

MONTHLY PROGRESS REPORT
TO
COMMONWEALTH EDISON COMPANY

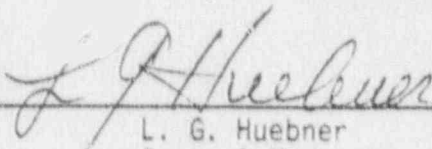
ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM
FOR
BYRON NUCLEAR POWER STATION
BYRON, ILLINOIS

PREPARED AND SUBMITTED
BY
TELEDYNE ISOTOPES MIDWEST LABORATORY

FILE
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Reporting Period: January - December, 1985

Reviewed and
Approved by:



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Date 2-7-86

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1.0 INTRODUCTION

The following constitutes the current Monthly Progress Report for the Environmental Radiological Monitoring Program conducted at the Byron Nuclear Power Station, Byron, Illinois. Results of completed analyses are presented in the attached tables. Missing entries indicate analyses that are not completed and the results will appear in subsequent reports.

Data obtained in the program are well within the ranges previously encountered in the program and to be expected in the environmental media sampled.

None of the media sampled this month contained radioactivity attributable to the construction of Byron Nuclear Power Station.

For all gamma isotopic analyses, spectrum is computer scanned from 80 to 2048 KeV. Specifically included are Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, Ru-103, Ru-106, I-131, Ba-La-140, Cs-134, Cs-137, Ce-141, and Ce-144. Naturally occurring gamma emitters, such as K-40 and Ra daughters, are frequently detected but not listed here. Data listed as "<" are at the 4.66 sigma level, others are 2 sigma. Cs-134 and Cs-137 are listed separately. All other gamma emitters are listed under "Other Gammas". Unless noted otherwise, the less than value ("<") reported under "Other Gammas" is for Co-60 and may be higher or lower for other radionuclides.

All concentrations, except gross beta, are decay corrected to the time of collection.

Deviations from Scheduled Sampling and Corrective Actions Taken

All samples were collected within the scheduled period unless noted otherwise in the Listing of Missed Samples.

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2.0 LISTING OF MISSED SAMPLES

Sample Type	Location	Expected Collection Date	Reason
Cooling Water	BY-10	01-21-85	Station did not provide sample.
TLD	BY-212-1	3rd Quarter	Lost in field.

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Table 1. Airborne Particulates and Iodine-131^a
 Collection: Weekly
 Units: 10⁻² pCi/m³

Week Ending	Byron BY-01		Stillman Valley BY-02 (C)		Near Site E BY-03		Paynes Point BY-04	
	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta
01-07-85	282	2.6±0.4	285	3.2±0.4	285	3.3±0.4	286	3.2±0.4
01-15-85	326	2.2±0.3	325	2.3±0.3	325	2.0±0.3	326	2.3±0.3
01-21-85	245	3.0±0.4	244	3.5±0.4	236	2.6±0.4	230	3.0±0.4
01-28-85	283	2.3±0.4	281	1.9±0.3	281	2.3±0.4	284	2.5±0.4
02-04-85	290	4.5±0.4	287	4.7±0.5	287	4.0±0.4	285	3.9±0.4
02-11-85	282	5.1±0.5	284	5.1±0.5	285	5.4±0.5	286	5.8±0.5
02-18-85	284	3.6±0.4	285	3.3±0.4	285	3.2±0.4	285	3.0±0.4
02-25-85	286	1.8±0.4	285	2.0±0.4	285	2.0±0.4	285	1.7±0.4
03-04-85	282	2.4±0.4	283	2.2±0.4	287	2.4±0.4	285	2.3±0.4
03-11-85	280	2.8±0.4	283	2.4±0.4	284	2.0±0.3	285	2.2±0.3
03-18-85	285	1.4±0.3	285	1.4±0.3	3 ^b	<4.9	285	1.4±0.3
03-25-85	287	1.8±0.4	286	1.8±0.4	286	1.8±0.4	286	2.0±0.4
04-01-85	294	2.1±0.3	286	1.9±0.3	285	2.0±0.4	283	2.1±0.4
1st Q mean ± s.d.		2.7±1.1		2.7±1.1		2.8±1.1		2.7±1.1
04-08-85	276	1.4±0.3	283	1.7±0.3	282	2.0±0.4	288	1.4±0.3
04-15-85	285	3.2±0.4	285	3.3±0.4	285	2.8±0.4	285	2.6±0.4
04-22-85	285	2.3±0.4	284	2.3±0.4	286	2.4±0.4	286	2.4±0.4
04-29-85	284	1.6±0.4	284	1.5±0.4	284	1.6±0.4	284	1.2±0.3
05-06-85	292	2.3±0.4	288	2.0±0.4	287	2.2±0.4	284	2.3±0.4
05-13-85	278	2.5±0.4	282	2.5±0.4	282	2.8±0.4	285	2.7±0.4
05-20-85	287	1.3±0.3	287	1.1±0.3	281	1.4±0.3	285	1.1±0.3
05-27-85	282	1.9±0.3	286	1.9±0.3	282	2.0±0.3	284	1.8±0.3
06-03-85	293	1.8±0.3	284	1.6±0.3	283	1.8±0.4	285	1.4±0.3
06-10-85	279	2.4±0.4	283	2.0±0.3	284	2.0±0.3	285	1.6±0.3
06-17-85	287	1.6±0.3	286	2.2±0.4	286	2.0±0.4	285	1.8±0.3
06-24-85	286	2.3±0.4	286	1.9±0.3	285	2.2±0.3	285	2.5±0.4
07-01-85	297	1.8±0.3	288	1.7±0.3	287	2.0±0.3	286	1.8±0.3
2nd Q mean ± s.d.		2.0±0.5		2.0±0.5		2.1±0.4		1.9±0.6

^a Iodine-131 concentrations are <0.10 pCi/m³ unless noted otherwise.
^b Low volume and elevated LLD due to pump which stopped.

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Table 1. Airborne Particulates and Iodine-131^a (continued)

Week Ending	Byron BY-01		Stillman Valley BY-02 (C)		Near Site E BY-03		Paynes Point BY-04	
	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta
07-08-85	272	3.2±0.4	282	3.0±0.4	283	2.4±0.4	285	2.6±0.4
07-15-85	288	2.9±0.4	287	3.1±0.4	286	3.2±0.4	285	3.0±0.4
07-22-85	284	2.6±0.2	284	2.2±0.2	285	2.0±0.2	286	2.3±0.2
07-29-85	290	2.8±0.4	290	2.9±0.4	290	1.4±0.3	290	2.4±0.4
08-05-85	284	1.9±0.3	282	2.2±0.4	281	2.0±0.4	281	2.1±0.4
08-12-85	283	3.2±0.4	286	2.9±0.4	286	2.6±0.4	287	3.1±0.4
08-19-85	284	2.5±0.4	283	3.9±0.5	283	2.3±0.4	284	2.4±0.4
08-26-85	281	1.7±0.4	282	1.6±0.4	282	1.2±0.3	282	1.7±0.4
09-02-85	293	3.2±0.4	289	3.3±0.4	289	2.8±0.4	288	3.1±0.4
09-09-85	278	2.8±0.4	282	3.0±0.4	284	2.3±0.4	283	2.3±0.4
09-16-85	289	1.7±0.3	288	2.1±0.4	288	1.9±0.4	287	1.6±0.3
09-23-85	285	1.5±0.3	285	2.4±0.4	285	2.4±0.4	286	2.4±0.4
09-30-85	289	2.4±0.4	286	2.6±0.4	286	2.6±0.4	286	2.0±0.3
3rd Q mean ± s.d.		2.5±0.6		2.7±0.6		2.2±0.6		2.4±0.5
10-07-85	286	2.8±0.4	286	3.0±0.4	286	2.1±0.3	285	1.9±0.3
10-14-85	282	1.5±0.3	287	2.1±0.3	287	1.9±0.3	288	1.9±0.3
10-21-85	287	1.8±0.3	285	2.2±0.4	285	1.9±0.4	284	2.1±0.4
10-28-85	286	2.2±0.4	286	1.9±0.4	286	1.9±0.3	287	2.1±0.4
11-04-85	289	1.7±0.3	287	2.1±0.4	286	1.9±0.3	286	1.8±0.3
11-11-85	282	1.3±0.3	285	1.4±0.3	286	1.5±0.3	287	1.2±0.3
11-18-85	286	2.6±0.4	286	2.8±0.4	286	2.4±0.4	286	2.1±0.4
11-25-85	285	4.3±0.4	286	4.9±0.5	286	3.9±0.4	285	3.6±0.4
12-02-85	291	3.5±0.4	287	3.1±0.4	287	2.7±0.4	287	2.6±0.4
12-09-85	279	8.5±0.6	288	4.2±0.4	284	6.2±0.5	285	7.5±0.6
12-16-85	282	5.9±0.5	282	5.7±0.5	282	6.0±0.5	282	6.5±0.5
12-23-85	291	4.3±0.4	291	3.4±0.4	291	3.7±0.4	291	3.8±0.4
12-30-85	286	2.5±0.4	290	2.2±0.4	295	2.1±0.4	280	2.7±0.4
4th Q mean ± s.d.		3.3±2.0		3.0±1.3		2.9±1.6		3.1±1.9

^a Iodine-131 concentrations are <0.10 pCi/m³ unless noted otherwise.

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Table 2. Airborne Particulates and Iodine-131^a
 Collection: Weekly
 Units: 10⁻² pCi/m³

Week Ending	Near Site S BY-05		Oregon BY-06		Mt. Morris BY-07 (C)		Leaf River BY-08 (C)	
	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta
01-07-85	297	1.2±0.3	283	1.9±0.3	283	2.8±0.4	284	3.0±0.4
01-15-85	322	2.6±0.4	323	2.6±0.4	326	2.4±0.3	326	2.8±0.4
01-21-85	243	3.2±0.4	245	2.4±0.4	245	2.8±0.4	245	3.1±0.4
01-28-85	282	2.1±0.4	282	2.9±0.4	284	2.1±0.4	284	2.1±0.4
02-04-85	290	4.1±0.4	289	4.2±0.4	289	3.4±0.4	288	3.9±0.4
02-11-85	282	4.8±0.4	282	4.6±0.5	282	4.2±0.4	282	4.9±0.5
02-18-85	284	3.4±0.4	284	3.0±0.4	285	2.7±0.4	285	3.5±0.4
02-25-85	286	1.9±0.4	285	1.1±0.3	285	1.4±0.3	285	1.9±0.4
03-04-85	290	1.5±0.3	290	2.0±0.4	290	1.7±0.3	290	1.8±0.3
03-11-85	281	2.3±0.4	281	2.8±0.4	281	2.0±0.3	282	2.0±0.3
03-18-85	285	1.2±0.3	285	1.2±0.3	285	1.2±0.3	280	<0.5
03-25-85	286	2.1±0.4	286	2.4±0.4	286	1.7±0.4	286	1.8±0.4
04-01-85	288	2.1±0.4	289	2.5±0.4	286	1.9±0.3	288	2.1±0.4
1st Q mean ± s.d.		2.5±1.1		2.6±2.0		2.3±0.8		2.7±1.0
04-08-85	282	1.7±0.3	280	2.0±0.4	280	1.6±0.3	281	1.4±0.3
04-15-85	286	3.0±0.4	285	3.0±0.4	282	2.9±0.4	285	3.0±0.4
04-22-85	285	2.7±0.4	285	2.9±0.4	285	2.6±0.4	285	2.6±0.4
04-29-85	284	1.6±0.4	284	1.7±0.4	284	1.9±0.4	284	1.3±0.3
05-06-85	288	2.0±0.4	290	2.2±0.4	290	2.1±0.4	290	2.2±0.4
05-13-85	280	2.4±0.4	278	2.5±0.4	279	2.4±0.4	279	2.2±0.4
05-20-85	288	1.2±0.3	287	1.6±0.3	287	1.1±0.3	287	1.3±0.3
05-27-85	275	2.2±0.4	282	2.2±0.3	278	1.8±0.3	285	1.9±0.3
06-03-85	293	1.8±0.3	292	1.9±0.3	291	2.1±0.4	288	1.5±0.3
06-10-85	281	2.0±0.3	281	2.0±0.3	281	2.2±0.4	282	2.1±0.3
06-17-85	290	2.2±0.4	287	1.6±0.3	287	2.2±0.4	287	1.5±0.3
06-24-85	283	1.9±0.3	285	1.7±0.3	285	1.7±0.3	285	1.5±0.3
07-01-85	292	2.3±0.3	294	2.4±0.3	294	2.0±0.3	294	2.0±0.3
2nd Q mean ± s.d.		2.1±0.5		2.1±0.5		2.0±0.5		1.9±0.5

^a Iodine-131 concentrations are <0.10 pCi/m³ unless noted otherwise.

