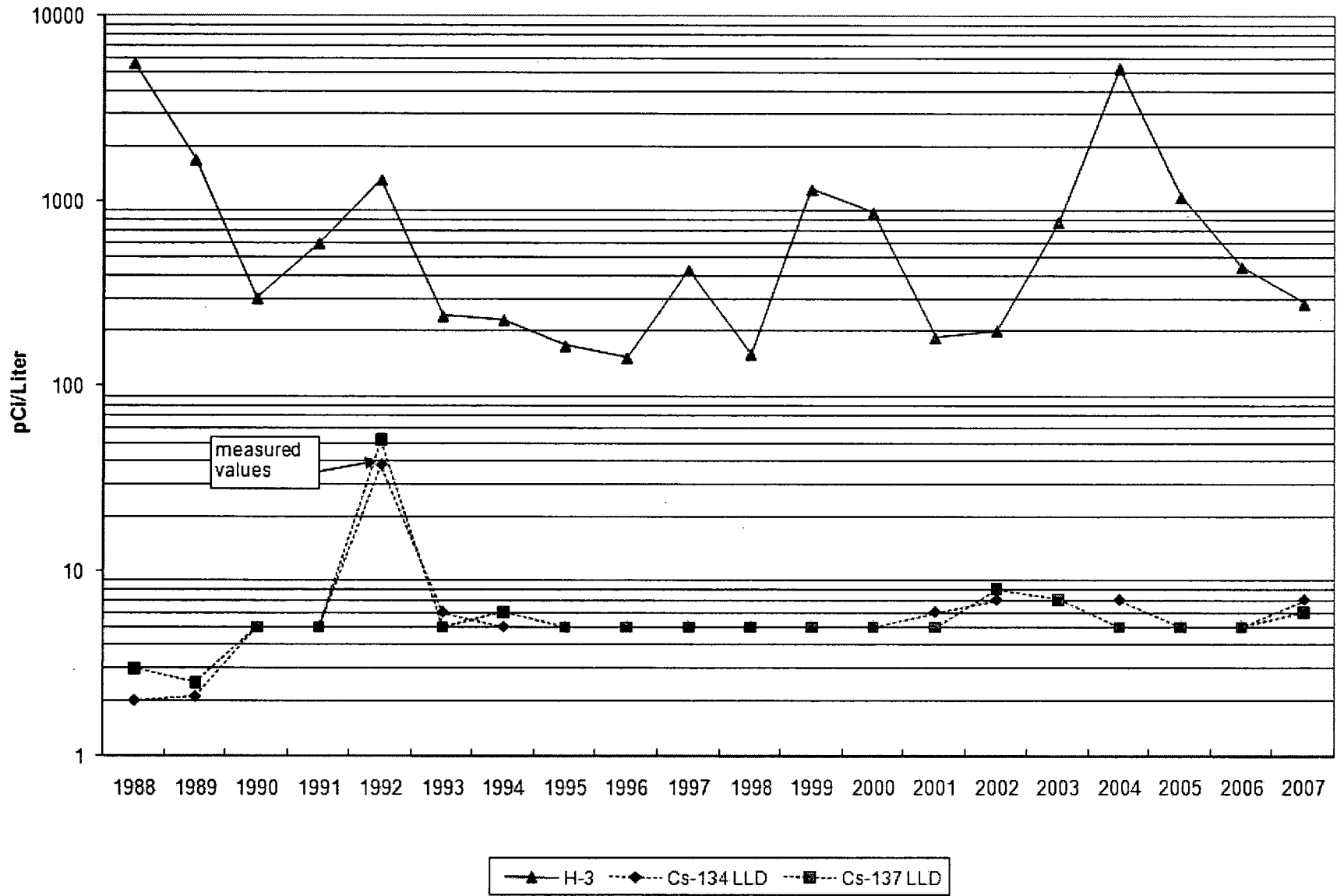


TABLE IV-C.2

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS MEAN RANGE	LOCATION WITH HIGHEST MEAN NAME DISTANCE & BEARING	MEAN RANGE	CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
GROUND WATER (pCi/L)	Tritium 2	147	None	-	-	<LLD	0
	γ Spec 2						
	Mn-54	4	None	-	-	<LLD	0
	Fe-59	10	None	-	-	<LLD	0
	Co-58	3	None	-	-	<LLD	0
	Co-60	5	None	-	-	<LLD	0
	Zn-65	11	None	-	-	<LLD	0
	Zr-Nb-95	10	None	-	-	<LLD	0
	I-131	7	None	-	-	<LLD	0
	Cs-134	5	None	-	-	<LLD	0
	Cs-137	4	None	-	-	<LLD	0
	Ba-La-140	9	None	-	-	<LLD	0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-C.2.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN GROUND WATER

STATION	NUCLIDE	FIRST HALF	SECOND HALF
C40	H-3	<147	<139
	Mn-54	<4	<2
	Fe-59	<10	<4
	Co-58	<3	<2
	Co-60	<5	<2
	Zn-65	<11	<4
	Zr-Nb-95	<10	<4
	I-131	<7	<2
	Cs-134	<5	<2
	Cs-137	<4	<2
	Ba-La-140	<9	<4
	K-40	<68	<30

Ground Water

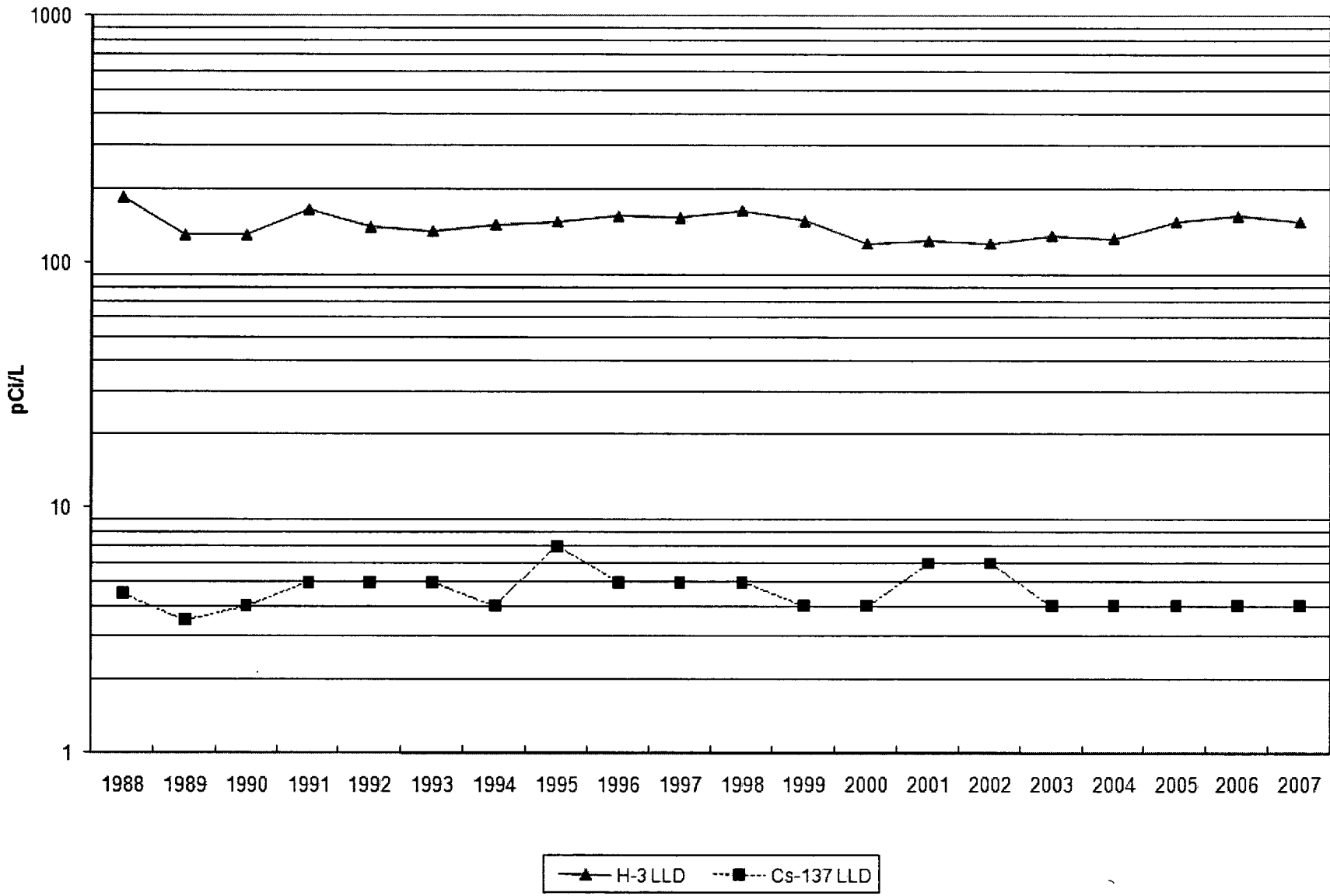


TABLE IV-C.2.b

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS		LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE		NAME DISTANCE & BEARING	MEAN RANGE		
CR3 SITE GROUND WATER (pCi/L)	Tritium 56	167	343(34/56) (69-808)		C3-5 0.051 mi.@225°	517(9/10) (314-808)	<LLD	0
	γ Spec 56							
	Mn-54	6	None		-	-	<LLD	0
	Fe-59	14	None		-	-	<LLD	0
	Co-58	7	None		-	-	<LLD	0
	Co-60	7	None		-	-	<LLD	0
	Zn-65	15	None		-	-	<LLD	0
	Zr-Nb-95	12	None		-	-	<LLD	0
	I-131	10	None		-	-	<LLD	0
	Cs-134	8	None		-	-	<LLD	0
	Cs-137	7	None		-	-	<LLD	0
Ba-La-140	15	None		-	-	<LLD	0	

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-C.2.b.1

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C3-2	02-27	<143	<77	<5	<5	<12	<6	<10	<8	<6	<6	<6	<11
	04-04	<143	<65	<5	<4	<10	<5	<9	<8	<6	<4	<5	<8
	07-03	<167	<79	<6	<5	<9	<7	<13	<11	<8	<8	<5	<13
	10-03	<134	<77	<5	<5	<10	<5	<12	<8	<8	<6	<6	<10
C3-4	02-27	<143	<70	<4	<4	<9	<5	<9	<7	<6	<5	<4	<9
	04-04	<143	<34	<2	<2	<4	<2	<4	<4	<3	<2	<2	<3
	07-03	<167	<68	<6	<5	<11	<6	<12	<11	<10	<6	<6	<10
	10-03	79±25	<59	<3	<3	<6	<3	<8	<5	<5	<4	<4	<5
C3-5	02-27	445±30	<77	<3	<4	<7	<4	<8	<7	<5	<4	<4	<8
	04-04	626±57	<94	<5	<5	<11	<7	<8	<9	<8	<7	<5	<7
	07-03	617±65	<68	<4	<3	<8	<4	<8	<6	<7	<4	<4	<6
	10-03	582±54	61±22	<3	<4	<8	<3	<8	<7	<6	<4	<4	<6

TABLE IV-C.2.b.1(cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C3-6S	02-27	<143	<65	<5	<4	<9	<5	<10	<8	<6	<5	<5	<11
	04-04	<143	27±9	<2	<2	<3	<2	<4	<3	<3	<2	<2	<3
	07-03	<167	<53	<3	<3	<7	<3	<8	<6	<7	<3	<4	<5
	10-03	103±25	<78	<5	<5	<12	<5	<11	<9	<8	<6	<4	<8
C3-6D	02-27	<143	177±31	<4	<4	<9	<5	<9	<8	<5	<5	<4	<9
	04-04	<143	180± 22	<3	<3	<7	<4	<8	<6	<4	<3	<3	<6
	07-03	69±21	165± 42	<6	<5	<13	<6	<11	<9	<10	<8	<6	<10
	10-03	<134	174± 43	<4	<5	<12	<6	<10	<8	<6	<6	<6	<9
C3-7	02-27	807±34	77	<4	<4	<9	<4	<7	<7	<5	<5	<4	<8
	04-04	582±56	60	<3	<3	<7	<4	<8	<6	<6	<5	<4	<6
	07-03	239±57	39±12	<2	<2	<5	<2	<4	<4	<4	<3	<2	<3
	10-03	347±49	80	<4	<5	<11	<6	<11	<10	<8	<7	<5	<12

