

Annual Report
to the
U.S. Nuclear Regulatory Commission

Environmental Radiation Monitoring Program
at the Duane Arnold Energy Center
Cedar Rapids, Iowa

for the reporting period

January - December 1986

Prepared and Submitted
by the

University (State) Hygienic Laboratory
University of Iowa
Iowa City, Iowa

Cooperative Agreement, NRC-30-83-648

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Date Prepared:

2 June 1987

Approved by:

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The following sets of data constitute the annual report of the Iowa Radiation Monitoring Cooperative Agreement, NRC - 30-83-648 for the reporting period, January through December 1986.

Results of completed analyses are presented in the attached tables along with the licensee results where they were available. The data obtained in the program are well within the ranges previously encountered in the licensee monitoring program and within the ranges expected for the environmental media sampled.

None of the media sampled contained radioactivity that could be attributed to the operation of the Duane Arnold Energy Center.

Increased radioactivity due to the incident (USSR) at the Chernobyl is noted throughout the report by an *.

Direct comparison of state and licensee results was not possible in numerous instances because of differences in sampling frequency and sample analysis, e.g., whether the samples were analyzed individually or as composites. Some of the differences follow:

1. The licensee results of gamma isotopic analyses are from quarterly sites of air samples collected weekly, whereas the state results are for weekly analyses of air samples collected weekly and for quarterly composites of these same samples.
2. The licensee results of gamma isotopic analyses are from monthly analyses of water samples collected monthly, whereas the state results are for monthly composites of water samples collected weekly.
3. The licensee results of tritium analyses are from quarterly composites of water samples collected monthly, whereas the state results are for quarterly composites of monthly composites of water samples collected weekly.
4. The licensee results of gamma isotopic analyses are from monthly composites of milk samples collected weekly during the grazing season whereas, the state results are for monthly samples of milk samples collected monthly.
5. State air filters for 27 March 86, 1 May 86, and 8 May 86 were lost after gamma analysis. No gross Beta data is recorded.
6. UHL air sample from 28 August 86 had a low volume due to fan malfunction.

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	9 Jan 86	0.022	0.023 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	9 Jan 86	0.027	0.021 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	16 Jan 86	0.012	0.019 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	16 Jan 86	0.022	0.007 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	23 Jan 86	0.017	0.027 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	23 Jan 86	0.027	0.030 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	30 Jan 86	0.026	0.023 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	30 Jan 86	0.023	0.026 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	6 Feb 86	0.037	0.018 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	6 Feb 86	0.037	0.016 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	13 Feb 86	0.046	0.023 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	13 Feb 86	0.057	0.029 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	20 Feb 86	0.027	0.031 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	20 Feb 86	0.025	0.030 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	27 Feb 86	0.008	0.029 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	27 Feb 86	0.029	0.031 $\pm$ 0.004

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	6 Mar 86	0.014	0.013 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	6 Mar 86	0.018	0.007 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	13 Mar 86	0.014	0.017 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	13 Mar 86	0.018	0.018 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	20 Mar 86	0.010	0.019 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	20 Mar 86	0.013	0.011 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	27 Mar 86	Sample lost	0.014 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	27 Mar 86	Sample lost	0.015 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	3 Apr 86	0.007	0.020 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	3 Apr 86	0.009	0.015 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	10 Apr 86	0.009	0.014 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	10 Apr 86	0.011	0.014 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	17 Apr 86	0.008	0.016 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	17 Apr 86	<0.003	<0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	24 Apr 86	<0.003	0.016 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	24 Apr 86	0.009	0.009 $\pm$ 0.003

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	1 May 86	Sample lost	0.023 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	1 May 86	Sample lost	0.013 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	8 May 86	Sample lost	0.016 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	8 May 86	Sample lost	0.015 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	15 May 86	0.117 *	0.260 $\pm$ 0.010 *
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	15 May 86	0.106 *	0.182 $\pm$ 0.008 *
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	22 May 86	0.034 *	0.362 $\pm$ 0.011 *
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	22 May 86	0.164 *	0.232 $\pm$ 0.009 *
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	29 May 86	0.073 *	0.117 $\pm$ 0.006 *
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	29 May 86	0.081 *	0.098 $\pm$ 0.006 *
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	5 Jun 86	0.034 *	0.099 $\pm$ 0.006 *
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	5 Jun 86	0.067 *	0.077 $\pm$ 0.005 *
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	12 Jun 86	0.045 *	0.032 $\pm$ 0.004 *
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	12 Jun 86	0.040 *	0.038 $\pm$ 0.004 *
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	19 Jun 86	0.022	0.018 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	19 Jun 86	0.018	0.021 $\pm$ 0.003

* Elevated gross beta activity due to fallout from the Chernobyl Nuclear Plant (USSR) accident on 26 April 1986.