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Table 2. Airborne Particulates and Iodine-131^a (continued)

Week Ending	Near Site 5 BY-05		Oregon BY-06		Mt. Morris BY-07 (C)		Leaf River BY-08 (C)	
	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta
07-09-85	277	1.9±0.4	275	2.9±0.4	276	2.2±0.4	276	2.8±0.4
07-15-85	288	2.6±0.4	287	3.0±0.4	287	3.1±0.4	287	3.2±0.4
07-22-85	283	2.8±0.4	284	3.0±0.4	284	2.7±0.2	284	2.5±0.2
07-29-85	290	2.3±0.4	290	2.5±0.4	290	2.6±0.4	290	3.2±0.4
08-05-85	282	2.1±0.4	284	2.1±0.4	284	2.1±0.4	282	3.0±0.4
08-12-85	287	3.1±0.4	285	2.8±0.4	284	3.0±0.4	284	2.9±0.4
08-19-85	282	2.8±0.4	283	1.2±0.3	284	2.9±0.4	285	2.5±0.4
08-26-85	281	1.6±0.4	282	1.6±0.4	282	1.9±0.4	282	2.2±0.4
09-02-85	290	3.6±0.4	292	3.9±0.4	292	3.3±0.4	292	2.9±0.4
09-09-85	281	1.6±0.3	279	2.6±0.4	279	2.5±0.4	280	2.7±0.4
09-16-85	289	2.0±0.4	289	2.0±0.4	289	1.5±0.3	289	1.7±0.3
09-23-85	286	2.4±0.4	285	2.9±0.4	285	2.5±0.4	285	2.8±0.4
09-30-85	286	2.5±0.4	287	2.8±0.4	287	2.6±0.4	287	3.1±0.4
3rd Q mean ± s.d.		2.4±0.6		2.6±0.7		2.5±0.5		2.7±0.5
10-07-85	290	2.4±0.4	287	2.7±0.4	286	2.0±0.3	287	3.0±0.4
10-14-85	282	0.9±0.3	283	2.1±0.3	284	1.9±0.3	284	2.0±0.3
10-21-85	287	2.1±0.4	287	2.4±0.4	287	2.5±0.4	286	2.4±0.4
10-28-85	289	2.1±0.4	286	2.3±0.4	286	2.0±0.4	287	2.2±0.4
11-04-85	283	1.8±0.3	288	2.3±0.4	288	1.8±0.3	288	2.0±0.4
11-11-85	285	1.5±0.3	282	0.9±0.3	283	1.3±0.3	287	1.1±0.3
11-18-85	286	2.1±0.4	286	2.5±0.4	286	2.6±0.4	286	2.1±0.4
11-25-85	285	5.0±0.5	285	4.6±0.5	285	4.6±0.5	285	4.3±0.4
12-02-85	287	3.3±0.4	290	3.6±0.4	289	3.1±0.4	289	3.6±0.4
12-09-85	278	7.5±0.6	279	8.4±0.6	281	6.8±0.6	283	7.0±0.6
12-16-85	282	5.8±0.5	282	6.9±0.6	281	5.6±0.5	281	5.5±0.5
12-23-85	291	3.9±0.4	291	4.6±0.4	291	4.1±0.4	291	3.6±0.4
12-30-85	281	2.3±0.4	282	2.4±0.4	283	2.2±0.4	283	2.4±0.4
4th Q mean ± s.d.		3.1±1.9		3.5±2.1		3.1±1.7		3.2±1.6

^a Iodine-131 concentrations are <0.10 pCi/m³ unless noted otherwise.

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Table 3. Airborne Particulates and Iodine-131^a
 Collection: Weekly
 Units: 10^{-2} pCi/m³

Week Ending	BY-21		BY-22		BY-23		BY-24	
	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta
01-07-85	285	3.2±0.4	284	3.0±0.4	285	2.7±0.4	285	2.9±0.4
01-15-85	324	2.4±0.3	324	2.7±0.4	324	2.6±0.4	325	2.5±0.3
01-21-85	245	2.8±0.4	243	3.8±0.5	243	2.8±0.4	243	3.3±0.4
01-28-85	283	2.6±0.4	282	2.6±0.4	282	2.6±0.4	282	2.2±0.4
02-04-85	290	4.1±0.4	290	4.3±0.4	341	3.1±0.4	290	4.0±0.4
02-11-85	282	5.5±0.5	282	6.2±0.5	282	5.3±0.5	282	5.2±0.5
02-18-85	284	3.5±0.4	284	3.3±0.4	284	3.2±0.4	284	3.2±0.4
02-25-85	284	2.0±0.4	285	2.0±0.4	285	1.8±0.4	285	1.6±0.3
03-04-85	290	2.1±0.4	290	1.9±0.4	290	2.0±0.4	290	2.2±0.4
03-11-85	281	2.1±0.3	281	2.1±0.3	281	2.1±0.3	281	2.0±0.3
03-18-85	284	1.4±0.3	285	1.6±0.3	285	1.3±0.3	285	1.6±0.3
03-25-85	287	1.7±0.4	287	2.1±0.4	286	1.6±0.3	287	1.7±0.4
04-01-85	289	2.2±0.4	289	2.2±0.4	292	2.0±0.3	293	2.1±0.3
1st Q mean ± s.d.		2.7±1.1		2.9±1.3		2.5±1.0		2.6±1.0
04-08-85	278	1.4±0.3	278	0.7±0.3	278	1.5±0.3	277	1.5±0.3
04-15-85	285	2.6±0.4	286	2.6±0.4	286	2.7±0.4	286	2.4±0.4
04-22-85	285	1.9±0.4	279	2.7±0.4	285	2.8±0.4	285	2.7±0.4
04-29-85	284	1.5±0.4	284	1.9±0.4	284	1.2±0.3	284	1.6±0.4
05-06-85	289	1.6±0.3	292	2.2±0.4	290	1.7±0.4	290	2.1±0.4
05-13-85	263	3.1±0.4	276	2.7±0.4	278	2.7±0.4	278	1.5±0.4
05-20-85	281	1.4±0.3	288	1.4±0.3	288	1.2±0.3	164 ^b	<0.8
05-27-85	280	1.8±0.3	280	2.1±0.3	280	2.1±0.3	280	2.0±0.3
06-03-85	245	2.1±0.4	293	1.6±0.3	291	1.8±0.3	291	2.2±0.4
06-10-85	238	0.8±0.3	279	2.4±0.4	282	1.9±0.3	281	2.3±0.4
06-17-85	288	1.8±0.3	287	2.3±0.4	287	2.0±0.4	286	2.0±0.4
06-24-85	286	1.5±0.3	261	1.8±0.3	285	2.0±0.3	286	1.9±0.3
07-01-85	278	1.9±0.3	297	2.0±0.3	293	2.1±0.3	293	2.3±0.3
2nd Q mean ± s.d.		1.8±0.6		2.0±0.6		2.0±0.5		2.0±0.4

^a Iodine-131 concentrations are <0.10 pCi/m³ unless noted otherwise.

^b Pump stopped due to broken vanes; they were replaced 05-20-85.

BYRON

Table 3. Airborne Particulates and Iodine-131^a (continued)

Week Ending	BY-21		BY-22		BY-23		BY-24	
	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta	Volume (m ³)	Gross Beta
07-08-85	271	2.6±0.4	273	2.6±0.4	273	2.5±0.4	274	3.2±0.4
07-15-85	279	3.2±0.4	288	3.3±0.4	286	3.1±0.4	287	2.8±0.4
07-22-85	77 ^a	1.2±0.6	283	2.5±0.2	281	2.4±0.2	284	2.2±0.2
07-29-85	256	2.7±0.4	290	2.7±0.4	286	2.5±0.4	290	2.5±0.4
08-05-85	280	2.7±0.4	286	2.2±0.4	280	2.1±0.4	285	1.8±0.3
08-12-85	283	2.8±0.4	284	2.5±0.4	272	2.8±0.4	284	2.5±0.4
08-19-85	209	2.8±0.5	282	2.9±0.4	267	2.7±0.4	281	2.5±0.4
08-26-85	280	2.1±0.4	281	2.0±0.4	268	2.2±0.4	282	1.9±0.4
09-02-85	292	3.3±0.4	292	3.4±0.4	263	3.9±0.5	292	3.0±0.4
09-09-85	256	2.9±0.4	280	2.8±0.4	256	2.6±0.4	279	2.5±0.4
09-16-85	289	1.6±0.3	289	1.6±0.3	271	1.8±0.4	289	2.0±0.4
09-23-85	285	2.8±0.4	285	2.8±0.4	266	3.0±0.4	280	2.5±0.4
09-30-85	282	2.2±0.4	289	2.9±0.4	258	2.7±0.4	287	2.6±0.4
3rd Q mean ± s.d.		2.5±0.6		2.6±0.5		2.6±0.5		2.5±0.4
10-07-85	285	2.3±0.4	285	2.2±0.4	239	2.8±0.4	285	2.0±0.3
10-14-85	282	2.5±0.4	282	1.1±0.3	200	2.6±0.4	282	2.1±0.3
10-21-85	287	2.8±0.4	287	2.5±0.4	192 ^c	3.6±0.6	287	2.3±0.4
10-28-85	280	2.3±0.4	288	2.2±0.4	155 ^c	3.7±0.6	288	1.9±0.3
11-04-85	289	1.9±0.3	288	2.2±0.4	285	2.0±0.3	285	1.9±0.3
11-11-85	282	1.4±0.3	282	1.5±0.4	284	1.4±0.3	284	1.5±0.3
11-18-85	286	2.0±0.4	287	2.7±0.4	287	2.3±0.4	287	2.1±0.4
11-25-85	285	4.4±0.5	285	4.7±0.5	285	4.7±0.5	285	4.4±0.5
12-02-85	289	3.4±0.4	289	3.1±0.4	289	3.6±0.4	289	3.2±0.4
12-09-85	281	7.3±0.6	281	7.1±0.6	281	6.9±0.6	280	6.7±0.5
12-16-85	282	6.1±0.5	282	6.1±0.5	282	6.2±0.5	282	5.8±0.5
12-23-85	292	4.3±0.4	291	2.6±0.4	291	4.0±0.4	291	3.6±0.4
12-30-85	287	2.6±0.4	287	2.1±0.4	287	2.4±0.4	286	2.1±0.4
4th Q mean ± s.d.		3.3±1.7		3.1±1.8		3.6±1.6		3.0±1.6

^a Iodine-131 concentrations are <0.10 pCi/m³ unless noted otherwise.

^b Low volume due to power being turned off for construction.

^c Low volume due to timer malfunction.

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Table 4. Airborne Particulates
 Collection: Quarterly composites of weekly collections
 Units: pCi/m³

Location	Lab Code	Volume (m ³)	Sr-89	Sr-90	Gamma Isotopic ^a
<u>1st Quarter</u>					
BY-01	BYAP-1231	3777	<0.01	<0.01	<0.01
BY-02	1232	3701	<0.01	<0.01	<0.01
BY-03	1233	3411	<0.01	<0.01	<0.01
BY-04	1234	3691	<0.01	<0.01	<0.01
BY-05	1235	3716	<0.01	<0.01	<0.01
BY-06	1236	3704	<0.01	<0.01	<0.01
BY-07	1237	3707	<0.01	<0.01	<0.01
BY-08	1238	3705	<0.01	<0.01	<0.01
BY-21	1239	3708	<0.01	<0.01	<0.01
BY-22	1240	3706	<0.01	<0.01	<0.01
BY-23	1241	3760	<0.01	<0.01	<0.01
BY-24	1242	3712	<0.01	<0.01	<0.01
<u>2nd Quarter</u>					
BY-01	BYAP-1358	3811	<0.01	<0.01	<0.01
BY-02	1359	3706	<0.01	<0.01	<0.01
BY-03	1360	3694	<0.01	<0.01	<0.01
BY-04	1361	3707	<0.01	<0.01	<0.01
BY-05	1362	3707	<0.01	<0.01	<0.01
BY-06	1363	3710	<0.01	<0.01	<0.01
BY-07	1364	3703	<0.01	<0.01	<0.01
BY-08	1365	3712	<0.01	<0.01	<0.01
BY-21	1366	3580	<0.01	<0.01	<0.01
BY-22	1367	3680	<0.01	<0.01	<0.01
BY-23	1368	3707	<0.01	<0.01	<0.01
BY-24	1359	3581	<0.01	<0.01	<0.01

^a See Introduction.

BYRON

Table 4. Airborne Particulates (continued)

Location	Lab Code	Volume (m ³)	Sr-89	Sr-90	Gamma Isotopic ^a
<u>3rd Quarter</u>					
BY-01	BYAP-1468	3700	<0.01	<0.01	<0.01
BY-02	1469	3706	<0.01	<0.01	<0.01
BY-03	1470	3708	<0.01	<0.01	<0.01
BY-04	1471	3710	<0.01	<0.01	<0.01
BY-05	1472	3702	<0.01	<0.01	<0.01
BY-06	1473	3703	<0.01	<0.01	<0.01
BY-07	1474	3703	<0.01	<0.01	<0.01
BY-08	1475	3703	<0.01	<0.01	<0.01
BY-21	1476	3349	<0.01	<0.01	<0.01
BY-22	1477	3702	<0.01	<0.01	<0.01
BY-23	1478	3527	<0.01	<0.01	<0.01
BY-24	1479	3694	<0.01	<0.01	<0.01
<u>4th Quarter</u>					
BY-01	BYAP-1618	3712	<0.01	<0.01	<0.01
BY-02	1619	3723	<0.01	<0.01	<0.01
BY-03	1620	3727	<0.01	<0.01	<0.01
BY-04	1621	3713	<0.01	<0.01	<0.01
BY-05	1622	3706	<0.01	<0.01	<0.01
BY-06	1623	3708	<0.01	<0.01	<0.01
BY-07	1624	3710	<0.01	<0.01	<0.01
BY-08	1625	3717	<0.01	<0.01	<0.01
BY-21	1626	3707	<0.01	<0.01	<0.01
BY-22	1627	3714	<0.01	<0.01	<0.01
BY-23	1628	3357	<0.01	<0.01	<0.01
BY-24	1629	3711	<0.01	<0.01	<0.01

^a See Introduction.