TABLE IV-C.2.b.1(cont'd)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C3-8	02-27	111±26	<75	<4	<4	<8	<5	<8	<8	<5	<6	<3	<11
	04-04	132±47	<72	<4	<4	<6	<5	<7	<7	<6	<5	<4	<6
	07-03	220±56	<69	<3	<4	<8	<3	<9	<6	<7	<4	<4	<7
	10-03	141±44	<86	<5	<5	<13	<5	<8	<9	<8	<6	<6	<6
C3-9	02-27	<143	<72	<4	<4	<8	<4	<8	<7	<5	<5	<5	<8
	04-04	<143	<89	<5	<5	<13	<6	<12	<10	<8	<7	<6	<7
	07-03	<167	<63	<4	<4	<7	<4	<8	<6	<6	<4	<3	<5
	10-03	70±25	<94	<6	<5	<10	<5	<11	<8	<6	<6	<5	<8
C3-10	02-27	<143	<28	<2	<2	<4	<2	<4	<3	<3	<2	<2	<4
	04-04	<143	156±26	<5	<6	<11	<7	<13	<10	<7	<8	<5	<11
	07-03	<167	<74	<5	<5	<11	<6	<9	<11	<9	<8	<5	<10
	10-03	<134	<94	<4	<5	<10	<5	<12	<11	<9	<6	<5	<8

TABLE IV-C.2.b.2

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER (SUPPLEMENTAL DATA)

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C3-5	05-04	808±62	<61	<3	<3	<5	<4	<9	<7	<5	<4	<4	<7
	06-01	364±50	<54	<3	<3	<6	<3	<7	<5	<4	<4	<3	<5
	08-07	285±49	<30	<2	<2	<4	<2	<4	<3	<2	<2	<2	<5
	09-04	314±48	<70	<4	<4	<6	<4	<8	<6	<5	<4	<3	<10
	11-06	<146	<55	<4	<4	<6	<4	<9	<7	<4	<5	<4	<9
	12-06	617±58	<64	<3	<4	<7	<4	<8	<7	<6	<5	<4	<7
C3-6S	05-04	<147	<75	<5	<5	<10	<4	<10	<8	<6	<6	<5	<7
	06-01	<136	<62	<4	<4	<7	<4	<8	<6	<5	<4	<3	<8
	08-07	<139	<53	<3	<4	<7	<3	<9	<7	<4	<3	<4	<14
	09-04	<133	<41	<2	<2	<5	<3	<5	<4	<3	<3	<3	<9
	11-06	<146	<59	<4	<3	<8	<4	<7	<6	<4	<4	<4	<11
	12-06	<143	<84	<6	<3	<14	<6	<11	<7	<7	<7	<6	<9
C3-7	05-04	603±58	<62	<4	<4	<7	<4	<9	<6	<5	<4	<4	<6
	06-01	596±55	<23	<1	<1	<3	<1	<3	<2	<2	<1	<1	<2
	08-07	287±49	35±15	<4	<4	<5	<3	<8	<6	<4	<4	<4	<8
	09-04	600±54	<65	<5	<4	<7	<5	<12	<9	<6	<7	<5	<13
	11-06	698±60	<82	<3	<5	<10	<5	<10	<8	<5	<6	<5	<13
	12-06	283±51	<97	<5	<4	<11	<7	<11	<9	<8	<8	<6	<8

TABLE IV-C.2.b.2(cont'd)

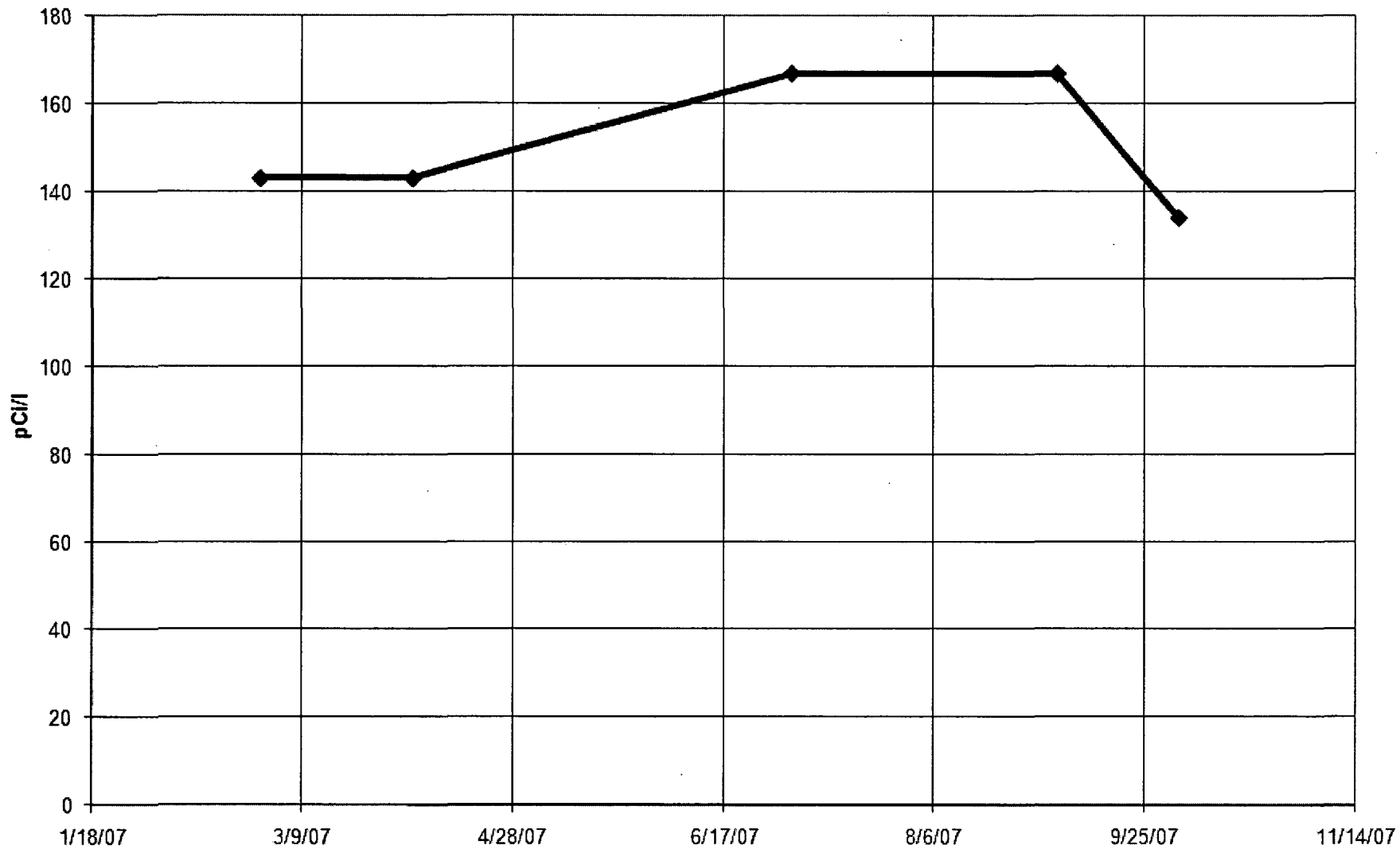
PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER (SUPPLEMENTAL DATA)

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C3-8	05-04	126±48	<92	<4	<5	<9	<5	<11	<8	<7	<6	<4	<7
	06-01	121±44	<57	<3	<4	<7	<4	<8	<6	<5	<4	<3	<6
	08-07	198±47	<44	<3	<3	<5	<3	<6	<4	<3	<3	<3	<9
	09-04	213±46	<71	<4	<4	<8	<4	<7	<6	<5	<5	<4	<9
	11-06	165±49	<42	<2	<2	<4	<2	<5	<4	<3	<3	<2	<6
	12-06	112±46	85±17	<3	<3	<5	<3	<7	<7	<5	<4	<4	<5
C3-9	05-04	<147	<78	<4	<4	<9	<3	<9	<9	<7	<6	<4	<5
	06-01	<136	<36	<2	<2	<4	<2	<4	<3	<2	<2	<2	<3
	08-07	<139	<69	<3	<3	<7	<4	<7	<6	<5	<5	<4	<15
	09-04	106±43	<91	<5	<5	<9	<6	<8	<8	<5	<5	<5	<10
	11-06	<146	<69	<4	<3	<8	<3	<7	<7	<4	<3	<4	<7
	12-06	<143	<98	<6	<7	<12	<7	<15	<12	<10	<6	<7	<12