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	26 Jun 86	0.015	0.020 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	26 Jun 86	0.014	0.018 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	3 Jul 86	0.016	0.019 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	3 Jul 86	0.017	0.017 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	10 Jul 86	0.008	0.022 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	10 Jul 86	0.017	0.017 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	17 Jul 86	0.016	0.018 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	17 Jul 86	0.012	0.014 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	24 Jul 86	0.008	0.020 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	24 Jul 86	0.008	0.019 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	31 Jul 86	0.014	0.020 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	31 Jul 86	0.018	0.020 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	7 Aug 86	0.007	0.019 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	7 Aug 86	<0.002	0.007 $\pm$ 0.002
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	14 Aug 86	0.009	0.016 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	14 Aug 86	0.015	0.016 $\pm$ 0.003

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	21 Aug 86	0.020	0.025 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	21 Aug 86	0.025	0.022 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	28 Aug 86	0.013	0.019 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	28 Aug 86	0.012	0.016 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	4 Sep 86	0.001	0.026 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	4 Sep 86	0.022	0.023 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	11 Sep 86	<0.009	0.021 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	11 Sep 86	0.011	0.016 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	18 Sep 86	0.019	0.023 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	18 Sep 86	0.016	0.020 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	25 Sep 86	0.006	0.016 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	25 Sep 86	0.016	0.015 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	2 Oct 86	0.003	0.021 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	2 Oct 86	0.015	0.017 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	9 Oct 86	<0.003	0.016 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	9 Oct 86	0.013	0.012 $\pm$ 0.003

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	16 Oct 86	0.010	0.018 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	16 Oct 86	0.015	0.017 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	23 Oct 86	0.018	0.043 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	23 Oct 86	0.034	0.034 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	30 Oct 86	0.024	0.034 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	30 Oct 86	0.024	0.030 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	6 Nov 86	0.017	0.025 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	6 Nov 86	0.019	0.025 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	13 Nov 86	0.019	0.024 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	13 Nov 86	0.017	0.020 $\pm$ 0.003
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	20 Nov 86	0.030	0.032 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	20 Nov 86	0.025	0.024 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	26 Nov 86	0.032	0.045 $\pm$ 0.005
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	26 Nov 86	0.029	0.037 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	4 Dec 86	0.016	0.023 $\pm$ 0.003
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	4 Dec 86	0.018	0.022 $\pm$ 0.004

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	11 Dec 86	0.016	0.028 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	11 Dec 86	0.021	<0.036
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	18 Dec 86	0.032	0.040 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	18 Dec 86	0.026	0.022 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	26 Dec 86	0.033	0.042 $\pm$ 0.004
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	26 Dec 86	0.027	0.036 $\pm$ 0.004
Air-Gross Beta	Control	UHL-Oakdale	31 mi, 160 deg	31 Dec 86	0.033	0.045 $\pm$ 0.006
Air-Gross Beta	Duplicate	D15, DAEC	0.5 mi, 305 deg	31 Dec 86	0.030	0.038 $\pm$ 0.005

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	9 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	9 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	16 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	16 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	23 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	23 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	30 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	30 Jan 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	6 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---

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Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	13 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	13 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---

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Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	20 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ----
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	20 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ----
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	27 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ----

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	27 Feb 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	6 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	6 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	13 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	13 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	20 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	20 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	27 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	27 Mar 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	3 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	3 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	10 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.009 0.013 + 0.001 <0.0050 <0.0064 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	10 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	17 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	17 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	24 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	24 Apr 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	1 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	1 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ----
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	8 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ----
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	8 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ----

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	15 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.077 + 0.003 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 0.048 + 0.008 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	15 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.051 + 0.005 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 0.0315 + 0.005 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	22 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	22 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.013 + 0.007 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 0.0068 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	* 0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	29 May 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	* 0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	29 May 86	Be-7 0.171 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.0081 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 0.0033 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	* 0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	5 Jun 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.035 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	5 Jun 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.0063 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 0.0025 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	12 Jun 86	Be-7 0.0323 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 0.022 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	12 Jun 86	Be-7 0.0401 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	* 0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ----
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	19 Jun 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	* 0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ----
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	19 Jun 86	Be-7 0.1290 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	* 0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ----