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Table 5. Gamma Radiation, as Measured by Thermoluminescent Dosimeters (TLDs)

STANDARD RADIOLOGICAL MONITORING PROGRAM				
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
Date Placed:	12-31-84	04-01-85	07-01-85	09-30-85
Date Removed:	04-01-85	07-01-85	09-30-85	12-30-85
Days in the Field:	91	91	91	91
Location	Average mR/Qtr.			
<u>Offsite Indicator Locations</u>				
BY-01 - Byron	12.3±0.7	12.2±2.6	11.4±0.3	14.6±1.5
BY-03 - Nearsite East	12.9±0.6	13.7±0.2	14.2±1.0	15.6±1.1
BY-04 - Paynes Point	13.7±0.7	16.7±4.5	14.8±1.0	14.5±1.8
BY-05 - Nearsite South	13.7±0.7	14.0±2.6	14.2±1.9	15.1±1.5
BY-06 - Oregon	11.4±0.7	12.0±1.1	12.0±0.6	10.7±2.0
Mean ± s.d.	12.8±1.0	14.2±1.9	13.3±1.5	14.1±2.0
<u>Onsite Indicator Locations</u>				
BY-21 - Onsite North	11.8±0.4	10.5±0.2	12.2±1.2	20.0±2.5
BY-22 - Real Est. Office	14.7±0.7	12.5±0.6	16.1±2.2	34.3±1.9
BY-23 - Onsite South	13.3±0.4	11.0±0.7	14.9±0.3	30.7±3.9
BY-24 - Met. Tower	13.4±0.4	11.8±0.6	15.0±0.7	23.8±2.0
2nd Qtr mean ± s.d.	13.3±1.2	11.4±0.9	14.5±1.6	27.2±6.5
<u>Background Locations</u>				
BY-02 - Stillman Valley	12.7±0.7	13.0±0.8	12.3±0.4	16.4±1.1
BY-07 - Mt. Morris	12.8±0.7	15.3±3.1	12.8±0.3	16.7±1.5
BY-08 - Leaf River	10.9±0.6	14.2±1.5	12.7±0.4	10.8±1.3
Mean ± s.d.	12.1±1.1	14.2±1.2	12.6±0.3	14.6±3.3

BYRON

Table 5. Gamma Radiation, as Measured by TLDs (continued)

SPECIAL PROGRAM				
Inner Ring, Near Site Boundary, Indicator Locations				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Date Placed:	01-07-85	04-01-85	07-01-85	09-30-85
Date Removed:	04-01-85	07-01-85	09-30-85	12-30-85
Days in the Field:	84	91	91	91
Location	Average mR/Qtr.			
BY-101-1	14.8±0.6	26.9±1.0 ^a	16.2±0.1	19.5±1.2
BY-101-2	14.9±0.4	15.0±0.9	17.1±0.7	20.7±3.1
BY-102-1	14.0±0.5	13.9±0.6	17.3±0.5	28.5±2.8
BY-102-2	12.5±0.7	12.7±0.9	16.2±0.7	24.2±5.8
BY-103-1	15.0±0.9	13.6±0.6	15.9±0.5	18.1±1.1
BY-103-2	14.9±0.9	17.3±0.6	15.5±1.0	21.6±1.0
BY-104-1	14.2±0.2	11.8±0.8	20.7±0.6	20.4±4.1
BY-104-2	15.7±2.8	24.4±1.4 ^a	16.2±1.2	18.8±7.0
BY-105-1	16.3±5.8	13.7±0.6	16.2±0.8	20.5±1.5
BY-105-2	13.3±0.8	15.1±1.0	16.5±0.8	15.8±2.2
BY-106-1	23.4±2.6 ^a	13.8±0.8	16.4±0.7	17.2±1.2
BY-106-2	13.3±2.0	25.7±3.3 ^a	17.3±3.4	18.2±8.0
BY-107-1	21.3±1.2 ^a	14.7±1.1	16.0±0.5	19.3±2.1
BY-107-2	14.4±0.6	16.1±0.6 ^a	16.9±0.9	21.7±7.4
BY-108-1	16.3±0.8	13.1±0.2	16.1±0.7	22.8±2.0
BY-108-2	14.0±0.8	13.2±0.6	14.8±0.7	20.3±5.4
BY-109-1	28.2±4.5 ^a	19.8±0.8	16.1±0.7	20.3±5.4
BY-109-2	13.1±0.3	12.5±0.2	15.0±0.8	17.8±1.5
BY-110-1	21.0±1.1 ^a	28.1±6.9 ^a	15.9±0.9	22.9±1.6
BY-110-2	13.0±1.6	12.4±0.7	15.2±0.5	23.3±6.8
BY-111-1	24.8±1.5 ^a	13.0±0.7	15.9±0.7	16.6±1.7
BY-111-2	12.1±0.4	14.9±0.3 ^a	16.4±0.4	16.8±1.2
BY-112-1	20.0±5.3	13.0±0.6	15.9±0.7	17.3±1.4
BY-112-2	13.4±1.4	15.3±1.0	13.9±0.7	22.3±2.4
BY-113-1	19.0±1.1 ^a	13.3±0.8	14.7±0.5	12.5±1.4
BY-113-2	12.7±1.2	20.2±1.3	14.2±0.3	16.9±2.0
BY-114-1	14.6±0.9	13.2±0.3	12.6±0.4	15.9±1.5
BY-114-2	13.2±0.6	13.8±0.9	14.5±2.0	17.6±4.7
BY-115-1	16.8±0.2	15.6±0.6	15.9±0.6	13.4±1.6
BY-115-2	12.5±0.8	15.1±1.1	14.4±0.8	15.8±1.6
EY-116-1	13.7±1.7	14.4±0.7	12.8±0.1	18.6±1.2
BY-116-2	12.1±0.7	11.8±0.3	14.2±0.1	15.4±1.5
Mean ± s.d.	14.3±1.8	14.3±2.1	15.7±1.5	19.1±3.3

^a Chips damaged (white color); excluded from the mean.

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Table 5. Gamma Radiation, as Measured by TLDs (continued)

SPECIAL PROGRAM				
<u>Outer Ring, Near 5 Mile Radius, Indicator Locations</u>				
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
Date Placed:	12-31-84	04-01-85	07-01-85	09-30-85
Date Removed:	04-01-85	07-01-85	09-30-85	12-30-85
Days in the Field:	91	91	91	91
Location	Average mR/Qtr.			
BY-201-1	18.9±0.9	13.5±0.8	15.5±0.9	15.4±1.1
BY-201-2	13.9±0.7	46.4±3.1 ^a	19.8±1.2	16.5±1.2
BY-202-1	15.1±1.6	11.7±0.6	14.1±0.9	15.5±1.0
BY-202-2	13.9±1.1	27.4±3.9	15.9±0.7	16.3±5.4
BY-203-1	13.6±3.7	12.5±1.2	11.8±0.4	17.9±1.6
BY-203-2	12.6±0.2	12.2±0.8	15.3±1.2	16.2±1.2
BY-204-1	14.0±0.9	25.5±0.6	27.1±4.1	16.0±2.9
BY-204-2	13.9±0.3	13.4±0.6	16.0±0.4	20.0±2.9
BY-205-1	12.8±0.4	20.5±1.4	15.5±0.8	22.7±2.9
BY-205-2	13.8±0.9	12.2±0.7	16.0±0.6	21.2±1.0
BY-206-1	15.8±0.9	12.6±0.7	16.8±1.0	15.5±1.3
BY-206-2	15.2±0.9	21.4±1.6	17.9±0.5	20.0±1.1
BY-207-1	15.1±0.9	14.0±0.9	16.3±0.3	19.8±1.3
BY-207-2	14.0±0.6	15.6±0.6	16.0±0.3	20.6±1.9
BY-208-1	16.1±0.7	15.8±0.4	17.4±0.8	19.6±1.4
BY-208-2	13.9±0.5	13.4±0.8	18.0±0.8	19.3±1.7
BY-209-1	17.6±5.6	16.4±0.1	17.4±0.8	18.0±5.5
BY-209-2	14.9±2.4	13.9±0.7	16.1±0.8	16.1±1.5
BY-210-1	13.3±0.2	19.8±0.5	15.2±0.5	17.8±1.5
BY-210-2	14.1±0.9	14.9±1.0	15.2±0.5	26.2±1.8
BY-211-1	13.9±3.4	14.3±0.7	15.7±1.0	18.1±0.9
BY-211-2	13.4±2.0	13.0±0.5	16.9±0.3	24.6±2.3
BY-212-1	13.0±0.8	14.3±1.0	ND ^b	25.0±0.9
BY-212-2	13.4±0.9	17.9±0.9	17.0±0.7	30.0±2.5
BY-213-1	15.3±0.9	18.8±1.4	17.1±0.3	15.3±1.2
BY-213-2	13.9±0.2	13.1±0.6	15.6±0.4	24.7±4.5
BY-214-1	14.5±0.8	11.7±0.5	15.0±0.6	19.8±7.0
BY-214-2	13.4±0.5	17.9±0.9	15.7±0.6	27.8±3.4
BY-215-1	16.8±1.8	15.5±1.1	17.5±1.2	17.2±1.4
BY-215-2	12.6±0.9	16.9±1.0	17.8±0.2	27.1±1.2
BY-216-1	15.2±0.7	33.1±1.6 ^a	16.6±0.4	22.4±1.7
BY-216-2	14.7±0.9	15.0±0.1	16.0±0.2	22.2±1.9
Mean ± s.d.	14.5±1.4	15.4±3.3	16.6±2.4	20.1±4.2

^a Crisps damaged (white color); excluded from the mean.

^b ND = No data. TLD lost in field.

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Table 6. Precipitation
Units: (pCi/l)

MONTHLY COLLECTIONS				
Collection Period	Lab Code	Gross Beta	Lab Code	Gross Beta
	<u>Reeverts Pine Hill Dairy Farm</u>		<u>Kenneth Druien Farm</u>	
		BY-15		BY-16
January, 85	BYP-597 ^a	NA ^a	BYP-598	<15.7
February, 85	615	<14.4	616,7	<14.4
March, 85	620	<11.6	621	12.2±6.6
April, 85	676	14.0±7.1	677	<11.5
May, 85	690	44.1±8.8	691	146.2±13.5
June, 85	700	<12.0	701	13.4±7.3
July, 85	743	16.0±5.1	744	10.5±4.9
August, 85	754	8.7±1.8	755	14.3±2.1
September, 85	786	10.1±4.9	787	<9.0
October, 85	807,8	2.0±1.1	809	1.8±1.0
November, 85	816	<6.8	817	<6.8
December, 85	841	NA	842	NA
	<u>Bosecker/Lingel Dairy Farm</u>		<u>Ed Seabold Farm</u>	
		BY-17		BY-20
January, 85	BYP-599	22.8±9.5	BYP-600	NA
February, 85	618	<14.4	619	<14.4
March, 85	622	<11.6	623	<11.6
April, 85	678	<11.5	679	<11.6
May, 85	692	<11.8	693	29.8±7.9
June, 85	702	<12.0	703	<12.0
July, 85	745	33.1±5.9	746	73.7±7.5
August, 85	756	14.7±2.1	757	32.5±2.7
September, 85	784,5	9.3±4.9	788	<9.0
October, 85	810	<1.7	811	2.1±1.0
November, 85	818	<6.8	819	<6.8
December, 85	843	<8.4	844	<8.4

^a NA = Not analyzed; not enough sample for analysis. Sample was reserved for quarterly composite.

BYRON

Table 6. Precipitation (continued)

QUARTERLY COMPOSITES OF MONTHLY COLLECTIONS					
Composite Period	Lab Code	Sr-89	Sr-90	Tritium	Gamma Isotopic ^a
<u>J. A. Reeverts Dairy Farm BY-15</u>					
1st Quarter, 85	BYP-626,7	<10	2.2±0.5	<200	<20
2nd Quarter, 85	718	<10	<2	<200	<20
3rd Quarter, 85	791	<10	<2	<200	<20
4th Quarter, 85	845	<10	<2	<200	<20
<u>K. Druien Dairy Farm BY-16</u>					
1st Quarter, 85	BYP-628	<10	<2	<200	<20
2nd Quarter, 85	719	<10	<2	<200	<20
3rd Quarter, 85	792	<10	<2	<200	<20
4th Quarter, 85	846,7	<10	<2	<200	<20
<u>Bosecker/Lingel Dairy Farm BY-17</u>					
1st Quarter, 85	BYP-629	<10	<2	<200	<20
2nd Quarter, 85	720	<10	<2	<200	<20
3rd Quarter, 85	793	<10	<2	<200	<20
4th Quarter, 85	848	<10	<2	<200	<20
<u>E. Seabold Dairy Farm BY-20</u>					
1st Quarter, 85	BYP-630	<10	<2	<200	<20
2nd Quarter, 85	721	<10	<2	<200	<20
3rd Quarter, 85	794	<10	<2	<200	<20
4th Quarter, 85	849	<10	<2	<200	<20

^a See Introduction.