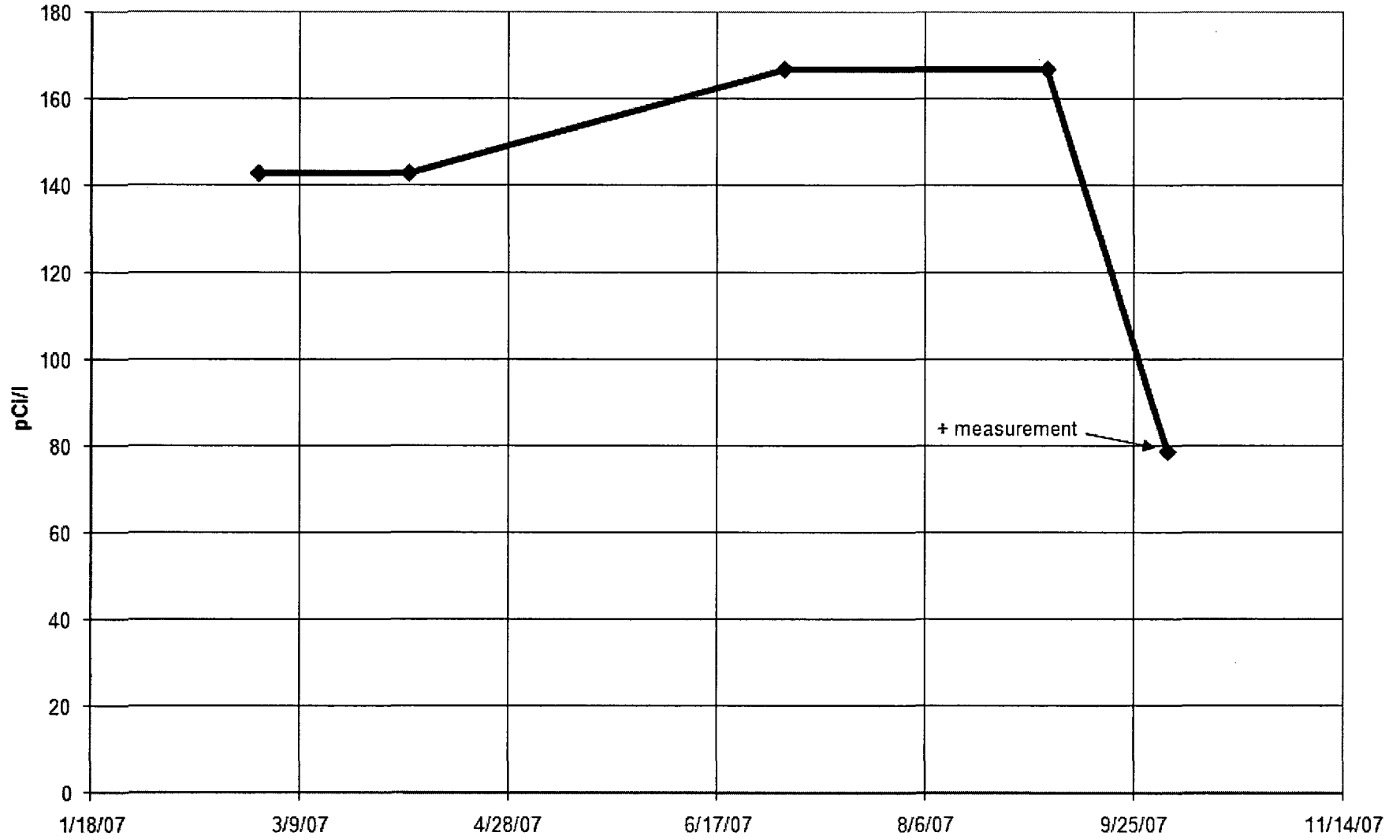
Tritium Measurement GW Well # CR3-2

All results are < LLD

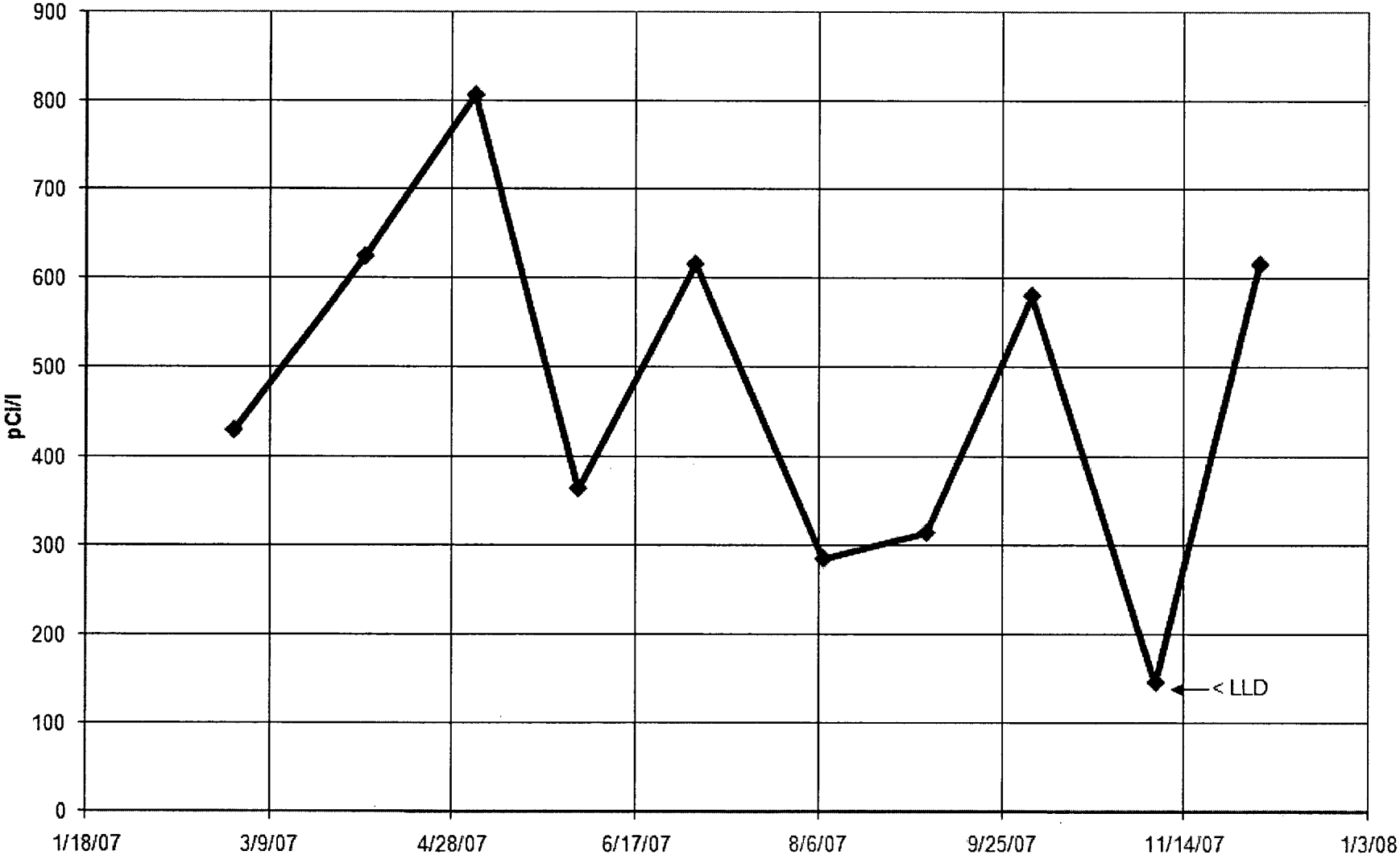


Tritium Measurement GW Well # CR3-4

All results are < LLD unless noted

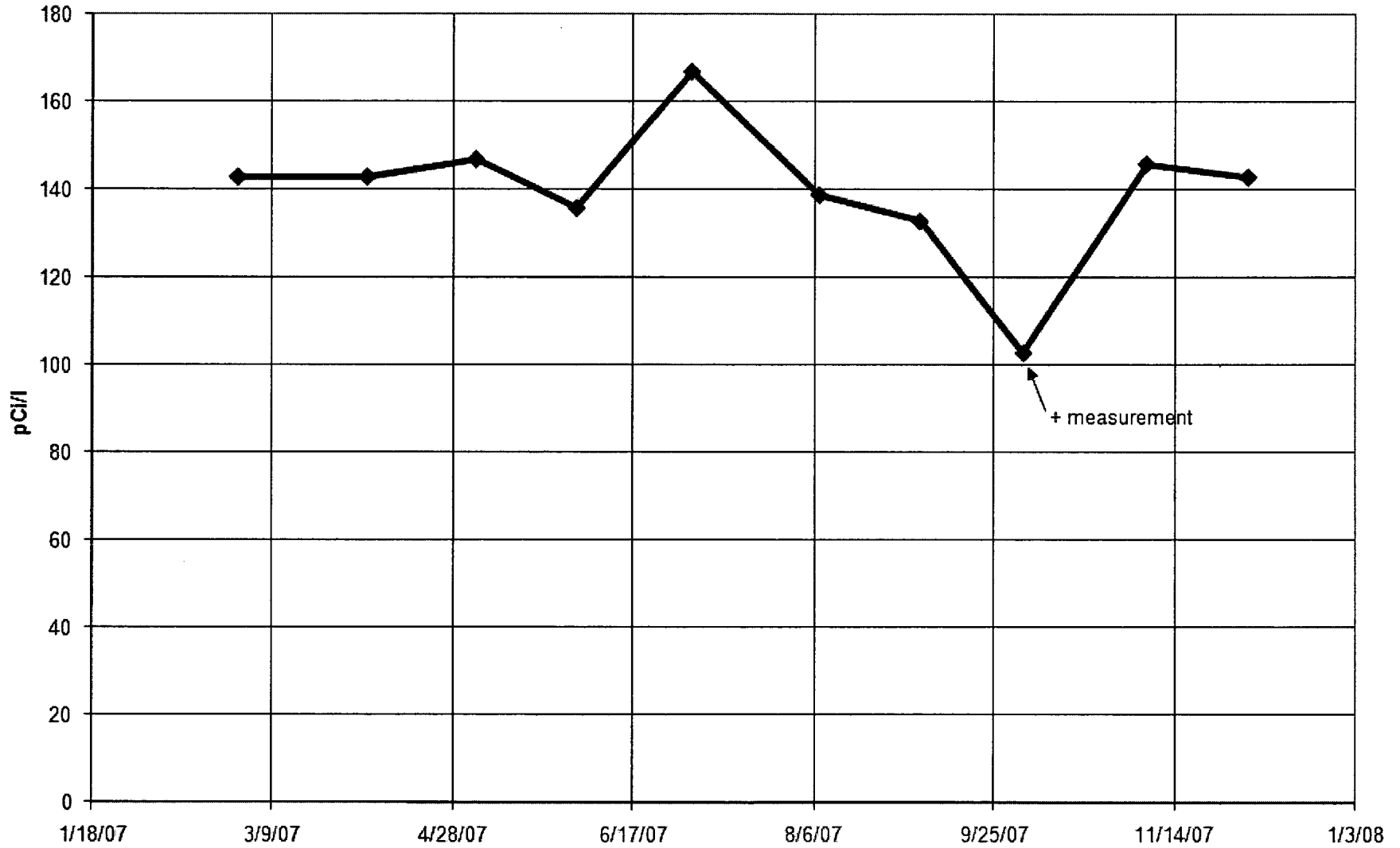


Tritium Measurement GW Well # CR3-5



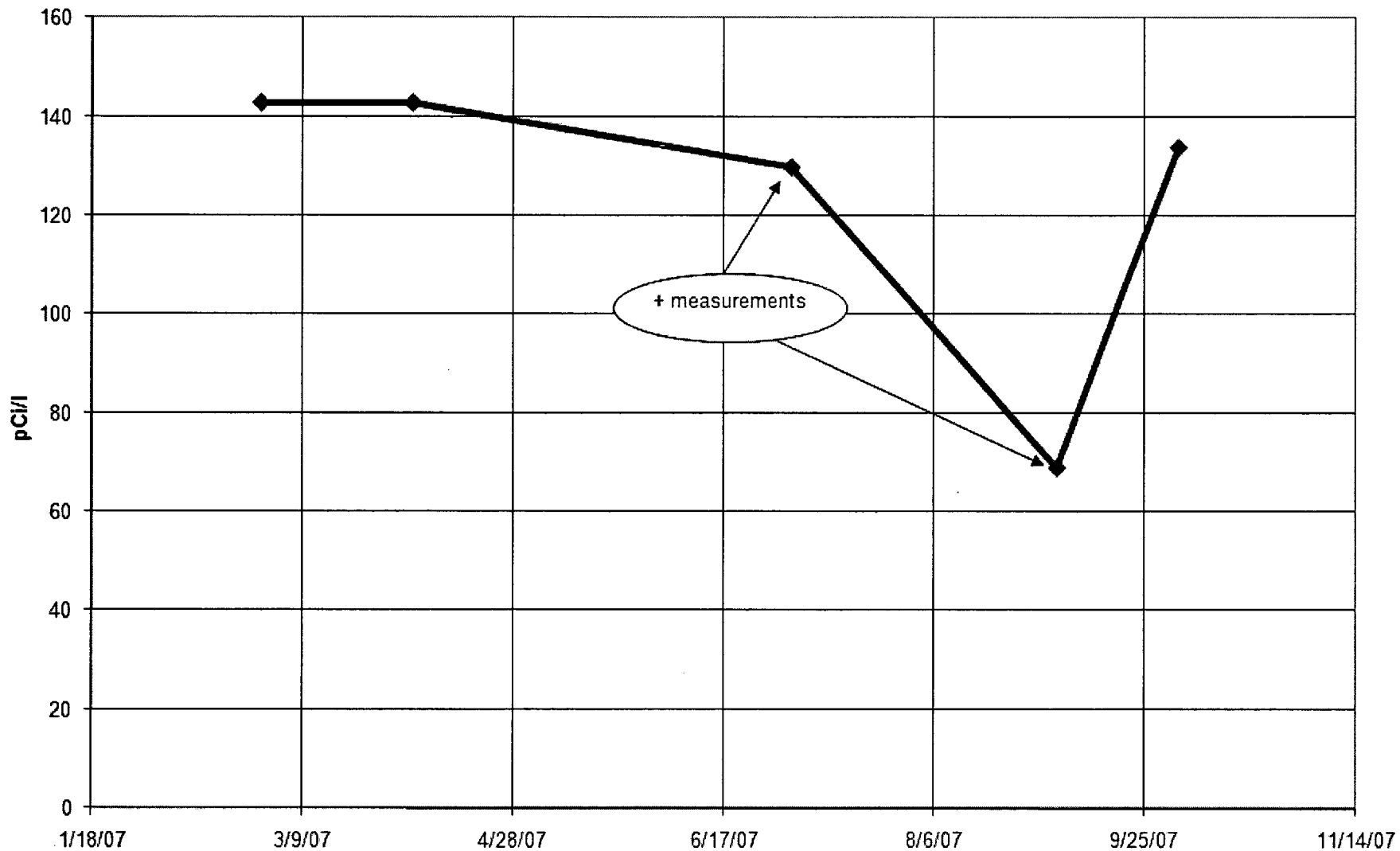
Tritium Measurement GW Well # CR3-6S

All results are < LLD unless noted

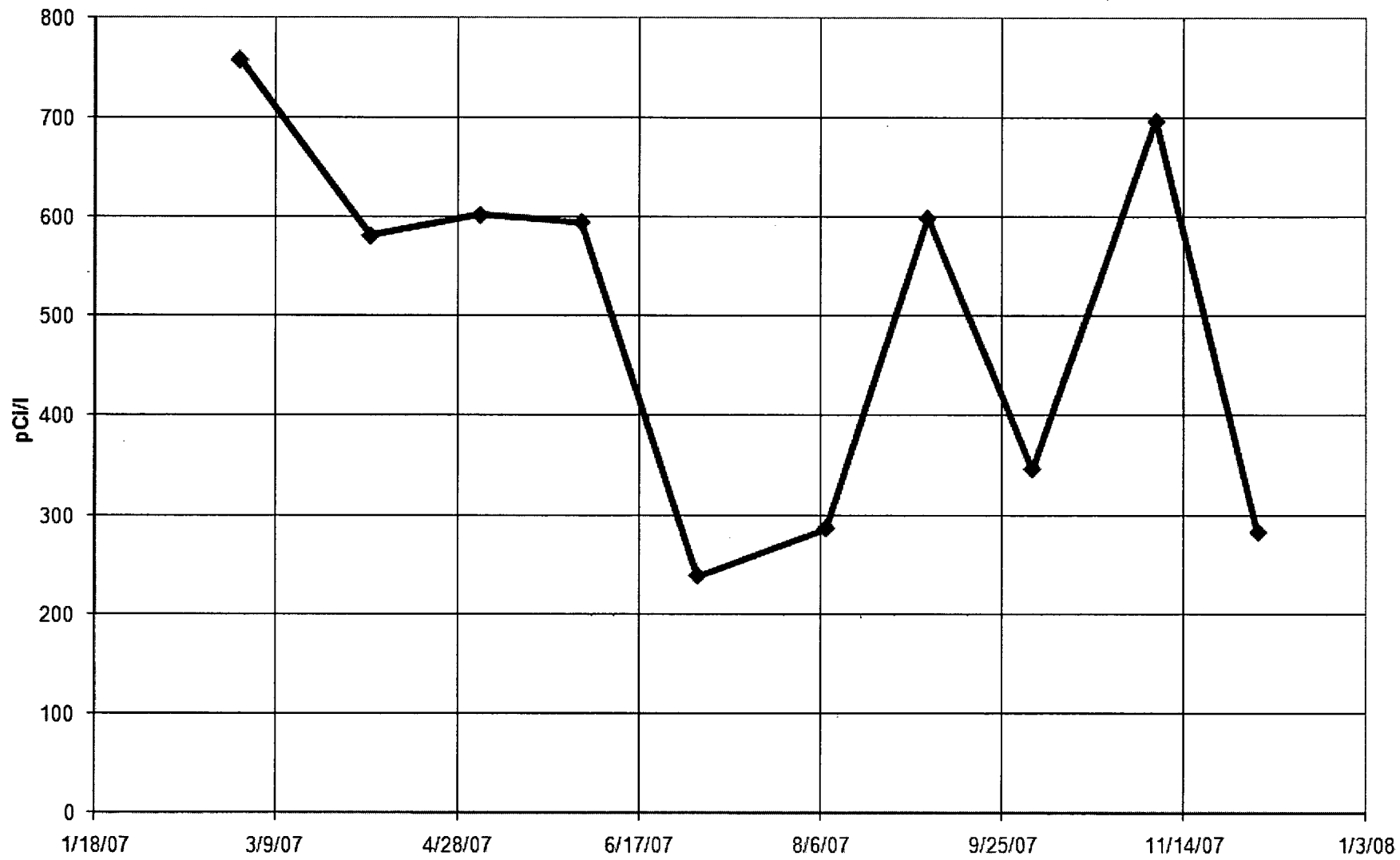


Tritium Measurements GW Well # CR3-6D

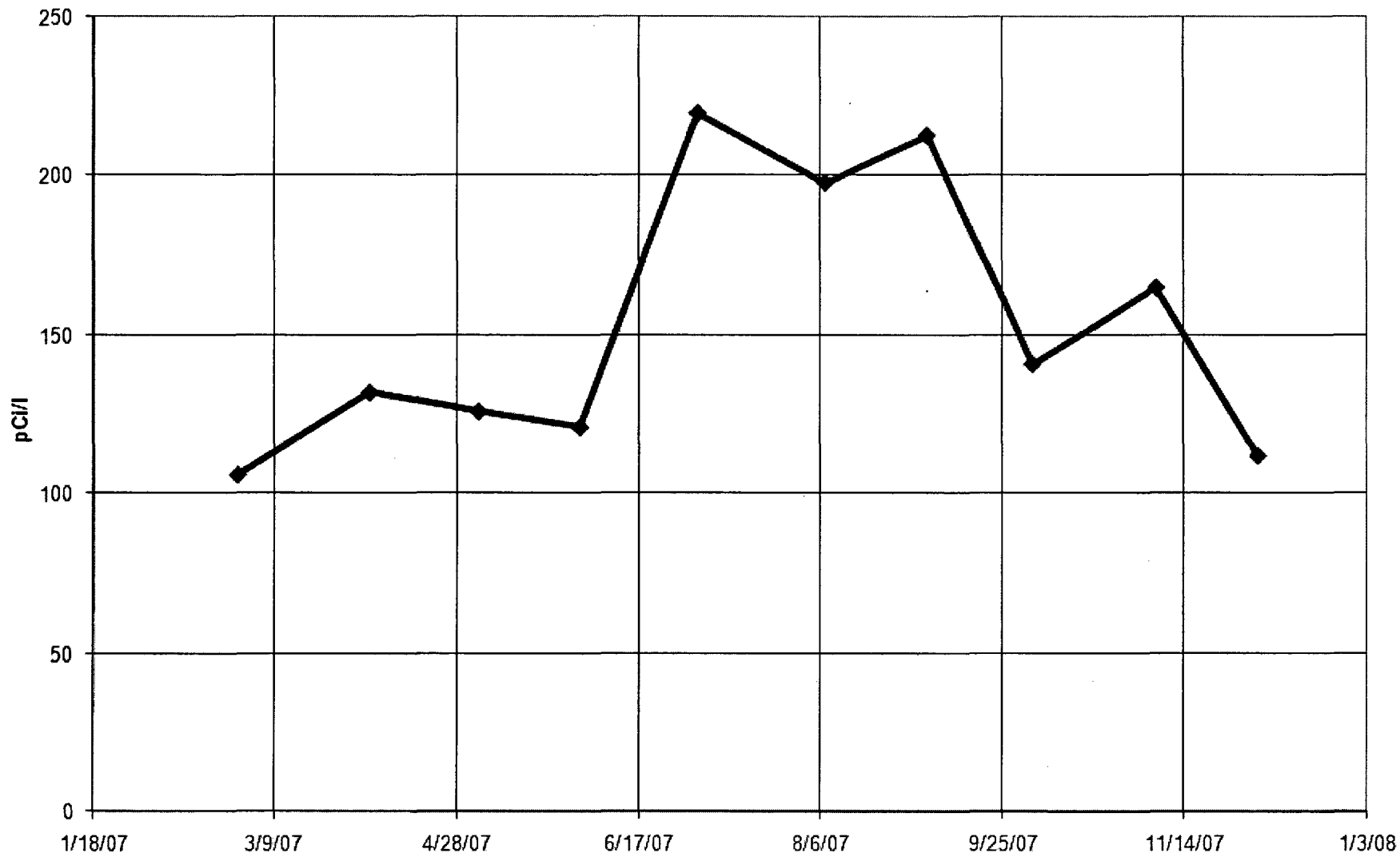
All results are < LLD unless noted



Tritium Measurements GW Well # CR3-7

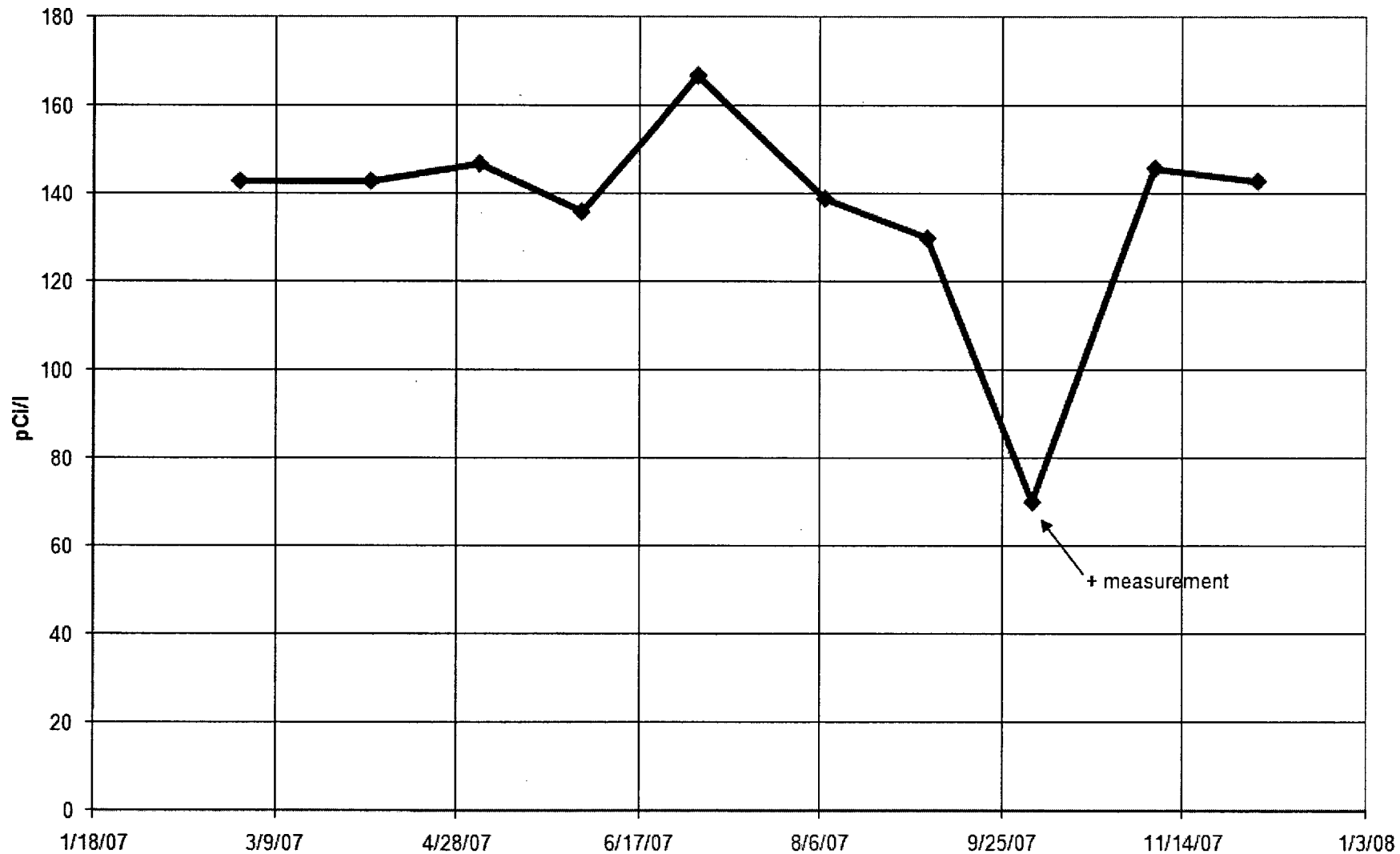


Tritium Measurements GW Well # CR3-8



Tritium Measurements GW Well # CR3-9

All results are < LLD unless noted



Tritium Measurements GW Well # CR3-10

All results are < LLD

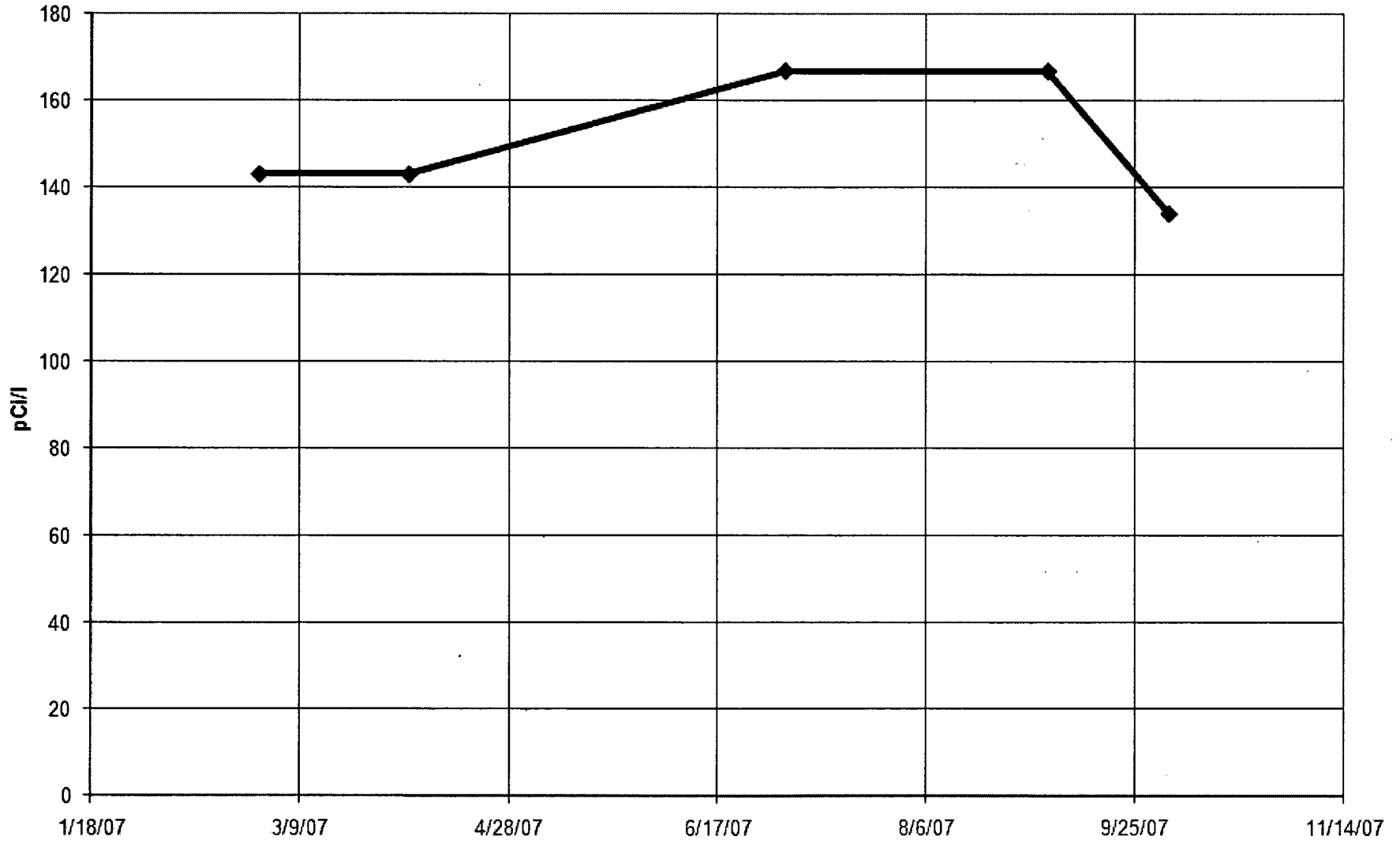


TABLE IV-C.2.c

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS		LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME DISTANCE & BEARING	MEAN RANGE			