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	26 Jun 86	Be-7 0.1194 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054 + 0.0009 0.013 + 0.001 <0.0050 <0.0064 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	26 Jun 86	Be-7 0.1152 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.0043 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	3 Jul 86	Be-7 0.1351 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	3 Jul 86	Be-7 0.1503 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	10 Jul 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	10 Jul 86	Be-7 0.1125 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	17 Jul 86	Be-7 0.1150 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	17 Jul 86	Be-7 0.1065 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	24 Jul 86	Be-7 0.1085 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	24 Jul 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	31 Jul 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	31 Jul 86	Be-7 0.1450 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	7 Aug 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 0.0032 0.0031 0.0023 0.010 0.0008 0.0010 0.0024 0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	7 Aug 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 0.0018 0.0038 0.0025 0.010 0.0015 0.0012 0.0035 0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	14 Aug 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 0.0032 0.0031 0.0023 0.010 0.0008 0.0010 0.0024 0.0043 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	14 Aug 86	Be-7 0.1191 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	21 Aug 86	Be-7 0.1208 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	21 Aug 86	Be-7 0.1534 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg (Low Volume)	28 Aug 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 ± 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	28 Aug 86	Be-7 0.1014 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 ± 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	4 Sep 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 ± 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	4 Sep 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	11 Sep 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	11 Sep 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg (Low Volume)	18 Sep 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	18 Sep 86	Be-7 0.0966 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	25 Sep 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	25 Sep 86	Be-7 0.0664 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	2 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	2 Oct 86	Be-7 0.1034 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg (Low Volume)	9 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	9 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	16 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	16 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	23 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	23 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg (Low Volume)	30 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	30 Oct 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	6 Nov 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	6 Nov 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	13 Nov 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	13 Nov 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	20 Nov 86	Be-7 0.0893 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	20 Nov 86	Be-7 0.1024 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	26 Nov 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	26 Nov 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	4 Dec 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	4 Dec 86	Be-7 0.0724 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	11 Dec 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	11 Dec 86	Be-7 0.0682 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	18 Dec 86	Be-7 0.1202 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	18 Dec 86	Be-7 0.0750 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	26 Dec 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	26 Dec 86	Be-7 0.0503 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air	Duplicate	UHL, Oakdale	31 mi, 160 deg	31 Dec 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0094	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079 ---
Air	Duplicate	D15, DAEC	0.5 mi, 305 deg	31 Dec 86	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252 I-131 <0.0034	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041 ---

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air Particulate, Quarterly Composite	Duplicate	UHL, Oakdale	31 mi, 160 deg	1st Qtr	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252	<0.012 <0.0022 <0.0028 <0.0017 <0.0094 <0.0010 <0.0010 <0.0029 <0.0069
Air Particulate, Quarterly Composite	Duplicate	D15, DAEC	0.5 mi, 305 deg	1st Qtr	Be-7 0.0552 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252	0.056 + 0.011 <0.0018 <0.0024 <0.0024 <0.011 <0.0010 <0.0012 <0.0029 <0.0075
Air Particulate, Quarterly Composite	Duplicate	UHL, Oakdale	31 mi, 160 deg	2nd Qtr	Be-7 0.0818 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0151 Ce-141 <0.0186 Ce-144 <0.0252	* 0.098 + 0.017 <0.0020 <0.0032 0.014 + 0.003 <0.013 0.0054+ 0.009 0.0013+ 0.001 <0.0050 <0.0064

* Elevated activity due to fallout from the Chernobyl Nuclear Plant (USSR) accident on 26 April 1986.

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air Particulate, Quarterly Composite	Duplicate	D15 DAEC	0.5 mi, 305 deg	2nd Qtr	Be-7 0.0750 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0106 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0210 Ce-141 <0.0186 Ce-144 <0.0252	0.084 + 0.025 <0.0060 <0.0053 0.0094 + 0.004 <0.017 0.0060 + 0.0013 0.011 + 0.002 <0.0084 <0.011
Air Particulate, Quarterly Composite	Duplicate	UHL, Oakdale	31 mi, 160 deg	3rd Qtr	Be-7 0.060 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252	0.065 + 0.016 <0.0032 <0.0031 <0.0023 <0.010 <0.0008 <0.0010 <0.0024 <0.0043
Air Particulate, Quarterly Composite	Duplicate	D15, DAEC	0.5 mi, 305 deg	3rd Qtr	Be-7 0.137 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252	0.083 + 0.014 <0.0018 <0.0038 <0.0025 <0.010 <0.0015 <0.0012 <0.0035 <0.0056

* Elevated activity due to fallout from the Chernobyl Nuclear Plant (USSR) accident on 26 April 1986.