BYRON

Table 7. Milk
 Collection: Monthly; semimonthly during grazing season (May -
 October)
 Units: pCi/l

Collection Date	Lab Code	I-131	Sr-89	Sr-90	Cs-134	Cs-137	Other Gammas ^a
<u>J. A. Reeverts Dairy Farm BY-15</u>							
01-15-85	BYMI-67	<1.0	<10	<2	<5	<5	<10
02-11-85	135	<1.0	<10	<2	<5	<5	<10
03-04-85	172	<1.0	<10	<2	<5	<5	<10
04-01-85	265	<1.0	<10	<2	<5	<5	<10
05-06-85	385	<0.5	<10	2.6±0.6	<5	<5	<10
05-20-85	491	<0.5	<10	2.6±0.2	<5	<5	<10
06-03-85	595	<0.5	<10	2.7±0.7	<5	<5	<10
06-17-85	695	<0.5	<10	3.9±0.7	<5	<5	<10
07-01-85	824	<0.5	<10	2.5±0.7	<5	<5	<10
07-15-85	935	<0.5	<10	2.6±0.7	<5	<5	<10
08-05-85	1097	<0.5	<10	2.8±0.6	<5	<5	<10
08-19-85	1199	<0.5	<10	3.4±0.6	<5	<5	<10
09-02-85	1308	<0.5	<10	3.4±0.7	<5	<5	<10
09-16-85	1424	<0.5	<10	3.0±0.6	<5	<5	<10
10-07-85	1571	<0.5	<10	2.8±0.6	<5	<5	<10
10-21-85	1660	<0.5	<10	2.9±0.5	<5	<5	<10
11-04-85	1720	<0.5	<10	3.0±0.6	<5	<5	<10
12-02-85	1801	<0.5	<10	2.4±0.6	<5	<5	<10
<u>Durien Dairy Farm BY-16</u>							
01-07-85	BYMI-35	<1.0	<10	<2	<5	<5	<10
02-04-85	109	<1.0	<10	2.4±0.4	<5	<5	<10
03-04-85	173	<1.0	<10	3.2±0.8	<5	<5	<10
04-01-85	266,7	<1.0	<10	3.5±0.5	<5	<5	<10
05-06-85	386	<0.5	<10	3.1±0.6	<5	<5	<10
05-20-85	492	<0.5	<10	2.8±0.2	<5	<5	<10
06-03-85	596	<0.5	<10	2.7±0.6	<5	<5	<10
06-17-85	696	<0.5	<10	3.2±0.7	<5	<5	<10
07-01-85	825	<0.5	<10	2.4±0.6	<5	<5	<10
07-15-85	936	<0.5	<10	2.3±0.7	<5	<5	<10
08-05-85	1098	<0.5	<10	<2	<5	<5	<10
08-19-85	1200	<0.5	<10	3.3±0.7	<5	<5	<10
09-02-85	1309	<0.5	<10	2.7±0.6	<5	<5	<10
09-16-85	1425	<0.5	<10	2.3±0.5	<5	<5	<10
10-07-85	1572,3	<0.5	<10	3.3±0.4	<5	<5	<10
10-14-85	1661	<0.5	<10	3.2±0.6	<5	<5	<10
11-04-85	1721	<0.5	<10	3.0±0.6	<5	<5	<10
12-01-85	1802	<0.5	<10	2.4±0.5	<5	<5	<10

^a See Introduction.

RYRON

Table 7. Milk (continued)

Collection Date	Lab Code	I-131	Sr-89	Sr-90	Cs-134	Cs-137	Other Gammas ^a
<u>Bosecker/Lingel Dairy Farm BY-17</u>							
01-07-85	BYMI-36	<1.0	<10	2.6±0.2	<5	<5	<10
02-04-85	110	<1.0	<10	4.1±0.6	<5	<5	<10
03-04-85	174	<1.0	<10	2.8±0.7	<5	<5	<10
04-01-85	268	<1.0	<10	3.0±0.6	<5	<5	<10
05-06-85	387	<0.5	<10	3.2±0.5	<5	<5	<10
05-20-85	493	<0.5	<10	4.5±0.8	<5	<5	<10
06-03-85	597	<0.5	<10	4.0±0.7	<5	<5	<10
06-24-85	752	<0.5	<10	3.5±0.6	<5	<5	<10
07-01-85	825	<0.5	<10	3.2±0.6	<5	<5	<10
07-15-85	937,8	<0.5	<10	2.4±0.5	<5	<5	<10
08-05-85	1099	<0.5	<10	4.1±0.7	<5	<5	<10
08-19-85	1201	<0.5	<10	3.9±0.7	<5	<5	<10
09-02-85	1310	<0.5	<10	4.1±0.7	<5	<5	<10
09-16-85	1426	<0.5	<10	3.9±0.7	<5	<5	<10
10-07-85	1574	<0.5	<10	3.1±0.6	<5	<5	<10
10-14-85	1662	<0.5	<10	3.0±0.5	<5	<5	<10
11-04-85	1722	<0.5	<10	3.4±0.6	<5	<5	<10
12-02-85	1803	<0.5	<10	3.6±0.2	<5	<5	<10
<u>E. Seabold Dairy Farm BY-20</u>							
01-07-85	EYMI-37	<1.0	<10	<2	<5	<5	<10
02-04-85	111	<1.0	<10	<2	<5	<5	<10
03-04-85	175	<1.0	<10	<2	<5	<5	<10
04-01-85	269	<1.0	<10	2.9±0.6	<5	<5	<10
05-06-85	388	<0.5	<10	1.7±0.6	<5	<5	<10
05-20-85	494,5	<0.5	<10	2.2±0.5	<5	<5	<10
06-03-85	598	<0.5	<10	3.9±0.7	<5	<5	<10
06-24-85	753	<0.5	<10	2.7±0.5	<5	<5	<10
07-01-85	827	<0.5	<10	2.8±0.6	<5	<5	<10
07-15-85	939	<0.5	<10	2.5±0.7	<5	<5	<10
08-05-85	1100	<0.5	<10	2.9±0.6	<5	<5	<10
08-19-85	1202	<0.5	<10	2.8±0.6	<5	<5	<10
09-02-85	1311	<0.5	<10	2.9±0.6	<5	<5	<10
09-16-85	1427	<0.5	<10	2.8±0.6	<5	<5	<10
10-07-85	1575	<0.5	<10	1.9±0.4	<5	<5	<10
10-21-85	1663	<0.5	<10	2.4±0.5	<5	<5	<10
11-04-85	1723	<0.5	<10	1.4±0.4	<5	<5	<10
12-02-85	1804	<0.5	<10	1.9±0.5	<5	<5	<10

^a See Introduction.

BYRON

Table 8. Fish, Edible Portions.
 Collection: 3 times per year
 Unit: pCi/g wet weight

Collection Date	Lab Code	Type	Gross Beta	Pu-239	Sr-90	Cs-134	Cs-137	Other Gammas ^a
<u>Downstream BY-12</u>								
05-13-85	BYF-549	Carp (3)	3.0±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
05-20-85	558	Sheepshead (1)	1.1±0.0	<0.1	<0.1	<0.1	<0.1	<0.2
07-01-85	616	Carp (1)	3.6±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
07-01-85	620	Sucker (1)	3.9±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
10-07-85	667	Sucker (2)	3.3±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
<u>Upstream BY-13</u>								
05-13-85	BYF-550A	Carp (3)	4.5±0.2	<0.1	<0.1	<0.1	<0.1	<0.2
05-13-85	550B	Carp (3)	4.0±0.2	<0.1	<0.1	<0.1	<0.1	<0.2
05-13-85	551A	Drum (1)	2.7±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
05-13-85	551B	Catfish (1)	2.5±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
07-01-85	617	Carp (1)	3.3±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
07-01-85	618	Catfish (2)	3.3±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
10-07-85	668,9	Carp (1)	2.8±0.1	<0.1	<0.1	<0.1	<0.1	<0.2
10-07-85	670	Sucker (1)	2.8±0.1	<0.1	<0.1	<0.1	<0.1	<0.2

BYRON

Table 9. Vegetables
 Collection: Annually
 Units: pCi/g wet weight

Collection Date	Lab Code	Type	Gross Beta	Sr-89	Sr-90	I-131 ^a	Cs-134	Cs-137	Other Gammas ^b
<u>BY-19-1 966 East Weld Bark Road</u>									
08-05-85	BYVe-685	Lettuce	5.5±0.2	<0.1	<0.1	<0.03	<0.1	<0.1	<0.2
	686	Cabbage	3.4±0.1	<0.1	<0.1	<0.03	<0.1	<0.1	<0.2
	687	Broccoli	4.8±0.2	<0.1	<0.1	--	<0.1	<0.1	<0.2
	688	Potatoes	3.1±0.1	<0.1	<0.1	--	<0.1	<0.1	<0.2
<u>BY-19-2 6993 North River Road</u>									
08-05-85	BYVe-689	Onions	1.2±0.1	<0.1	<0.1	--	<0.1	<0.1	<0.2
	690	Beets	2.9±0.1	<0.1	<0.1	--	<0.1	<0.1	<0.2
	691	Carrots	2.2±0.1	<0.1	<0.1	--	<0.1	<0.1	<0.2
	692,3	Lettuce	2.8±0.1	<0.1	<0.1	<0.03	<0.1	<0.1	<0.2

^a Analysis for I-131 required for cabbage and lettuce only.

^b See Introduction.

BYRON

Table 10. Grass and Cattlefeed
Collection: Quarterly^a
Units: pCi/g wet weight

Collection Date	Type	Lab Code	Gross Beta	Sr-89	Sr-90	Cs-134	Cs-137	Other Gammas ^b
<u>J. A. Reeverts Dairy Farm BY-15</u>								
02-04-85	Silage	BYCF-172	3.8±0.2	<1	<1	<0.1	<0.1	<0.2
02-04-85	Corn	173	6.4±0.2	<1	<1	<0.1	<0.1	<0.2
05-06-85	Grass	avg-533	4.2±0.2	<1	<1	<0.1	<0.1	<0.2
07-01-85	Grass	570	3.9±0.2	<1	<1	<0.1	<0.1	<0.2
10-07-85	Grass	652	7.8±0.3	<1	<1	<0.1	<0.1	<0.2
<u>K. Durien Dairy Farm BY-16</u>								
02-04-85	Silage	BYCF-174	4.7±0.2	<1	<1	<0.1	<0.1	<0.2
02-04-85	Corn	175	1.4±0.6	<1	<1	<0.1	<0.1	<0.2
05-06-85	Grass	avg-534	4.8±0.2	<1	<1	<0.1	<0.1	<0.2
07-01-85	Grass	571	1.7±0.1	<1	<1	<0.1	<0.1	<0.2
10-07-85	Grass	653	5.7±0.2	<1	<1	<0.1	<0.1	<0.2

^a Grass is collected during summer. Cattlefeed is collected during winter.

^b See Introduction.

BYRON

Table 10. Grass and Cattlefeed (continued)

Collection Date	Type	Lab Code	Gross Beta	Sr-89	Sr-90	Cs-134	Cs-137	Other Gammas ^b
<u>Bosecker/Lingel Dairy Farm BY-17</u>								
02-04-85	Silage	BYCF-176	1.2±0.1	<1	<1	<0.1	<0.1	<0.2
02-04-85	Corn	177	5.0±0.2	<1	<1	<0.1	<0.1	<0.2
05-06-85	Grass	avg-535	5.0±0.2	<1	<1	<0.1	<0.1	<0.2
07-01-85	Grass	572	2.2±0.1	<1	<1	<0.1	<0.1	<0.2
10-07-85	Grass	654	4.5±0.2	<1	<1	<0.1	<0.1	<0.2
<u>E. Seabold Dairy Farm BY-20</u>								
02-04-85	Hay	BYCF-178,9	7.1±0.2	<1	<1	<0.1	<0.1	<0.2
02-04-85	Corn	180	2.9±0.1	<1	<1	<0.1	<0.1	<0.2
05-06-85	Grass	avg-536	3.8±0.1	<1	<1	<0.1	<0.1	<0.2
07-01-85	Grass	573	9.8±0.4	<1	<1	<0.1	<0.1	<0.2
10-07-85	Grass	655	9.3±0.3	<1	<1	<0.1	<0.1	<0.2

^a Grass is collected during summer. Cattlefeed is collected during winter.
^b See Introduction.

BYRON

Table 11. Cooling Water
Units: pCi/l

WEEKLY COLLECTIONS					
Collection Date	Lab Code	Gross Beta	Collection Date	Lab Code	Gross Beta
<u>Intake Pipe BY-10</u>					
01-07-85	BYCW-64	2.9±1.0	07-05-85	BYCW-2462	2.9±0.6
01-15-85	156	2.3±0.9	07-15-85	2645	3.4±1.0
01-21-85	ND ^a	ND ^a	07-19-85	2707	2.5±0.8
01-28-85	328	2.3±0.9	07-26-85	2767,8	<1.6
02-01-85	397	2.2±0.9	08-05-85	2878	2.3±0.9
02-08-85	506	2.5±0.9	08-12-85	3000	3.7±1.1 ^b
02-15-85	543	2.3±0.9	08-19-85	3062	3.2±1.0 ^b
02-22-85	627	2.3±0.9	08-26-85	3141	5.0±1.0
03-01-85	734	5.4±1.2	08-30-85	3241	3.7±0.9
03-11-85	829	4.7±0.9	09-06-85	3323	3.8±0.9
03-18-85	1024	4.0±0.8	09-13-85	3421	2.7±0.9
03-25-85	1102	3.3±0.8	09-20-85	3495	2.9±0.9
04-01-85	1155	<u>1.0±0.7</u>	09-27-85	3540	<u>3.6±0.9</u>
1st Qtr. mean ± s.d.		2.9±1.2	3rd Qtr. mean ± s.d.		3.3±0.7
04-08-85	1269	3.2±0.8	10-04-85	3779	3.8±0.9
04-15-85	1361	2.2±0.8	10-11-85	3862	3.8±0.9
04-22-85	1488	3.6±0.9	10-18-85	2952	6.4±0.8
04-29-85	1550	3.9±0.9	10-28-85	4013	1.8±0.9
05-06-85	1644	2.6±0.9	11-01-85	4143	8.9±1.4
05-14-85	1741	2.0±0.8	11-08-85	4231	4.2±1.1
05-20-85	1809	2.6±0.8	11-15-85	4303	3.4±1.0
05-27-85	1849	2.7±0.8	11-22-85	4350	3.5±1.1
06-03-85	1991,2	2.7±0.7	11-29-85	4435	2.7±1.0
06-10-85	2102	<1.5	12-06-85	4570	3.3±1.0
06-17-85	2159	2.4±0.9	12-13-85	4634	3.0±0.9
06-24-85	2294	2.1±0.9	12-23-85	4704	4.3±1.0
07-01-85	2292	<u>7.8±1.0</u>	12-27-85	4879	<u>2.0±1.1</u>
2nd Qtr. mean ± s.d.		3.2±1.6	4th Qtr. mean ± s.d.		3.9±1.9

^a ND = No data; sample was not provided by the station.