*CR3 SITE GROUND WATER (pCi/L) *	Tritium 20	143	543(18/20) (274-1199)	M27 0.42 mi.@285°	731(9/9) (417-1199)	<LLD	0	
	γ Spec 20							
	Mn-54	6	None	-	-	<LLD	0	
	Fe-59	9	None	-	-	<LLD	0	
	Co-58	5	None	-	-	<LLD	0	
	Co-60	6	None	-	-	<LLD	0	
	Zn-65	13	None	-	-	<LLD	0	
	Zr-Nb-95	10	None	-	-	<LLD	0	
	I-131	7	None	-	-	<LLD	0	
	Cs-134	8	None	-	-	<LLD	0	
	Cs-137	6	None	-	-	<LLD	0	
Ba-La-140	15	None	-	-	<LLD	0		

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

*Non-REMP required samples

TABLE IV-C.2.c.1

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER (SUPPLEMENTAL DATA)

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
MWC-27*	04-04	1199±67	<50	<3	<3	<7	<4	<8	<5	<4	<4	<4	<9
	05-04	1072±66	<64	<4	<4	<9	<3	<9	<7	<6	<4	<4	<7
	06-01	968±62	<38	<2	<2	<5	<2	<5	<4	<3	<3	<2	<4
	07-03	960±72	47±19	<4	<4	<8	<4	<7	<6	<7	<3	<4	<5
	08-07	495±54	<46	<2	<2	<5	<2	<6	<5	<3	<3	<3	<5
	09-04	475±52	<61	<3	<3	<8	<4	<8	<5	<4	<5	<4	<12
	10-03	551±54	<52	<4	<4	<7	<4	<9	<7	<7	<5	<4	<6
	11-06	417±55	<65	<4	<5	<8	<4	<10	<8	<6	<5	<5	<10
	12-06	442±54	63±8	<2	<2	<3	<2	<3	<3	<3	<2	<2	<3