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/m ³)	Licensee Results (pCi/m ³)
Air Particulate, Quarterly Composite	Duplicate	UHL, Oakdale	31 mi, 160 deg	4th Qtr	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0328 Cs-137 <0.0189 Ce-141 <0.0186 Ce-144 <0.0252	0.051 + 0.011 <0.0017 <0.0041 <0.0029 <0.014 <0.0016 <0.0018 <0.0038 <0.0079
Air Particulate, Quarterly Composite	Duplicate	D15, DAEC	0.5 mi, 305 deg	4th Qtr	Be-7 <0.0317 Nb-95 <0.0047 Zr-95 <0.0045 Ru-103 <0.0040 Ru-106 <0.0124 Cs-134 <0.0206 Cs-137 <0.0119 Ce-141 <0.0186 Ce-144 <0.0252	<0.025 <0.0023 <0.0030 <0.0017 <0.012 <0.0015 <0.0014 <0.0013 <0.0041

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	7 Jan 86	I-131 <1.0 Ba-140 <42 Cs-137 <18 K-40 1697 $\pm$ 121	<1.0 <60 <18 1240 $\pm$ 70
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	4 Feb 86	I-131 <1.0 Ba-140 <42 Cs-137 <18 K-40 1461 $\pm$ 100	<1.0 <60 <18 1860 $\pm$ 110
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	4 Mar 86	I-131 1.4 Ba-140 <42 Cs-137 <18 K-40 1461 $\pm$ 100	<1.0 <60 <18 1410 $\pm$ 90
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	1 Apr 86	I-131 <1.2 Ba-140 <42 Cs-137 <18 K-40 1461 $\pm$ 100	<1.0 <60 <18 1340 $\pm$ 80
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	6 May 86	I-131 <1.3 Ba-140 <42 Cs-137 <18 K-40 1645 $\pm$ 166	<1.0 <60 <18 1320 $\pm$ 160
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	20 May 86	I-131 3.2 Ba-140 <42 Cs-137 <18 K-40 1707 $\pm$ 216	38.9 $\pm$ 1.2 <60 21 $\pm$ 5 1370 $\pm$ 60

* Elevated activity due to fallout from the Chernobyl Nuclear Plant (USSR) accident on 26 April 1986.

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	3 Jun 86	I-131 1.8 Ba-140 <42 Cs-137 <18 K-40 1787 $\pm$ 106	11.9 $\pm$ 0.6 * <60 18 $\pm$ 5 1410 $\pm$ 110
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	10 Jun 86	I-131 Ba-140 No sample Cs-137 K-40	4.0 $\pm$ 0.4 * <60 <18 1430 $\pm$ 90
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	17 Jun 86	I-131 Ba-140 No sample Cs-137 K-40	2.1 $\pm$ 0.3 * <60 <18 1340 $\pm$ 60
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	24 Jun 86	I-131 Ba-140 No sample Cs-137 K-40	<1.0 <60 <18 1230 $\pm$ 140
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	8 Jul 86	I-131 <1.9 Ba-140 <42 Cs-137 <18 K-40 1685 $\pm$ 106	<1.0 <60 <18 1250 $\pm$ 130
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	22 Jul 86	I-131 Ba-140 No sample Cs-137 K-40	<1.0 <60 <18 1210 $\pm$ 110

* Elevated activity due to fallout from the Chernobyl Nuclear Plant (USSR) accident on 26 April 1986.