^b Samples were reanalyzed due to suspected contamination.

BYRON

Table 11. Cooling Water (continued)

WEEKLY COLLECTIONS					
Collection Date	Lab Code	Gross Beta	Collection Date	Lab Code	Gross Beta
<u>Discharge Pipe BY-11</u>					
01-07-85	BYCW-65,6	4.5±0.8	07-05-85	BYCW-2463	9.7±1.4
01-15-85	157	4.7±1.2	07-15-85	2646	3.4±1.2
01-21-85	204	5.1±1.2	07-19-85	2708	4.9±0.8
01-28-85	329	4.7±1.2	07-26-85	2769	7.7±1.3
02-01-85	398	2.4±1.1	08-05-85	2879	11.0±1.4
02-08-85	507,8	3.2±0.8	08-12-85	3001,2	205.6±3. a
02-15-85	544	3.4±1.2	08-19-85	3063	6.2±1.3
02-22-85	628	3.8±1.2	08-26-85	3142	6.7±1.3
03-01-85	735	6.1±1.4	08-30-85	3242	742.6±65.7
03-11-85	830	6.2±1.4	09-06-85	3324	1043.0±76.1
03-18-85	1025	4.0±1.0	09-13-85	3422	4.1±0.8
03-25-85	1103	3.8±1.0	09-20-85	3496	8.4±1.1
04-01-85	1156	2.2±1.0	09-27-85	3541,2	7.2±1.0
1st Qtr. mean ± s.d.		4.2±1.2	3rd Qtr. mean ± s.d.		158.5±336.1
04-03-85	1270	4.0±1.3	10-04-85	3780	11.9±1.5
04-15-85	1362	3.6±1.1	10-11-85	3863	9.1±1.4
04-22-85	1489	4.0±1.1	10-18-85	3953	19.6±1.8
04-29-85	1551	4.3±1.1	10-28-85	4014	3.3±1.2
05-06-85	1645	4.8±1.1	11-01-85	4144	9.4±1.4
05-14-85	1742	8.2±1.3	11-08-85	4232	3.7±1.0
05-20-85	1810,11	6.0±0.8	11-15-85	4304	118.5±4.1
05-27-85	1850	3.7±1.0	11-22-85	4351	35.4±2.3
06-03-85	1993	12.8±1.6	11-29-85	4436	4.9±1.1
06-10-85	2103	7.8±1.0	12-06-85	4571	38.0±2.3
06-17-85	2160,1	4.6±0.8	12-13-85	4635	19.3±1.8
06-24-85	2225	9.3±1.5	12-23-85	4705	21.8±1.9
07-01-85	2293	6.7±1.4	12-27-85	4880	50.4±2.6
2nd Qtr. mean ± s.d.		6.1±2.8	4th Qtr. mean ± s.d.		26.6±31.2

^a Sample was reanalyzed. Entry is an average of the two results.

BYRON

Table 11. Cooling Water (continued)

MONTHLY COMPOSITES OF WEEKLY COLLECTIONS							
Composite Period	Location	Sr-89	Sr-90	Cs-134	Cs-137	Other Gammas ^a	Tritium
<u>Intake Pipe BY-1J</u>							
January, 85	BYCW-258	<10	<2	<10	<10	<20	<200
February, 85	642	<10	<2	<10	<10	<20	<200
March, 85	849	<10	<2	<10	<10	<20	<200
April, 85	1398	<10	<2	<10	<10	<20	<200
May, 85	1890	<10	<2	<10	<10	<20	<200
June, 85	2356	<10	<2	<10	<10	<20	<200
July, 85	2808	<10	<2	<10	<10	<20	<200
August, 85	3158	<10	<2	<10	<10	<20	250±100
September, 85	3551	<10	<2	<10	<10	<20	<200
October, 85	4092	<10	<2	<10	<10	<20	<200
November, 85	4466	<10	2.2±0.6	<10	<10	<20	<200
December, 85	4719,20	<10	<2	<10	<10	<20	<200
<u>Discharge Pipe BY-11</u>							
January, 85	BYCW-259	<10	<2	<10	<10	<20	<200
February, 85	643	<10	<2	<10	<10	<20	<200
March, 85	850	<10	<2	<10	<10	<20	<200
April, 85	1399	<10	<2	<10	<10	<20	310±110
May, 85	1891	<10	<2	<10	<10	<20	2120±140
June, 85	2357,8	<10	<2	<10	<10	<20	8120±130
July, 85	2809	<10	<2	<10	<10	<20	220±100
August, 85	3159,60	<10	<2	<10	<10	b	5910±180
September, 85	3552	<10	<2	<10	<10	c	5630±260
October, 85	4093	<10	<2	<10	<10	<20	7410±180
November, 85	4467	43.3±5.0	<2	<10	<10	<20 ^d	1860±120
December, 85	4721	<10	<2	<10	<10	<20 ^e	2990±190

^a See Introduction.

^b Co-58: 1810±53; Co-60: 155±16; Mn-54: 234±18.

^c Co-58: 2060±36; Co-60: 219±8; Mn-54: 167±7.

^d Co-58: 190±8.

^e Co-58: 147±21.

BYRON

Table 12. Surface Water
Units: pCi/l

WEEKLY COLLECTION						
Collection Date	Woodland Creek BY-09		Downstream BY-12		Upstream BY-13 (C)	
	Lab Code	Gross Beta	Lab Code	Gross Beta	Lab Code	Gross Beta
01-07-85	BYSW-67	2.8±0.9	BYSW-68	3.8±1.2	BYSW-69	4.6±1.0
01-15-85	153	2.5±0.9	154	3.8±1.2	155	2.2±0.9
01-21-85	201	<1.6	202	2.5±1.2	203	2.7±1.0
01-28-85	324	1.6±0.9	325,6	2.9±0.8	327	2.1±0.9
02-04-85	394	1.7±0.9	395	2.2±1.1	396	2.6±1.0
02-11-85	503	<1.6	504	2.6±1.1	505	1.6±0.9
02-18-85	539,40	<1.6	541	2.7±1.1	542	3.0±1.0
02-25-85	624	4.0±1.0	625	5.8±1.3	626	6.8±1.1
03-04-85	731	5.2±0.9	732	6.3±1.4	733	5.5±0.9
03-11-85	826	3.3±0.8	827	3.9±1.0	828	3.3±0.8
03-18-85	1021	3.4±1.1	1022	3.2±1.3	1023	3.4±0.8
03-25-85	1098,9	2.9±1.1	1100	3.2±1.0	1101	3.3±0.8
04-01-85	1151,2	2.6±0.7	1153	3.3±1.0	1154	3.3±1.0
1st Qtr. mean ± s.d.		3.0±1.1		3.6±1.2		3.4±1.4
04-08-85	BYSW-1265	1.8±1.0	BYSW-1266	2.7±1.0	BYSW-1267,8	2.4±0.7
04-15-85	1358	2.3±1.0	1359	3.5±1.2	1360	2.7±0.9
04-22-85	1484	2.8±0.8	1485	2.9±1.2	1486,7	2.6±0.7
04-29-85	1547	1.8±1.0	1548	2.7±1.2	1549	2.6±1.0
05-06-85	1646	1.6±0.8	1647	3.1±1.0	1648,9	2.1±0.8
05-14-85	1738	1.6±0.8	1739	2.1±0.9	1740	2.7±0.9
05-20-85	1806	1.7±0.8	1807	2.2±0.9	1808	1.7±0.7
05-27-85	1845	1.4±0.8	1846	2.6±1.0	1847	1.7±0.6
06-03-85	1988	<1.5	1989	1.7±1.1	1990	2.8±0.9
06-10-85	2098	1.1±0.6	2099,0	1.8±1.1	2101	2.0±0.8
06-17-85	2156	1.5±0.6	2157	1.7±1.1	2158	1.8±0.8
06-24-85	2229	1.9±0.6	2230	<1.8	2231,2	2.2±0.8
07-01-85	2286	1.5±1.0	2287	2.6±1.2	2288	3.6±1.1
2nd Qtr. mean ± s.d.		1.8±0.4		2.5±0.6		2.4±0.5

BYRON

Table 12. Surface Water (continued)

Collection Date	WEEKLY COLLECTION					
	Woodland Creek BY-09		Downstream BY-12		Upstream BY-13 (C)	
	Lab Code	Gross Beta	Lab Code	Gross Beta	Lab Code	Gross Beta
07-08-85	BYSW-2459	4.7±1.1	BYSW-2460	3.4±1.3	BYSW-2461	2.2±1.0
07-15-85	2641	2.8±1.0	2642	2.2±1.2	2643,4	1.7±0.9
07-22-85	2704	<1.3	2705	2.3±0.9	2706	1.5±0.7
07-29-85	2764	<1.2	2765	5.8±1.2	2766	1.8±0.8
08-05-85	2875	<1.4	2876	3.9±1.1 ^a	2877	2.7±1.0
08-12-85	2997	<1.4	2998	3.2±1.0 ^a	2999	3.4±1.0 ^a
08-19-85	3059	5.5±1.0	3060	18.0±1.7	3061	13.2±1.3
08-26-85	3138	5.0±0.9	3139	3.5±1.1 ^a	3140	2.1±1.1 ^a
09-02-85	3237	2.0±0.8	3238	3.1±1.1	3239,40	2.7±0.6
09-09-85	3319	2.3±0.8	3320	2.2±1.0	3321	4.1±0.9
09-16-85	3423	3.5±0.9	3424	3.7±1.0	3425	3.2±0.6
09-23-85	3492	3.9±0.6	3493	4.4±0.8	3494	3.4±0.6
09-30-85	3537	2.0±0.8	3538	3.8±1.1	3539	2.1±0.6
3rd Qtr. mean ± s.d.		3.4±1.3		4.6±4.2		3.4±3.0
10-07-85	BYSW-3781	3.4±0.9	BYSW-3782	4.4±1.1	BYSW-3783	2.2±0.8
10-14-85	3859	3.4±0.9	3860	3.2±1.0	3861	3.4±0.9
10-21-85	3948,9	4.5±0.7	3950	3.1±1.0	3951	4.2±0.9
10-28-85	4010	2.2±0.8	4011	2.8±1.0	4012	3.3±0.9
11-04-85	4139	4.0±1.3	4140,1	3.8±1.2	4142	2.9±1.3
11-11-85	4228	2.3±1.2	4229	4.2±1.3	4230	2.1±1.2
11-18-85	4299,300	2.8±0.8	4301	3.6±1.1	4302	2.8±1.0 ^a
11-25-85	4346	2.8±1.0	4347	2.2±1.0	4348,9	3.5±0.8
12-02-85	4432	3.3±0.9	4433	4.1±1.0	4434	5.6±1.1
12-09-85	4566,7	2.0±0.6	4568	3.1±0.9	4569	2.6±0.9
12-16-85	4630,1	2.8±0.6	4632	4.3±1.0	4633	2.0±0.9
12-23-85	4700,1	1.5±0.6	4702	2.2±0.9	4703	1.7±0.8
12-30-85	4876	<1.8	4877	1.0±1.0	4878	1.7±1.1
4th Qtr. mean ± s.d.		2.9±0.8		3.2±1.0		3.5±2.4

^a Samples were reanalyzed due to suspected contamination.