MWC-IF2*	04-04	287±50	<52	<3	<3	<6	<3	<7	<6	<5	<5	<4	<10
	05-04	270±51	<65	<4	<4	<7	<5	<8	<6	<6	<4	<3	<6
	06-01	428±51	<47	<3	<3	<6	<3	<6	<5	<3	<3	<3	<4
	07-03	481±62	<59	<4	<4	<9	<3	<6	<7	<6	<3	<4	<4
	08-07	274±49	<67	<4	<4	<8	<4	<9	<7	<4	<5	<4	<11
	09-04	415±50	<60	<4	<4	<8	<2	<9	<8	<5	<3	<4	<15
	10-03	428±51	<41	<2	<2	<5	<3	<5	<4	<4	<3	<2	<4
	11-06	290±52	<69	<4	<4	<7	<4	<9	<7	<5	<5	<5	<7
	12-06	332±52	<80	<6	<4	<9	<6	<13	<10	<8	<8	<6	<8

*= These wells are not officially included in the REMP and are located on either side of the percolation ponds.

TABLE IV-C.2.c.1(cont'd)

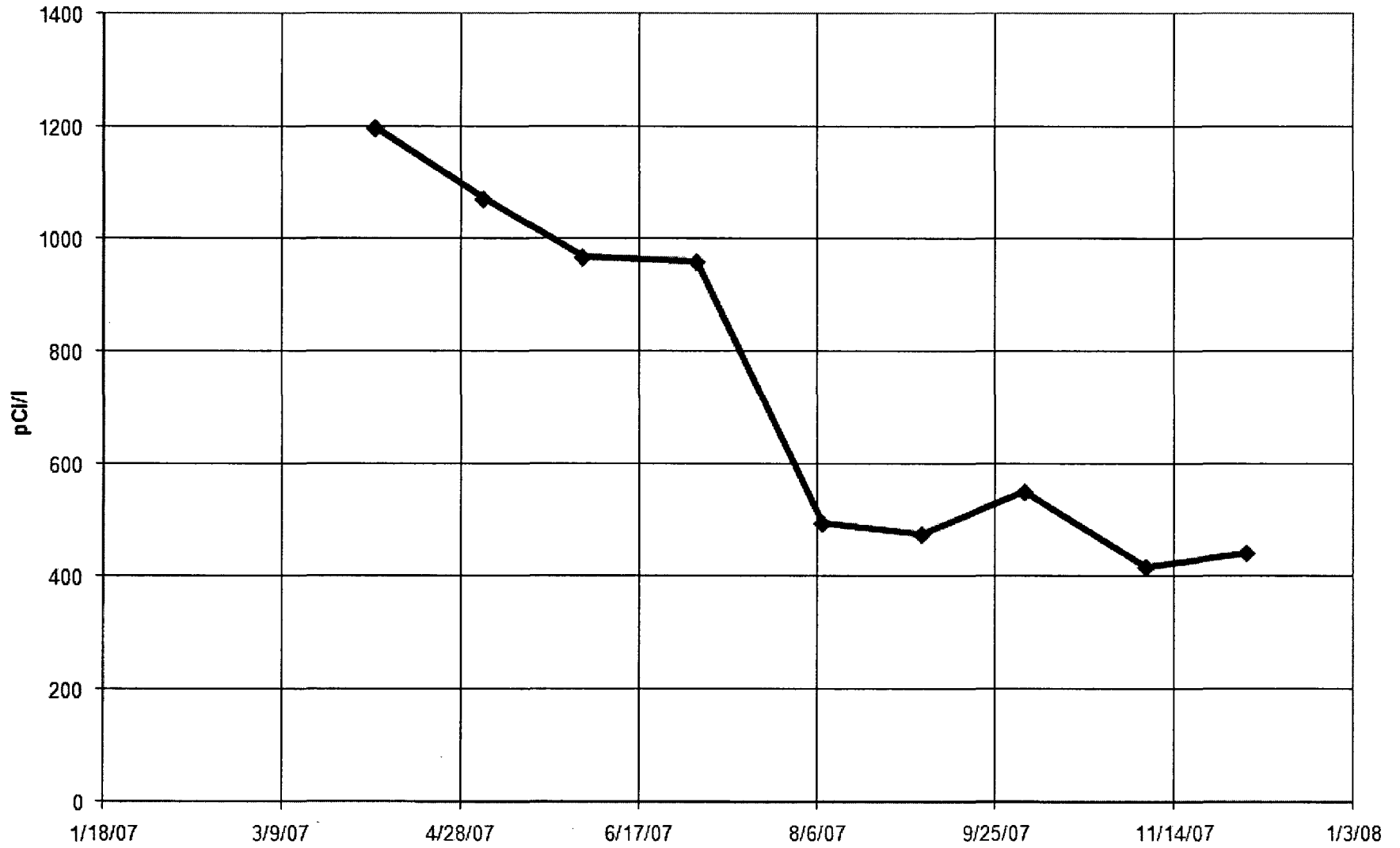
PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN CR3 SITE GROUND WATER (SUPPLEMENTAL DATA)

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
M-28**	04-04	<143	<80	<4	<4	<8	<4	<9	<7	<5	<5	<4	<9
M-29**	04-04	<143	<48	<4	<4	<8	<4	<7	<6	<5	<4	<4	<8

** = These wells are not officially included in the REMP. M-28 is located north of the discharge canal. M-29 is located south of the intake canal.