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	5 Aug 86	I-131 <1.8 Ba-140 <42 Cs-137 <18 K-40 1424 $\pm$ 110	<1.0 <60 <18 1330 $\pm$ 80
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	19 Aug 86	I-131 Ba-140 No sample Cs-137 K-40	<1.0 <60 <18 1480 $\pm$ 160
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	3 Sep 86	I-131 <1.7 Ba-140 <42 Cs-137 <18 K-40 1639 $\pm$ 104	<1.0 <60 <18 1270 $\pm$ 80
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	16 Sep 86	I-131 Ba-140 No sample Cs-137 K-40	<1.0 <60 <18 1420 $\pm$ 120
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	30 Sep 86	I-131 Ba-140 No sample Cs-137 K-40	<1.0 <60 <18 1410 $\pm$ 120
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	7 Oct 86	I-131 <1.7 Ba-140 <42 Cs-137 <18 K-40 1492 $\pm$ 163	<1.0 <60 <18 1220 $\pm$ 100

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	4 Nov 86	I-131 <1.8 Ba-140 <42 Cs-137 <18 K-40 1422 $\pm$ 104	<1.0 <60 <18 1230 $\pm$ 100
Milk	Duplicate	D63, Andrews farm	1.5 mi NW	3 Dec 86	I-131 <1.8 Ba-140 <42 Cs-137 <18 K-40 1467 $\pm$ 160	<1.0 <60 <18 1200 $\pm$ 100

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water	Duplicate	D50, plant intake		January Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		January Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D50, plant intake		February Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		February Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water	Duplicate	D50, plant intake		March Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		March Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D50, plant intake		April Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		April Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water	Duplicate	D50, plant intake		May Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		May Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D50, plant intake		June Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		June Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water	Duplicate	D50, plant intake		July Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		July Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-15 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D50, plant intake		August Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		August Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water	Duplicate	D50, plant intake		September Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		September Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-15 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D50, plant intake		October Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		October Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water	Duplicate	D50, plant intake		November Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		November Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D50, plant intake		December Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18
Water	Duplicate	D51, plant discharge		December Composite	Mn-54 <15 Co-58 <15 Co-60 <15 Nb-95 <15 Zr-95 <15 Cs-134 <15 Cs-137 <18	<15 <15 <15 <15 <30 <15 <18

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/l)	Licensee Results (pCi/l)
Water, tritium	Duplicate	D50, plant intake		1st qtr. comp.	< 975	<330
Water, tritium	Duplicate	D51, plant discharge		1st qtr. comp.	< 975	<330
Water, tritium	Duplicate	D50, plant intake		2nd qtr. comp.	<1005	<330
Water, tritium	Duplicate	D51, plant discharge		2nd qtr. comp.	<1005	<330
Water, tritium	Duplicate	D50, plant intake		3rd qtr. comp.	< 913	<330
Water, tritium	Duplicate	D51, plant discharge		3rd qtr. comp.	< 913	<330
Water, tritium	Duplicate	D50, plant intake		4th qtr. comp.	< 825	<330
Water, tritium	Duplicate	D51, plant discharge		4th qtr. comp.	< 825	<330

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/g)	Licensee Results (pCi/g)
Fish (Carp)	Split	D61, Downstream		8 May 86	K-40 3.15 + 0.08	4.15 + 0.12
					Mn-54 <0.012	<0.012
					Co-58 <0.009	<0.022
					Co-60 <0.020	<0.010
					Nb-95 <0.037	<0.021
					Zr-95 <0.037	<0.044
					Ru-103 <0.016	<0.033
					Ru-106 <0.109	<0.089
					Cs-134 <0.079	<0.010
					Cs-137 <0.010	<0.009
					Ce-141 <0.031	<0.044
					Ce-144 <0.120	<0.036
Fish (Carp)	Split	D61, Downstream		5 Nov 86	K-40 2.98 + 0.11	3.64 + 0.42
					Mn-54 <0.012	<0.028
					Co-58 <0.009	<0.028
					Co-60 <0.020	<0.031
					Nb-95 <0.037	<0.033
					Zr-95 <0.037	<0.060
					Ru-103 <0.016	<0.026
					Ru-106 <0.109	<0.23
					Cs-134 <0.079	<0.040
					Cs-137 <0.010	<0.034
					Ce-141 <0.031	<0.023
					Ce-144 <0.120	<0.11

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/g)	Licensee Results (pCi/g)
River Sediment	Split	D-51		9 May 86	K-40 7.25 + 0.20	7.88 + 0.16
					Mn-54 <0.027	<0.017
					Co-58 <0.063	<0.022
					Co-60 <0.020	<0.018
					Nb-95 <0.026	<0.020
					Zr-95 <0.133	<0.039
					Ru-103 <0.017	<0.019
					Ru-106 <0.22	<0.13
					Cs-134 <0.027	<0.019
					Cs-137 <0.023	<0.019
					Ce-141 <0.041	<0.026
					Ce-144 <0.157	<0.073
River Sediment	Split	D-51		1 Oct 86	K-40 7.99 + 0.28	8.35 + 0.23
					Mn-54 <0.020	<0.024
					Co-58 <0.019	<0.023
					Co-60 <0.017	<0.023
					Nb-95 <0.023	<0.023
					Zr-95 <0.036	<0.042
					Ru-103 <0.020	<0.019
					Ru-106 <0.17	<0.18
					Cs-134 <0.023	<0.029
					Cs-137 <0.022	<0.026
					Ce-141 <0.039	<0.027
					Ce-144 <0.135	<0.10