BYRON

Table 12. Surface Water (continued)

MONTHLY COMPOSITES OF WEEKLY COLLECTIONS				
Composite Period	Lab Code	Cs-134	Cs-137	Other Gammas ^a
<u>Woodland Creek BY-09</u>				
January, 85	BYSW-254	<10	<10	<20
February, 85	638	<10	<10	<20
March, 85	846	<10	<10	<20
April, 85	1395	<10	<10	<20
May, 85	1886	<10	<10	<20
June, 85	2353	<10	<10	<20
July, 85	2805	<10	<10	<20
August, 85	3155	<10	<10	<20
September, 85	3548	<10	<10	<20
October, 85	4089	<10	<10	<20
November, 85	4463	<10	<10	<20
December, 85	4716	<10	<10	<20
<u>Downstream BY-12</u>				
January, 85	BYSW-255	<10	<10	<20
February, 85	639	<10	<10	<20
March, 85	847	<10	<10	<20
April, 85	1396	<10	<10	<20
May, 85	1887	<10	<10	<20
June, 85	2354	<10	<10	<20
July, 85	2806	<10	<10	<20
August, 85	3156	<10	<10	<20
September, 85	3549	<10	<10	<20
October, 85	4090	<10	<10	<20
November, 85	4464	<10	<10	<20
December, 85	4717	<10	<10	<20
<u>Upstream BY-13</u>				
January, 85	BYSW-256	<10	<10	<20
February, 85	640	<10	<10	<20
March, 85	848	<10	<10	<20
April, 85	1397	<10	<10	<20
May, 85	1888,9	<10	<10	<20
June, 85	2355	<10	<10	<20
July, 85	2807	<10	<10	<20
August, 85	3157	<10	<10	<20
September, 85	3550	<10	<10	<20
October, 85	4091	<10	<10	<20
November, 85	4465	<10	<10	<20
December, 85	4718	<10	<10	<20

^a See Introduction.

BYRON

Table 12. Surface Water (continued)

QUARTERLY COMPOSITES OF WEEKLY COLLECTIONS				
Composite Period	Code	Sr-89	Sr-90	Tritium
<u>Woodland Creek BY-09</u>				
1st Quarter, 1985	BYSW-893	<10	<2	<200
2nd Quarter, 1985	2481	<10	<2	250±110
3rd Quarter, 1985	3620	<10	<2	<200
4th Quarter, 1985	4761	<10	<2	<200
<u>Downstream BY-12</u>				
1st Quarter, 1985	BYSW-894	<10	2.9±0.8	<200
2nd Quarter, 1985	2482	<10	<2	360±110
3rd Quarter, 1985	3621	<10	<2	<200
4th Quarter, 1985	4762	<10	<2	<200
<u>Upstream BY-13(C)</u>				
1st Quarter, 1985	BYSW-895,6	<10	<2	<200
2nd Quarter, 1985	2483	<10	<2	<200
3rd Quarter, 1985	3622	<10	<2	<200
4th Quarter, 1985	4763	<10	<2	<200

BYRON

Table 13. Well Water
Units: pCi/l

QUARTERLY GRAB SAMPLES								
Collection Period	Lab Code	Gross Beta	Sr-89	Sr-90	Tritium	Cs-134	Cs-137	Other Gammas ^b
Off-Site: CECo Real Estate Office ^a BY-14								
1st Quarter, 85	BYWW-70	<2.9	<10	<2	<200	<10	<10	<20
2nd Quarter, 85	1157	<2.4	<10	<2	<200	<10	<10	<20
3rd Quarter, 85	2289	<2.8	<10	<2	290±100	<10	<10	<20
4th Quarter, 85	3784	<2.8	<10	<2	170±100	<10	<10	<20
Off-Site: Well BY-18 ^b								
01-07-85	BYWW-71	6.6±1.1	<10	<2	240±110	<10	<10	<20
04-01-85	1158	7.9±1.2	<10	<2	<200	<10	<10	<20
07-01-85	2290,1	9.0±0.9	<10	<2	210±100	<10	<10	<20
10-07-85	3785,6	6.1±0.8	<10	<2	<200	<10	<10	<20

^a See Introduction.

^b This table has been modified for the June report. Beginning in the second quarter, well water location BY-18 was collected as a quarterly grab sample.

BYRON

Table 14. Aquatic Vegetation
 Collections: 3 times per year
 Units: pCi/g wet weight

Date Collected	Lab Code	Gross Beta	Cs-134	Cs-137	Other Gammas ^a
<u>Downstream BY-12</u>					
05-06-85	BYSL-183	0.7±0.1	<0.1	<0.1	<0.2
07-01-85	206	4.9±0.2	<0.1	<0.1	<0.2
10-07-85	224	3.9±0.2	<0.1	<0.1	<0.2
<u>Upstream BY-13</u>					
05-06-85	BYSL-184	4.0±0.2	<0.1	<0.1	<0.2
07-01-85	207	8.3±0.4	<0.1	<0.1	<0.2
10-07-85	225	1.6±0.1	<0.1	<0.1	<0.2

^a See Introduction.

BYRON

Table 15. Bottom Sediments
 Collection: 3 times per year
 Units: pCi/g dry weight.

Date Collected	Lab Code	Gross Beta	Cs-134	Cs-137	Other Gammas ^a
		<u>Downstream BY-12</u>			
05-06-85	BYBS-388	8.6±2.9	<0.1	0.12±0.01	<0.2
07-01-85	446	16.5±3.0	<0.1	0.14±0.02	<0.2
10-07-85	487	8.5±2.9	<0.1	<0.1	<0.2
		<u>Upstream BY-13</u>			
05-06-85	BYBS-389	8.0±2.9	<0.1	<0.1	<0.2
07-01-85	447,8	7.6±1.9	<0.1	<0.1	<0.2
10-07-85	488	12.8±3.2	<0.1	<0.1	<0.2

^a See Introduction.

BYRON

MILCH ANIMALS AND NEAREST RESIDENCE CENSUS

BYRON

BYRON DAIRY CENSUS 1985

A. Site Boundary to 2 mi.

Lamb's Tail Acres; Huron McKiski, owner
762 East Spring Creek Road
Route 2
Oregon, Illinois

Milks 19 Cows

259* - 1.9 miles from station

B. 2 mi to 5 mi

1. Reeverts Dairy Farm
5674 N. German Church Road
Route 1
Byron, Illinois

Milks 40 Cows

037* - 2.1 miles from station

2. Ed Seabold
6021 North German Church Road
Route 1
Byron, Illinois

Milks 85 Cows

041* - 2.5 miles from station

3. J. A. Reeverts Pine Hill Dairy
5728 E. Holcomb Road
Route 1
Oregon, Illinois

Milks 54 Cows

108* - 3.2 miles from station

4. Warren Danakas
5845 East Holcomb Road
Route 1
Oregon, Illinois

Milks 8 Cows

110* - 3.3 miles from station

BYRON DAIRY CENSUS 1985 (continued)

5. Kenneth Druien
1725 N. Marri1 Road
Route 1
Oregon, Illinois

Milks 40 Cows

134* - 3.3 miles from station
6. Oltmann Dairy Farm; Richard Oltmann, owner.
1858 N. German Church Road
Route 1
Oregon, Illinois

Milks 28 Cows

178* - 2.2 miles from station
7. Bill Luepkes
2887 Brick Road
Route 1.
Oregon, Illinois

Milks 41 cows

190* - 3.7 miles from station
8. Ashelford Dairy Farm
4210 IL Route 2
Route 3
Oregon, Illinois

Milks 35 Cows

275* - 2.6 miles from station
9. CAM-DEE Farms, Gerald DeVries, Owner
5213 N. Town Hall Road
Route 3
Oregon, Illinois

Milks 32 Cows

290* - 3.3 miles from station

BYRON DAIRY CENSUS 1984 (continued)

10. Allen Camling, Jr.
285 West Camling Road
Route 3
Oregon, Illinois

Milks 35 Cows

299* - 3.4 miles from station

11. Duane Camling
50 East Camling Road
Route 3
Oregon, Illinois

Milks 26 Cows

305* - 3.2 miles from station

Major revisions over 1984: Warren Danakas' farm was added and Melvin Oltmann's farm was deleted.

- C. 1. BY-15 Milks 54 Cows
May - September -- Pasture 27 acres
Haylage, high moisture corn, and protein/mineral supplement
October - April -- Feedlot less than 2 acres
Protein/mineral supplement, corn silage, high moisture corn.
2. BY-16 Milks 40 Cows
May - September -- Pasture 28 acres
Hay, ground corn and protein/mineral supplement
October - April -- Feedlot less than 2 acres
Hay, corn silage, and protein/mineral supplement
3. BY-17 Milks 30 Cows
May - September -- Feedlot less than 2 acres
Feeding green chop, corn, and silage
- October - April -- Feedlot less than 2 acres
Dry chop, corn silage, grain
4. BY-20 Milks 85 Cows
May - September -- Feedlot 5 acres
High moisture corn and protein/mineral supplement
October - April -- Feedlot 5 acres; haylage, high moisture corn, and protein/mineral supplement.

BYRON DAIRY CENSUS 1984 (continued)

All feeds except high protein supplements grown on farms.

Census conducted by P. Coulter on August 5, 1985.

NOTE: By-20 now operated by:

Mike Lookinglong
6354 Brick Road
Route 1
Oregon, Illinois

BYRON

NEAREST RESIDENCE CENSUS, 1985

Nearest resident of the Byron Station with a five (5) mile radius.

N	1.4 miles
NNE	1.8 miles
NE	1.6 miles
ENE	1.3 miles
E	1.2 miles
ESE	1.6 miles
SE	1.3 miles
SSE	0.8 miles
S	0.7 miles*
SSW	0.6 miles
SW	0.8 miles
WSW	1.7 miles
W	1.9 miles
WNW	2.1 miles
NW	0.8 miles
NNW	1.2 miles

Census conducted by P. Coulter on August 5, 1985.

*There is a new house on Winterton Farm opposite BY-23.

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Pt. Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 1st Quarter 1985
 (County, State)

Sample Type (units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m ³)	Gross Beta 156	0.01	0.027 (1*6/117) (0.011-0.062)	By-22, Onsite 0.3 mi @ 101*	0.029 (13/13) (0.016-0.002)	0.026 (38/39) (0.012-0.051)	0
	Gamma Spec. 12	0.01	<LLD	-	-	<LLD	0
	Sr-89 12	0.01	<LLD	-	-	<LLD	0
	Sr-90 12	0.01	<LLD	-	-	<LLD	0
Airborne Iodine (pCi/m ³)	I-131 156	0.10	<LLD	-	-	<LLD	0
Gamma Background (TLDs) (mR/Otr.)	Gamma Dose	3.0	13.0 (9/9) (11.4-14.7)	By-22, Onsite 0.3 mi @ 101*	14.7 (1/1) -	12.1 (3/3) (10.9-12.8)	0
Milk (pCi/l)	I-131 12	1.0	<LLD	-	-	<LLD	0
	Gamma Spec. 12			-	-	<LLD	0
	Cs-134	5.0	<LLD	-	-	<LLD	0
	Cs-137	5.0	<LLD	-	-	<LLD	0
	Other Gammas	10.0	<LLD	-	-	<LLD	0
	Sr-89 12 Sr-90 12	10 2	<LLD 2.8 (2/9) (2.4-3.2)	By-17, Bosecker/ Lingel Farm 7.0 mi @ 53*	3.2 (3/3) (2.8-4.1)	3.2-3/3) (2.8-4.1)	0
Precipitation	Gross Beta 10	15.7 ^b	<LLD	By-17, Bosecker/ Lingel Farm 7.0 mi @ 53*	22.8 (1/3) -	22.8 (1/3) -	0
	Gamma Spec. 4	20	<LLD	-	-	<LLD	0
	Tritium 4	200	<LLD	-	-	<LLD	0
	Sr-89 4	10	<LLD	-	-	<LLD	0
	Sr-90 2	2	2.2 (1/3)	By-15, Reeverts Pine Hill Dairy 3.2 mi @ 108*	2.2 (1/3)	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 1st Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results			
				Location	Mean Range					
Cooling Water (pCi/l)	Gross Beta 25	1.0	4.2 (13/13) (2.2-6.2)	By-11, Discharge at Station	4.2 (13/13) (2.2-6.2)	2.9 (12/12) (1.0-5.4)	0			
	Gamma Spec. 6									
	Cs-134 10	<LLD	-					<LLD	0	
	Cs-137 10	<LLD	-					<LLD	0	
	Other Gammas 20	<LLD	-					<LLD	0	
	Tritium 6	200	<LLD					-	<LLD	0
	Sr-89 6	10	<LLD					-	<LLD	0
	Sr-90 6	2	<LLD					-	<LLD	0
Surface Water (pCi/l)	Gross Beta 39	1.6	3.3 (23/26) (1.6-6.3)	By-12, Downstream of Oregon Dam 4.6 mi @ 213*	3.6 (13/13) (2.2-6.3)	3.4 (13/13) (1.6-6.8)	0			
	Gamma Spec. 9									
	Cs-134 10	<LLD	-					<LLD	0	
	Cs-137 10	<LLD	-					<LLD	0	
	Other Gammas 20	<LLD	-					<LLD	0	
	Tritium 3	200	<LLD					-	<LLD	0
	Sr-89 3	10	<LLD					-	<LLD	0
	Sr-90 3	2	<LLD	By-12, Downstream of Oregon Dam 4.6 mi @ 213*	2.9 (1/1)	2.9 (1/1)	0			

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 1st Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results	
				Location	Mean Range			
Well Water (pCi/l)	Gross Beta 2	2.9	6.1 (1/2)	By-18, McCoy Farmstead 1.25 mi @ 235°	6.1 (1/2)	<LLD	0	
	Gamma Spec. 2		-		-			
	Cs-134 10		<LLD		-	-	<LLD	0
	Cs-137 10		<LLD		-	-	<LLD	0
	Other Gammas 20		<LLD		-	-	<LLD	0
	Tritium 2	200	240 (1/2)		240 (1/2)	<LLD	0	
	Sr-89 2	10	<LLD		-	-	<LLD	0
	Sr-90 2	2	<LLD		-	-	<LLD	0
Cattlefeed & Grass (pCi/g wet)	Gross Beta 8	1.0	4.4 (6/6) (1.4-7.1)	By-15, Reverts Pine Hill Dairy 3.2 mi @ 108°	5.1 (2/2) (3.8-6.4)	3.1 (2/2) (1.2-5.0)	0	
	Gamma Spec. 8							
	Cs-134 0.1		<LLD		-	-	<LLD	0
	Cs-137 0.1		<LLD		-	-	<LLD	0
	Other Gammas 0.2		<LLD		-	-	<LLD	0
	Sr-89 8	1.0	<LLD		-	-	<LLD	0
	Sr-90 8	1.0	<LLD		-	-	<LLD	0

^a Mean and range based on detectable measurements only. Fraction indicated in parenthesis.