Tritium Measurements GW Well # MWC-27



Tritium Measurements GW Well # MWC-IF2

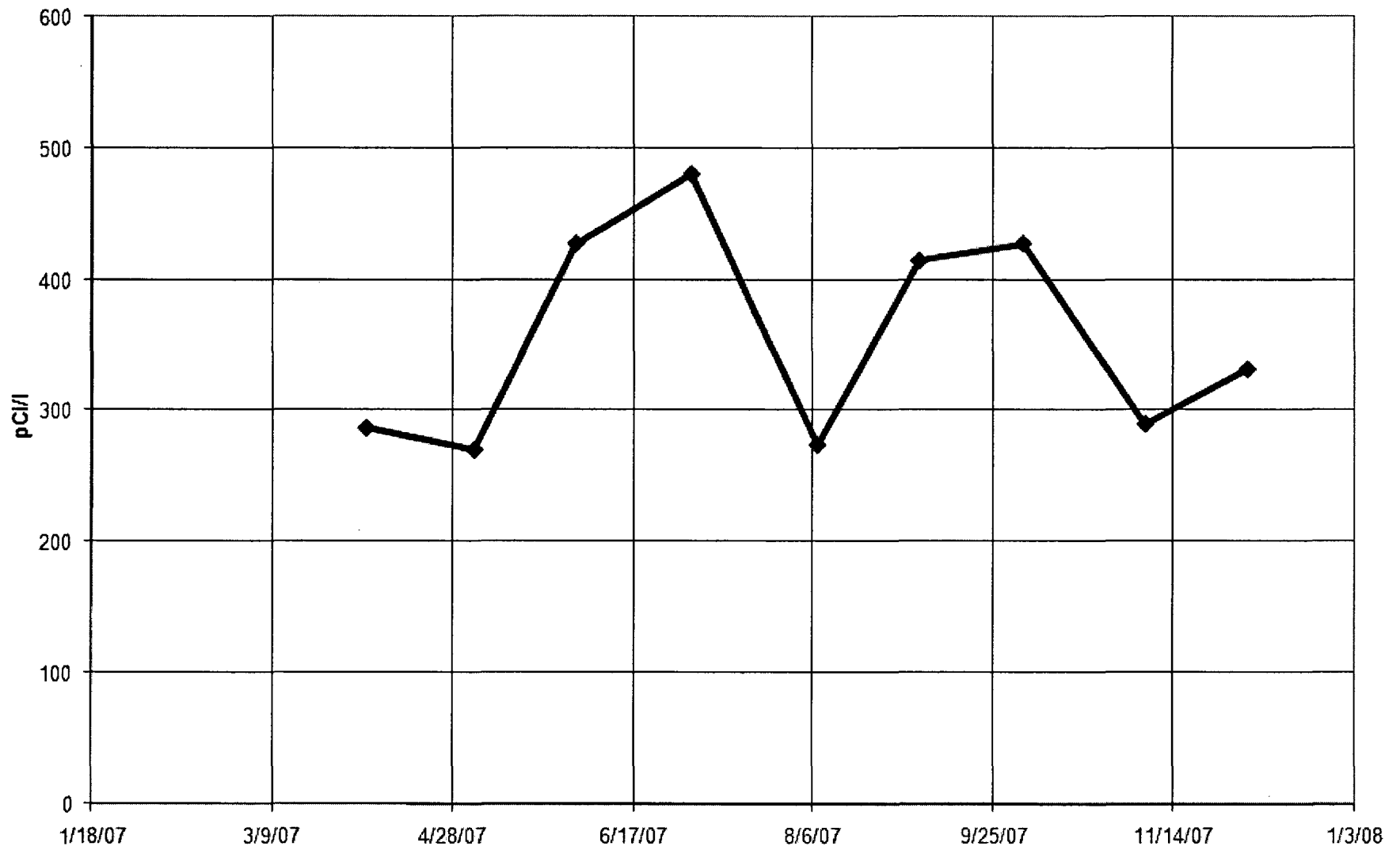


TABLE IV-C.3

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME DISTANCE & BEARING	MEAN RANGE		
DRINKING WATER (pCi/L)	Tritium 12	167	None	-	-	<LLD	0
	γ Spec 12						
	Mn-54	5	None	-	-	<LLD	0
	Fe-59	5	None	-	-	<LLD	0
	Co-58	4	None	-	-	<LLD	0
	Co-60	5	None	-	-	<LLD	0
	Zn-65	11	None	-	-	<LLD	0
	Zr-Nb-95	8	None	-	-	<LLD	0
	I-131	8	None	-	-	<LLD	0
	Cs-134	6	None	-	-	<LLD	0
Cs-137	6	None	-	-	<LLD	0	
Ba-La-140	13	None	-	-	<LLD	0	

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-C.3.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/L γ EMITTERS AND TRITIUM IN DRINKING WATER

STATION	DATE	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zn-Nb-95	I-131	Cs-134	Cs-137	Ba-La-140
C07	01-02	<145	48	<4	<4	<8	<4	<8	<7	<4	<4	<3	<6
	04-17	<145	42	<3	<3	<6	<2	<8	<6	<5	<4	<3	<5
	07-05	<167	47	<3	<3	<7	<4	<7	<6	<6	<5	<3	<4
	10-02	<134	68	<4	<4	<8	<3	<9	<6	<4	<4	<4	<13
C10	01-02	<145	24	<1	<1	<3	<1	<3	<3	<2	<2	<1	<3
	04-17	<140	49	<3	<3	<9	<4	<8	<6	<6	<4	<3	<5
	07-05	<167	83	<5	<4	<11	<5	<11	<8	<8	<6	<6	<9
	10-02	<136	56	<3	<3	<6	<4	<6	<5	<4	<4	<3	<10
C18	01-02	<145	36	<2	<2	<5	<2	<6	<4	<3	<3	<3	<5
	04-17	<140	62	<3	<3	<9	<4	<8	<7	<7	<5	<4	<6
	07-05	<167	37	<2	<2	<5	<2	<5	<4	<4	<2	<2	<4
	10-02	<136	53	<4	<4	<9	<4	<7	<7	<4	<3	<4	<6

Drinking Water

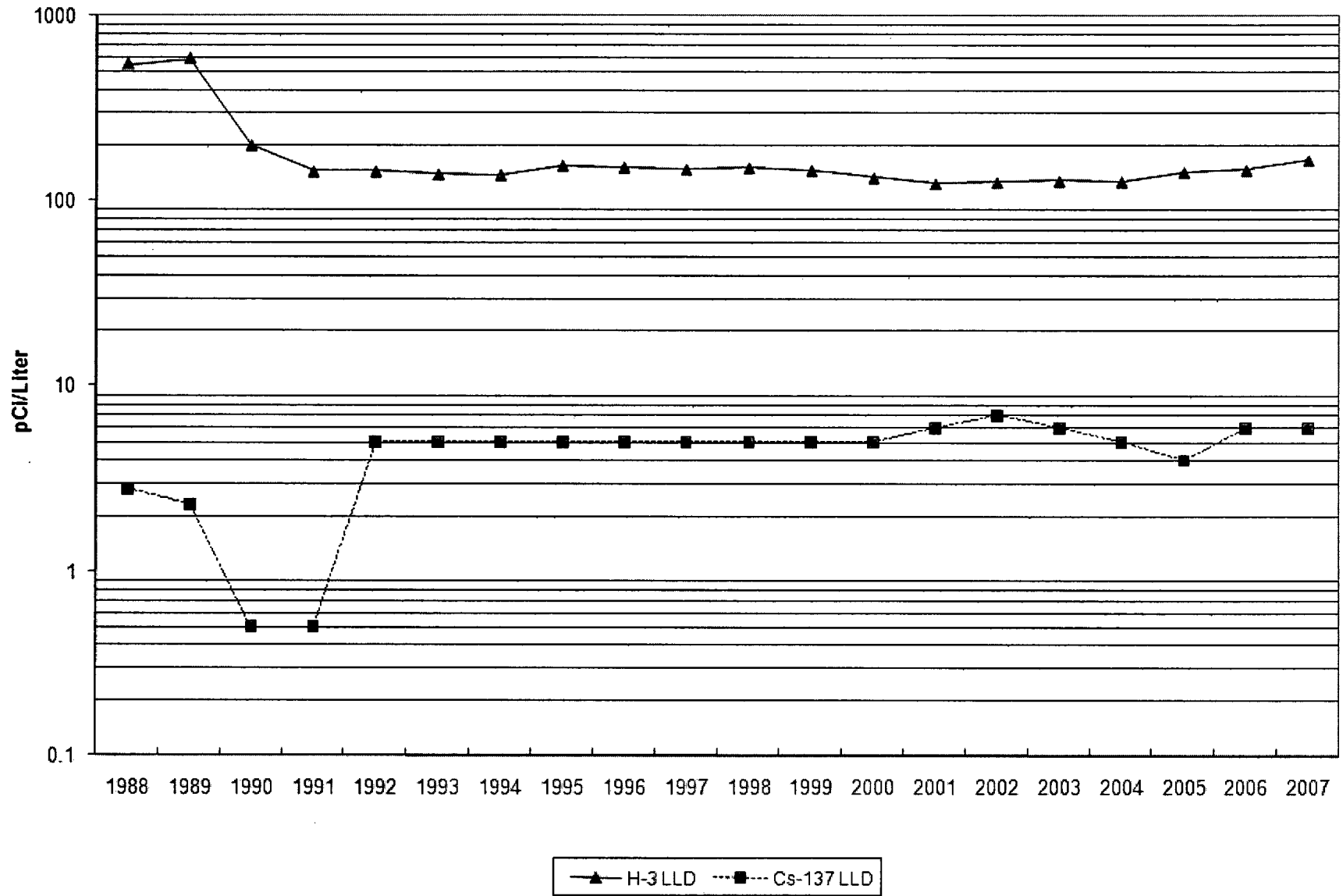


TABLE IV-C.4

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS		LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE		NAME DISTANCE & BEARING	MEAN RANGE		
SHORELINE SEDIMENT (pCi/kg)	γ Spec 8 Cs-134 Cs-137	19 20	<LLD 23 (3/6) (11-30)		— C14M 1.2 @ 270°	— 30 (1/2)	<LLD <LLD	0 0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-C.4.a

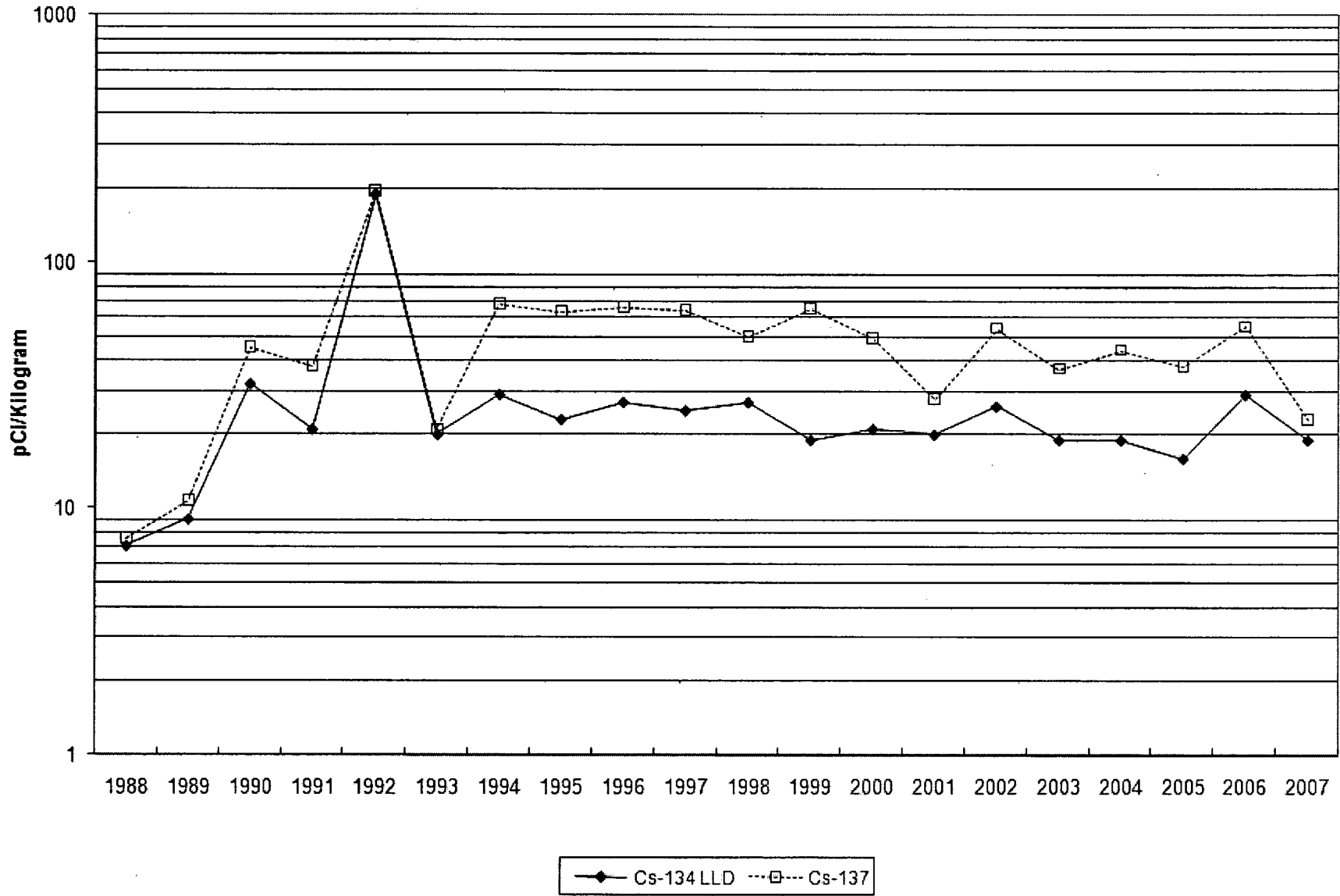
PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/kg γ EMITTERS IN SHORELINE SEDIMENT