^b LLD value dependent on volume of sample available for analysis.

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ngle, Illinois Reporting Period 2nd Quarter 1995
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^d Range	Location with Highest Quarterly Mean		Control Locations Mean ^d Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m ³)	Gross Beta 156	0.01	0.020 (116/117) (0.007-0.032)	By-03, Nearsite - East 6.2 mi @ 56°	2.1 (13/13) (0.014-0.028)	0.020 (39/39) (0.011-0.033)	0
				By-05, Nearsite - South, 3.6 mi @ 180°	2.1 (13/13) (0.012-0.030)		
				By-06, Oregon 4.6 mi @ 213°	2.1 (13/13) (0.016-0.030)		
	Gamma Spec. 12	0.01	<LLD	-	-	<LLD	0
	Sr-89 12	0.01	<LLD	-	-	<LLD	0
	Sr-90 12	0.01	<LLD	-	-	<LLD	0
Airborne Iodine (pCi/m ³)	I-131 156	0.10	<LLD	-	-	<LLD	0
Gamma Background (TLDs) (mR/Qtr.)	Gamma Dose	3.0	13.0 (9/9) (10.5-16.7)	By-04, Paynes Point 4.5 mi @ 140°	16.7 (1/1) -	14.2 (3/3) (13.0-15.3)	0
Milk (pCi/l)	I-131 20	1.0/0.5 ^b	<LLD	-	-	<LLD	0
	Gamma Spec. 20						
	Cs-134	5.0	<LLD	-	-	<LLD	0
	Cs-137	5.0	<LLD	-	-	<LLD	0
	Other Gammas	10.0	<LLD	-	-	<LLD	0
	Sr-89 20	10	<LLD	-	-	<LLD	0
	Sr-90 20	2	2.9 (14/15) (1.7-3.9)	-	-	3.6 (5/5) (3.0-4.5)	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 2nd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Precipitation	Gross Beta 12	12.0 ^c	49.5 (5/9) (13.4-146.2)	By-16, Kenneth Druen Farm 3.3 mi # 134*	79.8 (2/3) (13.4-146.2)	<LLD	0
	Gamma Spec. 4	20	<LLD	-	-	<LLD	0
	Tritium 4	200	<LLD	-	-	<LLD	0
	Sr-89 4	10	<LLD	-	-	<LLD	0
	Sr-90 4	2	<LLD	-	-	<LLD	0
Cooling Water (pCi/l)	Gross Beta 26	1.0	6.1 (13/13) (3.6-12.8)	By-11, Discharge at Station	6.1 (13/13) (3.6-12.8)	3.2 (12/13) (2.0-7.8)	0
	Gamma Spec. 6						
	Es-134 10		<LLD	-	-	<LLD	0
	Es-137 10		<LLD	-	-	<LLD	0
	Other Gammas 20		<LLD	-	-	<LLD	0
	Tritium 6	200	3520 (3/3) (310-8120)	By-11, Discharge at Station	3520 (3/3) (310-8120)	<LLD	0
	Sr-89 6	10	<LLD	-	-	<LLD	0
	Sr-90 6	2	<LLD	-	-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 2nd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results	
				Location	Mean Range			
Surface Water (pCi/l)	Gross Beta 39	2.0	2.2 (24/26) (1.1-3.5)	By-12, Downstream at Oregon Dam 4.6 mi @ 213*	2.5 (12/13) (1.7-3.5)	2.4 (13/13) (1.7-3.6)	0	
	Gamma Spec. 9							
	Cs-134 10		<LLD		-	-	<LLD	0
	Cs-137 10		<LLD		-	-	<LLD	0
	Other Gammas 20		<LLD		-	-	<LLD	0
	Tritium 3 200		305 (2/2) (250-360)		-	-	<LLD	0
	Sr-89 3 10		<LLD		-	-	<LLD	0
	Sr-90 3 2		<LLD		-	-	<LLD	0
Well Water (pCi/l)	Gross Beta 2 2.4		7.9 (1/1) -	By-18, McCoy Farmstead 1.25 mi @ 235*	7.9 (1/1)	None	0	
	Gamma Spec. 2							
	Cs-134 10		<LLD		-	-		0
	Cs-137 10		<LLD		-	-		0
	Other Gammas 20		<LLD		-	-		0
	Tritium 2 200		<LLD		-	-		0
	Sr-89 2 10		<LLD		-	-		0
	Sr-90 2 2		<LLD		-	-		0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 2nd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Fish (pCi/g wet)	Gross Beta 6	1.0	2.0 (2/2) (1.1-3.0)	By-13, Upstream of Oregon Dam 4.3 mi B 213*	3.4 (4/4) (2.5-4.5)	3.4 (4/4) (2.5-4.5)	0
	Gamma Spec. 6						
	Cs-134 0.1	<LLD	-		-	<LLD	0
	Cs-137 0.1	<LLD	-		-	<LLD	0
	Other Gammas 0.2	<LLD	-		-	<LLD	0
	Sr-89 6 1.0	<LLD	-		-	<LLD	0
	Sr-90 6 1.0	<LLD	-		-	<LLD	0
Cattlefeed & Grass (pCi/g wet)	Gross Beta 4	1.0	4.3 (3/3) (3.8-4.8)	By-20, Seabold Farm 2.5 mi B 41*	4.8 (1/1) -	5.0 (1/1) -	0
	Gamma Spec. 4						
	Cs-134 0.1	<LLD	-		-	<LLD	0
	Cs-137 0.1	<LLD	-		-	<LLD	0
	Other Gammas 0.2	<LLD	-		-	<LLD	0
	Sr-89 4 1.0	<LLD	-		-	<LLD	0
	Sr-90 4 1.0	<LLD	-		-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 2nd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results	
				Location	Mean Range			
Aquatic Vegetation (pCi/g wet)	Gross Beta 2	1.0	0.7 (1/1)	By-13, Upstream of Oregon Dam 4.3 mi @ 213*	4.0 (1/1)	4.0 (1/1)	0	
	Gamma Spec. 2				-	-	0	
	Cs-134	0.1	<LLD		-	-	<LLD	0
	Cs-137	0.1	<LLD		-	-	<LLD	0
	Other Gammas	0.2	<LLD		-	-	<LLD	0
Bottom Sediments (pCi/g dry)	Gross Beta 2	1.0	8.6 (1/1)	By-12, Downstream of Oregon Dam 4.6 mi @ 213*	8.6 (1/1)	8.0 (1/1)	0	
	Gamma Spec. 2				-	-	0	
	Cs-134	0.1	<LLD		-	-	<LLD	0
	Cs-137	0.1	0.12 (1/1)		By-12, Downstream of Oregon Dam 4.6 mi @ 213*	0.12 (1/1)	<LLD	0
	Other Gammas	0.2	<LLD		-	-	<LLD	0

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.

^b November - April LLD = 1.0; May - October LLD = 0.5 pCi/l.

^c LLD value dependent on volume of sample available for analysis.

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Dele, Illinois Reporting Period 3rd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m ³)	Gross Beta 156	0.01	0.025 (117/117) (0.012-0.039)	By-02, Stillman Valley 6.2 mi @ 56°	2.7 (13/13) (0.016-0.039)	0.026 (38/39) (0.015-0.039)	0
	Gamma Spec. 12	0.01	<LLD	-	-	<LLD	0
	Sr-89 12	0.01	<LLD	-	-	<LLD	0
	Sr-90 12	0.01	<LLD	-	-	<LLD	0
Airborne Iodine (pCi/m ³)	I-131 156	0.10	<LLD	-	-	<LLD	0
Gamma Background (TLDs) (mR/Qt.)	Gamma Dose	3.0	13.8 (9/9) (11.4-16.1)	By-22, Onsite 0.3 mi @ 101°	16.1 (1/1) -	12.6 (3/3) (12.3-12.8)	0
Milk (pCi/l)	I-131 24	0.5	<LLD	-	-	<LLD	0
	Gamma Spec. 24						
	Cs-134	5.0	<LLD	-	-	<LLD	0
	Cs-137	5.0	<LLD	-	-	<LLD	0
	Other Gammas	10.0	<LLD	-	-	<LLD	0
	Sr-89 24	10	<LLD	-	-	<LLD	0
Sr-90 24	2	2.8 (17/18) (2.3-3.4)	-	-	3.6 (5/5) (2.4-4.1)	0	
Precipitation	Gross Beta 12	9.0 ^b	26.2 (6/9) (10.1-73.7)	By-20, Seabold Farm 2.5 mi @ 41°	53.1 (2/3) (32.5-73.7)	19.0 (3/3) (9.3-33.7)	0
	Gamma Spec. 4	20	<LLD	-	-	<LLD	0
	Tritium 4	200	<LLD	-	-	<LLD	0
	Sr-89 4	10	<LLD	-	-	<LLD	0
	Sr-90 4	2	<LLD	-	-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 3rd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly n		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Cooling Water (pCi/l)	Gross Beta	1.6	158.5 (13/13) (3.4-1043)	By-11, Discharge at Station	158.5 (13/13) (3.4-1043)	3.3 (12/13) (2.3-5.0)	3
	Gamma Spec. 6						
	Cs-134	10	<LLD	-	-	<LLD	0
	Cs-137	10	<LLD	-	-	<LLD	0
	Mn-54	10	200 (2/3) (167-234)	By-11, Discharge at Station	200 (2/3) (167-234)	<LLD	2
	Co-58	10	1935 (2/3) (1810-2060)	By-11, Discharge at Station	1935 (2/3) (1810-2060)	<LLD	2
	Co-60	10	182 (2/3) (155-219)	By-11, Discharge at Station	182 (2/3) (155-219)	<LLD	2
	Other Gammas	20	<LLD	-	-	<LLD	0
	Tritium 6	200	3920 (3/3) (220-5910)	By-11, Discharge at Station	3920 (3/3) (220-5910)	<LLD	3
	Sr-89 6	10	<LLD	-	-	<LLD	0
Sr-90 6	2	<LLD	-	-	<LLD	0	
Surface Water (pCi/l)	Gross Beta 39	1.4	4.1 (22/26) (2.2-18.0)	By-12, Downstream of Oregon Dam 4.6 mi B 213*	4.6 (13/13) (2.2-18.0)	3.4 (13/13) (1.5-13.2)	0
	Gamma Spec. 9						
	Cs-134	10	<LLD	-	-	<LLD	0
	Cs-137	10	<LLD	-	-	<LLD	0
	Other Gammas	20	<LLD	-	-	<LLD	0
	Tritium 9	200	<LLD	-	-	<LLD	0
	Sr-89 9	10	<LLD	-	-	<LLD	0
	Sr-90 9	2	<LLD	-	-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Opie, Illinois Reporting Period 3rd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results	
				Location	Mean Range			
Well Water (pCi/l)	Gross Beta 2	2.8	9.0 (1/2)	By-18, McCoy Farmstead 1.25 mi @ 235°	9.0 (1/1)	None	0	
	Gamma Spec. 2		-					
	Cs-134	10	<LLD	-	-	None	0	
	Cs-137	10	<LLD	-	-	None	0	
	Other Gammas	20	<LLD	-	-	None	0	
	Tritium 2	200	250 (2/2) (210-290)	By-14, CECO Real Estate Office 0.3 mi @ 101°	290 (1/1)	None	0	
	Sr-89	2	10	<LLD	-	-	None	0
	Sr-90	2	2	<LLD	-	-	None	0
Fish (pCi/g wet)	Gross Beta 4	1.0	3.8 (2/2) (3.6-3.9)	By-12, Oregon Pool 4.5 mi @ 213°	3.8 (2/2) (3.6-3.8)	3.3 (2/2) (3.3-3.3)	0	
	Gamma Spec. 4							
	Cs-134	0.1	<LLD	-	-	<LLD	0	
	Cs-137	0.1	<LLD	-	-	<LLD	0	
	Other Gammas	0.2	<LLD	-	-	<LLD	0	
	Sr-89	4	1.0	<LLD	-	-	<LLD	0
	Sr-90	4	1.0	<LLD	-	-	<LLD	0
	Cattlefeed & Grass (pCi/g wet)	Gross Beta 4	1.0	5.1 (3/3) (1.7-9.8)	By-20, Seabold Farm 2.5 mi @ 41°	9.8 (1/1)	2.2 (1/1)	0
Gamma Spec. 4								
Cs-134		0.1	<LLD	-	-	<LLD	0	
Cs-137		0.1	<LLD	-	-	<LLD	0	
Other Gammas		0.2	<LLD	-	-	<LLD	0	
Sr-89		4	1.0	<LLD	-	-	<LLD	0
Sr-90		4	1.0	<LLD	-	-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 3rd Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Annual vegetation (pCi/g wet)	Gross Beta 2	1.0	4.9 (1/1)	By-13, Upstream of Oregon Dam 4.3 mi @ 213*	8.3 (1/1)	8.3 (1/1)	0
	Gamma Spec. 2						
	Cs-134 0.1	<LLD	-	-	-	<LLD	0
	Cs-137 0.1	<LLD	-	-	-	<LLD	0
	Other Gammas 0.2	<LLD	-	-	-	<LLD	0
Bottom Sediments (pCi/g dry)	Gross Beta 2	1.0	16.5 (2/1)	By-12, Downstream of Oregon Dam 4.6 mi @ 213*	16.5 (1/1)	7.6 (1/1)	0
	Gamma Spec. 2						
	Cs-134 0.1	<LLD	-	-	-	<LLD	0
	Cs-137 0.1	0.14 (1/1)	By-12, Downstream of Oregon Dam 4.6 mi @ 213*	0.14 (1/1)	<LLD	0	
	Other Gammas 0.2	<LLD	-	-	-	<LLD	0
Vegetables	Gross Beta 8	1.0	3.2 (8/8) (1.2-5.5)	By-19-1, Oregon Stand 966 E. Weld Bark Rd.	4.2 (4/4) (3.1-5.5)	None	0
	Gamma Spec. 8						
	Cs-134 0.1	<LLD	-	-	-	None	0
	Cs-137 0.1	<LLD	-	-	-	None	0
	Other Gammas 0.2	<LLD	-	-	-	None	0
	Sr-89 8	1.0	<LLD	-	-	None	0
	Sr-90 8	1.0	<LLD	-	-	None	0
I-131 3	0.03	<LLD	-	-	None	0	

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.

^b LLD value dependent on volume of sample available for analysis.

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM - QUARTERLY SUMMARY

Name of Facility: Byron Nuclear Power Station Docket No. 50-454, 50-252
 Location of Facility: Ogle, Illinois Reporting Period: 4th Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean and Range	Location with Highest Quarterly Mean		Control Locations Mean and Range	Number of non-routine results	
				Location	Mean Range			
Air Particulates (pCi/m ³)	Gross Beta	156	0.03? (117/117) (0.009-0.095)	By-23, Onsite 0.6 mi @ 182*	5.6 (13/13) (0.014-0.063)	0.03? (39/39) (0.011-0.070)	0	
	Gamma Spec.	12	<LLC	-	-	<LLD	0	
	Sr-89	12	<LLD	-	-	<LLD	0	
	Sr-90	12	<LLD	-	-	<LLD	0	
	I-131	156	0.10	<LLD	-	-	<LLD	0
Gamma Background (TLUs) (mR/qr.)	Gamma Dose	3.0	19.9 (9/9) (10.7-34.3)	By-22, LECO Real Estate Office 0.3 mi @ 101*	24.3 (1/1)	14.0 (3/3) (10.6-16.7)	0	
	Milk (pCi/l)							
Precipitation	I-131	15	<LLD	-	-	<LLD	0	
	Gamma Spec.	16	<LLD	-	-	<LLD	0	
	Cs-134		5.0	<LLD	-	-	<LLD	0
	Cs-137		5.0	<LLD	-	-	<LLD	0
	Other Gammas		10.0	<LLD	-	-	<LLD	0
	Sr-89	16	10	<LLD	-	-	<LLD	0
	Sr-90	16	2	2.6 (12/12) (1.4-3.3)	By-17, Bosecker/Linger Farm, 7.0 mi @ 25*	3.3 (4/4) (3.0-3.6)	3.3 (4/4) (3.0-3.6)	0
Gross Beta	10	8.40	<LLD	-	-	<LLD	0	
Gamma Spec.	4	20	<LLD	-	-	<LLD	0	
Tritium	4	200	<LLD	-	-	<LLD	0	
Sr-89	4	10	<LLD	-	-	<LLD	0	
Sr-90	4	2	<LLD	-	-	<LLD	0	

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility Byron Nuclear Station Doc. # 50-454, 50-455
 Location of Facility Orleans, Illinois Rep. Period 4th quarter 1965
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Range of Locations	Location with Highest Quarterly Mean		Control Locations Mean Range	Number of Non-routine results
				Location	Mean Range		
Cooling Water (pCi/l)	Gross Beta 26	1.0	15.5 (13/13)	By-11, Discharge at Station	158.5 (13/13) (3.4-1043)	3.3 (12/13) (2.3-5.0)	2
	Gamma Spec. 6						
	Cs-134 10		<LLD	-	-	<LLD	0
	Cs-137 10		<LLD	-	-	<LLD	0
	Co-58 10		168 (2/3) (147-190)	By-11, Discharge at Station	168 (2/3) (147-190)	<LLD	2
	Other Gamma 20		<LLD	-	-	<LLD	0
	Tritium 6	200	4087 (3/3) (299-7410)	By-12, Discharge at Station	4087 (3/3) (1860-7410)	<LLD	3
	Sr-89 6	10	43.3 (1/3)	By-11, Discharge at Station	43.3 (1/3)	<LLD	1
Sr-90 6	2	<LLD	By-10, Intake Pipe at Station	2.2 (1/3)	2.2 (1/3)	0	
Surface Water (pCi/l)	Gross Beta 39	1.8	3.1 (25/26) (1.5-4.4)	By-13, Upstream 4.3 mi "13"	3.5 (12/13) (1.7-10.7)	3.5 (13/13) (1.7-10.7)	0
	Gamma Spec. 9						
	Cs-134 10		<LLD	-	-	<LLD	0
	Cs-137 10		<LLD	-	-	<LLD	0
	Other Gamma 20		<LLD	-	-	<LLD	0
	Tritium 3	200	<LLD	-	-	<LLD	0
	Sr-89 3	10	<LLD	-	-	<LLD	0
	Sr-90 3	2	<LLD	-	-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Socket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 4th Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean		Control Locations Mean ^a Range	Number of Non-routine Results
				Location	Mean Range		
Well Water (pCi/l)	Gross Beta 2	2.8	6.1 (1/2)	By-18, McCoy Farmstead 1.2 ⁵ mi @ 235*	6.1 (1/2)	None	0
	Gamma Spec. 2		-		-		
	Cs-134 10		<LLD	-	-	None	0
	Cs-137 10		<LLD	-	-	None	0
	Other Gammas 20		<LLD	-	-	None	0
	Tritium 2	200	170 (1/2)	By-14, CECO Real Estate Office 0.3 mi @ 101*	170 (1/2)	None	0
	Sr-89 2	10	<LLD	-	-	None	0
Sr-90 2	2	<LLD	-	-	None	0	
Fish (pCi/g wet)	Gross Beta 3	1.0	3.3 (1/1)	By-12, Lagoon Pool 4.5 mi @ 213*	3.3 (1/1)	2.8 (2/2) (2.8-2.8)	0
	Gamma Spec. 3		-		-		
	Cs-134 0.1		<LLD	-	-	<LLD	0
	Cs-137 0.1		<LLD	-	-	<LLD	0
	Other Gammas 0.2		<LLD	-	-	<LLD	0
	Sr-89 3	1.0	<LLD	-	-	<LLD	0
	Sr-90 3	1.0	<LLD	-	-	<LLD	0
Cattlefeed & Grass (pCi/g wet)	Gross Beta 4	1.0	7.6 (3/3) (5.7-9.3)	By-20, Seabold Farm 2.5 mi @ 41*	4.3 (1/1)	4.5 (1/1)	0
	Gamma Spec. 4		-		-		
	Cs-134 0.1		<LLD	-	-	<LLD	0
	Cs-137 0.1		<LLD	-	-	<LLD	0
	Other Gammas 0.2		<LLD	-	-	<LLD	0
	Sr-89 4	1.0	<LLD	-	-	<LLD	0
	Sr-90 4	1.0	<LLD	-	-	<LLD	0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Byron Nuclear Power Station Docket No. 50-454, 50-455
 Location of Facility Ogle, Illinois Reporting Period 4th Quarter 1985
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Year		Control Locations Mean ^a Range	Number of Non-routine Results	
				Location	Mean Range			
Aquatic Vegetation (pCi/g wet)	Gross Beta 2	1.0	3.9 (1/1)	By-12, Downstream of Oregon Dam 4.5 mi @ 213*	3.9 (1/1)	1.6 (1/1)	0	
	Gamma Spec. 2				-	-	0	
	Cs-134	0.1	<LLD		-	-	<LLD	0
	Cs-137	0.1	<LLD		-	-	<LLD	0
	Other Gammas	0.2	<LLD		-	-	<LLD	0
Bottom Sediments (pCi/g dry)	Gross Beta 2	1.0	8.5 (1/1)	By-13, Upstream of Oregon Dam 4.3 mi @ 213*	12.8 (1/1)	12.6 (1/1)	0	
	Gamma Spec. 2				-	-	0	
	Cs-134	0.1	<LLD		-	-	<LLD	0
	Cs-137	0.1	<LLD		-	-	<LLD	0
	Other Gammas	0.2	<LLD		-	-	<LLD	0

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.
^b LLD value dependent on volume of sample available for analysis.

Appendix A

Interlaboratory Comparison Program Results

NOTE: Appendix A will be updated twice a year and the complete Appendix will be included in January and July monthly reports only. Please refer to January and July Reports for information.

Appendix B

Collection Schedule

Quarter: 4th, 1985

Collection Schedule

Note: For samples scheduled for collection at intervals of one month or greater, "Date Scheduled" indicates the target date for obtaining the sample(s). Samples should be obtained as close to that date as possible, and in any event, before the next scheduled target collection. Dates of unsuccessful sampling attempts are to be noted on the weekly sample collection sheet.

Month:		OCTOBER	NOVEMBER	DECEMBER											
Date Scheduled:		7	14	21	28	4	11	18	25	2	9	16	23	30	Notes
Sample Type: Collection Freq.	Code	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A/I	A=Air particulates I-Air iodine
Air Samplers	BY-01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Frequencies of Collections: W=weekly M=monthly Q=quarterly 3x/yr.=three times a year (by quarter) A=annually
A: W	-02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Record & Adjust	-04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
FL ₁ & FL ₂ : W (See Appendix A-1)	-05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-07	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-08	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-22	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Calib. Air Samplers with Field Rota/Flowmeter: M		10/7 ✓				11/4 ✓				12/2 ✓					
Field Rota/Flowmeter Calibration: Q		10/7 (10/21) ✓								Return to TIML for calibration January-April-July-October					
Surface Water: W	BY-09	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	a. Unable to obtain 2nd species of fish; no ice fishing on Rock River.
	-12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	-13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Well Water: Q	BY-14	10/7 ✓													
Well Water: Q	-18	10/7 ✓													
Cooling Water: W Intake	BY-10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Discharge	-11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bottom Sediments: 3x/yr.	BY-12	10/7 ✓													May, July, and October
	-13	10/7 ✓													
Aquatic Plants: 3x/yr.	BY-12	10/7 ✓													May, July, and October
	-13	10/7 ✓													
Fish: 3x/yr	BY-12	10/7 (10/8) ✓ - a [one more species to be coll'd]													May, July, and October
	BY-13	10/7 ✓													
Vegetables: A* (as available at harvest)	BY-19-1	- not scheduled this quarter -													August or September
	-19-2	" " " "													

* Four varieties from each location. Includes at least one (1) sample of green leafy vegetables per location. Two (2) if available.

Quarter: 4th 1985

Collection Schedule (continued)

Month:		OCTOBER	NOVEMBER	DECEMBER	Notes										
Date Scheduled:		7 14 21 28	4 11 18 25	2 9 16 23 30											
Sample Type:	Code				Grass: May, July, and Octo: Cattlefeed: February										
Collection Freq.															
Grass or Cattlefeed: Q	BY-15	10/7 ✓													
	-16	10/7 ✓													
	-17	10/7 ✓													
	-20	10/7 ✓													
Milk: M	BY-15	10/7 ✓	10/21 ✓	11/4 ✓	12/2 ✓										
	-16	10/7 ✓	10/21 ✓	11/4 ✓	12/2 ✓										
	-17	10/7 ✓	10/21 ✓	11/4 ✓	12/2 ✓										
	-20	10/7 ✓	10/21 ✓	11/4 ✓	12/2 ✓										
Precipitation: M	BY-15	10/7 ✓	11/4 ✓	12/12 ✓											
	-16	10/7 ✓	11/4 ✓	12/12 ✓											
	-17	10/7 ✓	11/4 ✓	12/12 ✓											
	-20	10/7 ✓	11/4 ✓	12/12 ✓											
Air Sampler TLDs Visual Check: W	BY-01 thru BY-08	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
All Other TLDs Visual Check: M	BY-101-1,2 thru 116-1,2 -201-1,2 thru 216-1,2	10/7 ✓	11/4 ✓	12/2 ✓											
TLD exchange (all): Q		9/30 ✓			12/30 ✓										
Dairy Census: A	a) Site boundary to 2 mi	- not scheduled this quarter -										August			
	b) 2 miles to 5 miles	"	"	"	"	"	"	"	"	"	"	"	"	"	
	c) At Dairies: BY-15,16,17,20	"	"	"	"	"	"	"	"	"	"	"	"	"	
Nearest Residence Survey: A Check 16 meteorological sectors		"	"	"	"	"	"	"	"	"	"	"	"	"	August

Draft: C. Bennett Date 8-30-85
 cc: P. Coulter Date _____
 Station

Distribution of the Collection Schedule will be by:
 November 30 for 1st Q.
 February 28 for 2nd Q.
 May 31 for 3rd Q.
 August 31 for 4th Q.

ATTACHMENT C

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM

BYRON NUCLEAR POWER STATION

JANUARY - DECEMBER, 1986