STATION	PERIOD	Co-58	Co-60	Cs-134	Cs-137	K-40	Ra-226
C09	First Half	<12	<13	<15	<15	574±101	942±143
	Second Half	<9	<9	<11	<10	484±71	346±109
C14H	First Half	<11	<18	<13	<17	807±82	508±147
	Second Half	<14	<16	<20	29±6	2160±126	1275±186
C14M	First Half	<12	62±5	<15	<20	1060±102	918±158
	Second Half	<14	19±5	<19	30±7	993±129	896±175
C14G	First Half	<14	<21	<16	<16	233±75	1189±171
	Second Half	<15	<20	<18	11±5	344±100	1668±190

C09 is the control station at Ft. Island Beach. C14H, C14M, & C14G are discharge canal stations.

Shoreline Sediment



IV-D. INGESTION PATHWAY

To evaluate the ingestion pathway, samples are taken of fish, oysters, broad leaf vegetation, citrus, and watermelon.

1. Quarterly carnivorous fish samples were taken at two locations: C29 at the end of the discharge canal, and C30, the control location near the mouth of the intake canal. None of the required radionuclides were found in measurable quantities. The highest cesium-137 LLD for station C29 was 25 pCi/kg. Naturally occurring potassium-40 was quantified in all eight samples at concentrations near 3000 pCi/kg. Fish samples are required to be collected every 92 days and have a sample frequency tolerance of 1.25 times the interval specified. There was one instance in the first quarter where the sample was collected 15 days greater than this tolerance, although the sample was actually performed within the calendar quarter. The Department of Health personnel responsible for collecting the sample tried on numerous occasions to collect the fish, but were unsuccessful in meeting the time frame. This event is documented in the CAP under NCR 234028.

Table IV-D.1 provides a statistical summary of the carnivorous fish gamma spectroscopy results.

Table IV-D.1.a provides the results of the quarterly samples.

2. Quarterly oyster samples were taken at the same locations as fish samples, C29 and C30. Of the isotopes required to be evaluated, none indicated measurable amounts of radioactivity. However, silver-110m was quantified in three samples at C29 near the end of the discharge canal, with an average concentration of 85 pCi/kg and a range of 58 to 118 pCi/kg. In 2006, silver-110m was quantified in four samples at C29 and one sample at C30 with an average concentration of 350 pCi/kg and a range of 38 to 845 pCi/kg.

Table IV-D.2 provides a statistical summary of the oyster gamma spectroscopy results.

Table IV-D.2.a provides the results of the quarterly samples.

3. Monthly broad leaf vegetation samples were taken at two indicator locations, C48A and C48B, and one control location, C47. Five of twenty-four indicator samples had measurable amounts of cesium-137 with an average concentration of 89 pCi/kg and a range of 29 to 271 pCi/kg. This is elevated as compared to the previous four years. One sample had a measured concentration of 271 pCi/kg, which has caused the average value to increase by a factor of 3. It is believed this spike was due to possible collection of wire grass mixed into the sample, which has a greater uptake rate of cesium as compared to other broad-leafed media. The following samples collected after this sample had no measurable cesium-137. Six of twelve control station samples had measurable amounts of cesium-137 with an average concentration of 44 pCi/kg and a range of 33 to 64 pCi/kg.

Table IV-D.3 provides a statistical summary of the broad leaf vegetation gamma spectroscopy results.

Table IV-D.3.a provides the results of the monthly samples.

4. Citrus samples are taken at station C19 and watermelon samples were obtained at station C04. None of the required radionuclides were found in measurable quantities in the citrus or watermelon samples.

Table IV-D.4 provides a statistical summary of the watermelon and citrus gamma spectroscopy results.

Table IV-D.4.a provides the results of the semi-annual samples.

TABLE IV-D.1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	<u>ALL INDICATOR LOCATIONS</u>	<u>LOCATION WITH HIGHEST MEAN</u>		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME DISTANCE & BEARING	MEAN RANGE		
CARNIVOROUS FISH (pCi/kg)	γ Spec 8 Mn-54 Fe-59 Co-58 Co-60 Zn-65 Cs-134 Cs-137	27 49 30 34 75 33 26	<LLD <LLD <LLD <LLD <LLD <LLD <LLD	- - - - - - -	- - - - - - -	<LLD <LLD <LLD <LLD <LLD <LLD <LLD	0 0 0 0 0 0 0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-D.1.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/kg γ EMITTERS IN CARNIVOROUS FISH

STATION	QUARTER	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	K-40
C29	1	<7	<7	<14	<9	<16	<8	<7	2473±86
	2	<9	<8	<18	<11	<20	<11	<9	3163±114
	3	<19	<17	<27	<22	<46	<23	<18	2751±195
	4	<27	<24	<49	<27	<58	<35	<25	2633±216
C30	1	<7	<7	<15	<8	<15	<8	<7	2317±81
	2	<17	<16	<22	<18	<40	<22	<16	2477±184
	3	<24	<16	<38	<28	<52	<26	<21	1537±184
	4	<23	<30	<52	<34	<75	<33	<26	2925±251

Carnivorous Fish

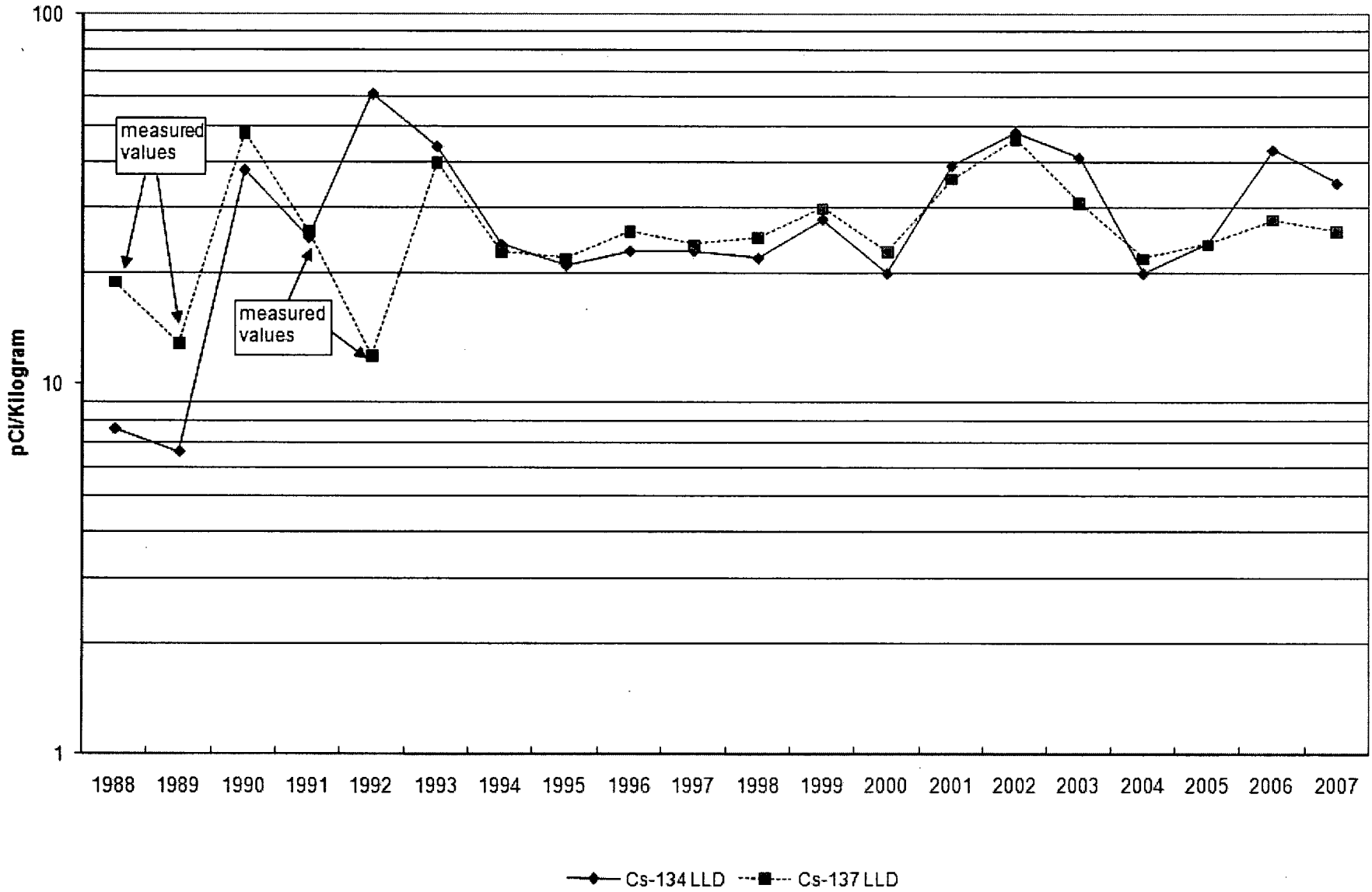


TABLE IV-D.2

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	<u>ALL INDICATOR LOCATIONS</u>	<u>LOCATION WITH HIGHEST MEAN</u>		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME DISTANCE & BEARING	MEAN RANGE		
OYSTERS (pCi/kg)	γ Spec 8						
	Mn-54	22	<LLD	-	-	<LLD	0
	Fe-59	52	<LLD	-	-	<LLD	0
	Co-58	20	<LLD	-	-	<LLD	0
	Co-60	23	<LLD	-	-	<LLD	0
	Zn-65	53	<LLD	-	-	<LLD	0
	Cs-134	28	<LLD	-	-	<LLD	0
	Cs-137	22	<LLD	-	-	<LLD	0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-D.2.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/kg γ EMITTERS IN OYSTERS

STATION	QUARTER	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	K-40
C29	1	<11	<11	<23	<14	<26	<14	<12	1297±103
	2	<8	<8	<17	<9	<16	<9	<9	1031±70
	3	<15	<14	<30	<16	<34	<16	<13	888±120
	4	<20	<20	<52	<23	<53	<28	<22	1199±157
C30	1	<9	<8	<17	<11	<21	<10	<10	1662±87
	2	<11	<12	<33	<15	<25	<14	<12	931±96
	3	<12	<16	<30	<17	<32	<15	<15	751±108
	4	<22	<20	<41	<17	<38	<20	<20	1006±133

Ag-110m was quantified in three samples taken at station C29, near the end of the discharge canal. The concentration ranges from 58 to 118 pCi/Kg.

Oysters

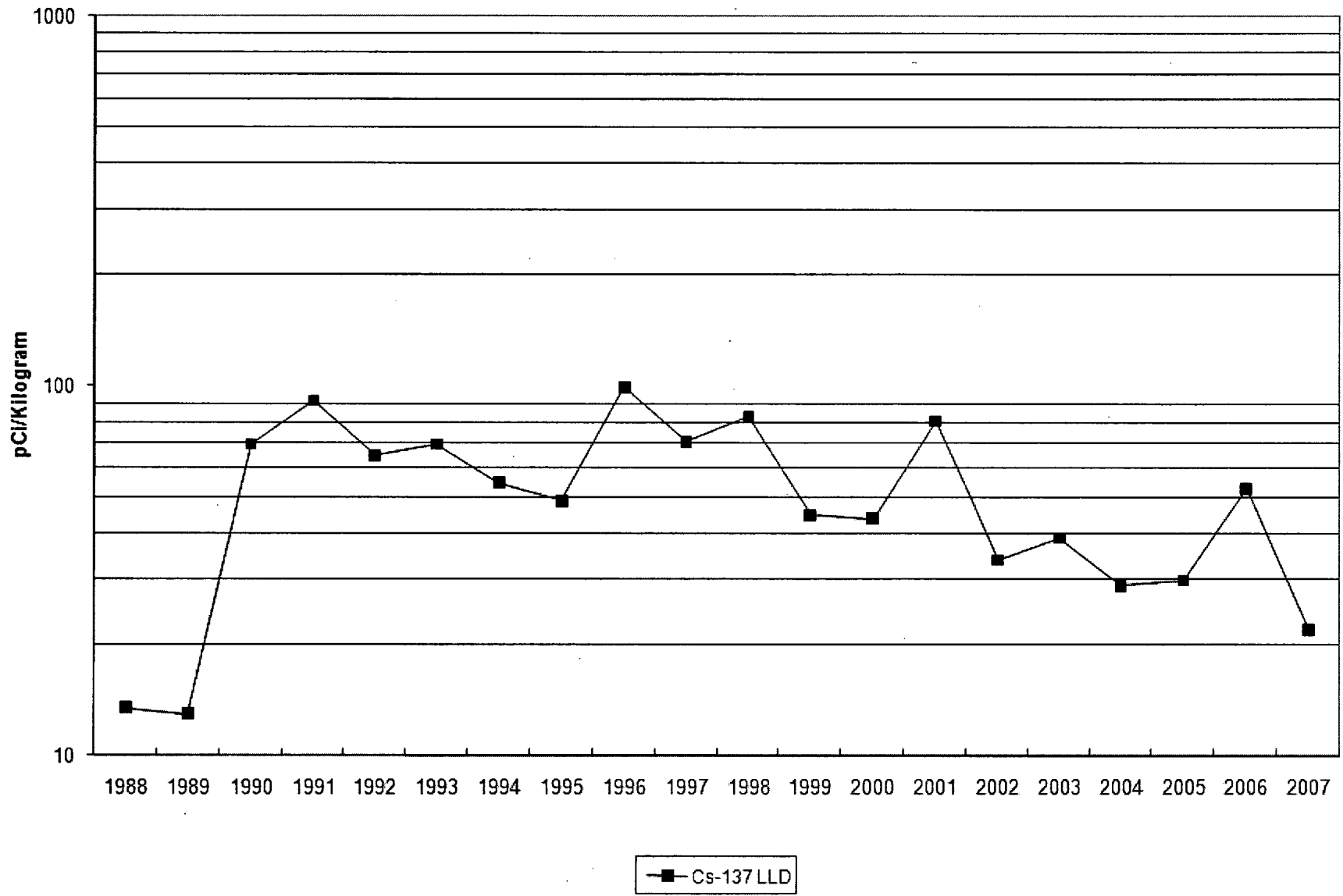


TABLE IV-D.3

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME	MEAN RANGE		
BROAD LEAF VEGETATION (pCi/kg)	γ Spec 36						
	I-131	30	<LLD	-	-	<LLD	0
	Cs-134	28	<LLD	-	-	<LLD	0
	Cs-137	27	89 (5/24) (29-271)	C48B 0.9 @ 45°	124 (3/12) (29-271)	44 (6/12) (33-64)	0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-D.3.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/kg OF γ EMITTERS IN BROAD LEAF VEGETATION

STATION	MONTH	I-131	Cs-134	Cs-137	K-40
C47	JAN	<10	<15	55±7	3210±147
	FEB	<27	<16	37±6	3066±148
	MAR	<22	<10	<17	3530±163
	APR	<7	<5	64±3	2333±54
	MAY	<10	<12	34±3	3520±141
	JUN	<11	<15	<15	2159±124
	JUL	<18	<13	<13	3110±146
	AUG	<14	<11	<18	2766±142
	SEP	<13	<18	33±7	3545±216
	OCT	<15	<15	40±8	3019±181
	NOV	<11	<17	<13	3785±155
	DEC	<29	<17	<15	5806±206
C48A	JAN	<20	<21	<19	7277±214
	FEB	<27	<26	31±14	5587±277
	MAR	<15	<16	<16	3825±242
	APR	<9	<13	<12	5707±297
	MAY	<15	<21	<18	7818±153
	JUN	<12	<19	<18	6550±276
	JUL	<30	<23	<22	6284±283
	AUG	<19	<28	<27	7792±311
	SEP	<18	<25	<21	6557±284
	OCT	<16	<22	<19	7845±201
	NOV	<16	<20	42±7	5854±257
	DEC	<15	<14	<17	6693±269

TABLE IV-D.3.a (CONT'D)

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/kg OF γ EMITTERS IN BROAD LEAF VEGETATION

STATION	MONTH	I-131	Cs-134	Cs-137	K-40
C48B	JAN	<8	<8	29±4	1782±92
	FEB	<22	<20	<19	2957±218
	MAR	<17	<19	<19	4166±225
	APR	<9	<14	<10	5532±180
	MAY	<11	<18	<18	5537±244
	JUN	<7	<9	<9	5351±136
	JUL	<21	<19	<21	4956±257
	AUG	<18	<28	72±11	4856±265
	SEP	<13	<14	<18	4093±162
	OCT	<8	<8	271±6	2580±122
	NOV	<7	<10	<8	4497±128
	DEC	<18	<17	<17	5702±258

Broad Leaf Vegetation

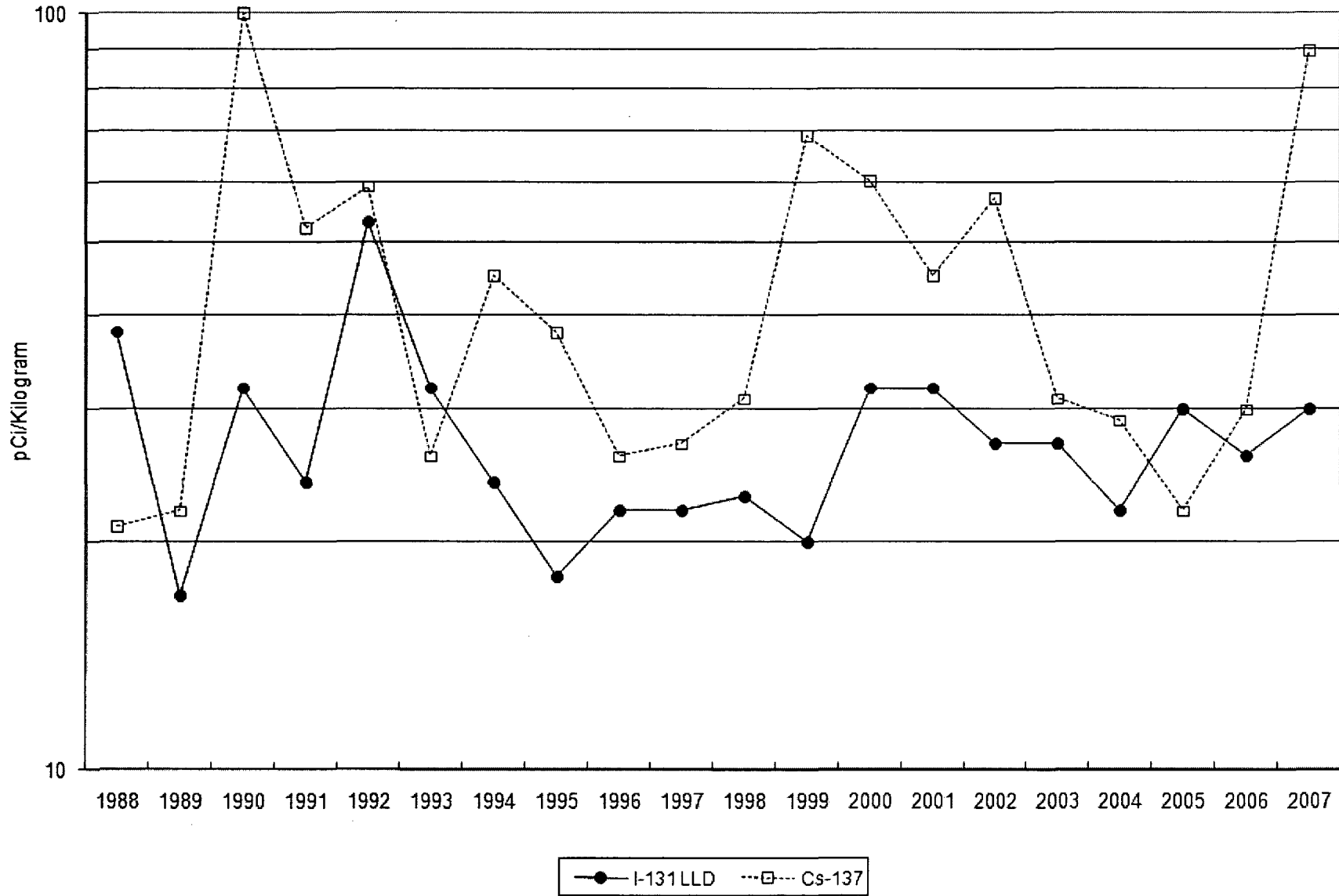


TABLE IV-D.4

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

CRYSTAL RIVER UNIT 3

DOCKET NO. 50-302

CITRUS COUNTY, FLORIDA

JANUARY 1 TO DECEMBER 31, 2007

MEDIUM OR PATHWAY SAMPLED (UNITS)	ANALYSIS AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMIT OF DETECTION (LLD) ¹	ALL INDICATOR LOCATIONS	LOCATION WITH HIGHEST MEAN		CONTROL LOCATION MEAN RANGE	NUMBER OF NONROUTINE REPORTED MEASUREMENTS
			MEAN RANGE	NAME	MEAN RANGE		
WATERMELON (pCi/kg)	γ Spec 1						
	I-131	5	<LLD	-	-	None	0
	Cs-134	4	<LLD	-	-	None	0
	Cs-137	8	<LLD	-	-	None	0
CITRUS (pCi/kg)	γ Spec 1						
	I-131	3	<LLD	-	-	None	0
	Cs-134	4	<LLD	-	-	None	0
	Cs-137	4	<LLD	-	-	None	0

¹The "a priori" LLD which meets or exceeds the requirements of Table 2-9 of the CR-3 ODCM.

TABLE IV-D.4.a

PROGRESS ENERGY FLORIDA, INC. - CR3 - 2007

pCi/kg OF γ EMITTERS IN WATERMELON AND CITRUS

STATION	MONTH	I-131	Cs-134	Cs-137	K-40
C04 - Watermelon	June	<5	<4	<8	1096 \pm 59
C19 - Citrus	January	<3	<4	<4	1659 \pm 52