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Medium or Pathway Sampled	Split or Duplicate	Location	Distance & Direction	Date Collected	State Results (pCi/g)	Licensee Results (pCi/g)
Vegetation	Duplicate	D63, Andrews farm	1.5 mi NW	23 Jul 86	K-40 6.23 + 0.90 Mn-54 <0.033 Co-58 <0.032 Co-60 <0.028 Nb-95 <0.033 Zr-95 <0.064 Ru-103 <0.030 Ru-106 <0.272 Cs-134 <0.038 Cs-137 <0.035 Ce-141 <0.032 Ce-144 <0.125 I-131 <0.039	5.64 + 0.68 <0.039 <0.041 <0.041 <0.039 <0.068 <0.036 <0.34 <0.040 <0.038 <0.049 <0.22 <0.040

Crosscheck Program Results

The Radiochemistry Section of the University Hygienic Laboratory has participated in interlaboratory comparison (crosscheck) programs for many years. These programs are operated by agencies which supply environmental-type samples containing concentrations of radionuclides known to the issuing agency, but not to participating laboratories. The purpose of such a program is to provide an independent check on the laboratory's analytical procedures and to alert it to any possible problems.

Participant laboratories measure the concentrations of specified radionuclides and report them to the issuing agency. Later, the agency reports the known values to the participating laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

The results were obtained through participation in the environmental sample crosscheck program for air, water, food, and milk samples conducted by the U.S. Environmental Protection Agency Intercomparison and Calibration Section, Quality Assurance Branch, Environmental Monitoring and Support Laboratory, Las Vegas, Nevada.

U. S. Environmental Protection Agency
Crosscheck Program Participation

Sample Type	Sample Date	Analysis	Concentration		UHL Results
			Known Value		
Water (pCi/l)	10 Jan 86	Sr-89	31.0	+ 10.0	31.3
		Sr-90	15.0	+ 3.0	12.7
Water (pCi/l)	7 Feb 86	Co-60	18.0	+ 10.0	14.3
		Zn-65	40.0	+ 10.0	17.7
		Cs-134	30.0	+ 10.0	16.7
		Cs-137	22.0	+ 10.0	15.7
Milk (pCi/l)	28 Feb 86	I-131 (low level)	9.0	+ 12.0	9.0
Water (pCi/l)	14 Mar 86	Ra-226	4.1	+ 1.2	6.0
		Ra-228	12.4	+ 3.7	4.7
Water (pCi/l)	4 Apr 86	I-131 (low level)	9.0	+ 12.0	8.0
Air (pCi/l)	25 Apr 86	Gross Alpha	15.0	+ 10.0	15.3
		Gross Beta	47.0	+ 10.0	36.0
		Cs-137	10.0	+ 10.0	14.7
Water (pCi/l)	9 May 86	Sr-89	5.0	+ 10.0	5.0
		Sr-90	5.0	+ 3.0	5.0
Water (pCi/l)	23 May 86	Gross Alpha	8.0	+ 10.0	9.7
		Gross Beta	15.0	+ 10.0	14.7

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Sample Type	Sample Date	Analysis	Concentration		UHL Results
			Known Value		
Water (pCi/l)	6 Jun 86	Co-60	66.0	+ 10.0	60.0
		Cs-134	49.0	+ 10.0	44.3
Water (pCi/l)	13 Jun 86	H ₃	3125	+ 720	1217
Water (pCi/l)	24 Jun 86	Gross Alpha	3.0	+ 10.0	4.3
		Gross Beta	7.0	+ 10.0	8.3
Milk (pCi/l)	27 Jun 86	Sr-90	16.0	+ 3.0	15.0
		I-131	41.0	+ 12.0	40.0
		Cs-137	31.0	+ 10.0	35.0
		K-40	1600	+ 160	1928
Water (pCi/l)	18 Jul 86	Gross Alpha	6.0	+ 10.0	6.0
		Gross Beta	18.0	+ 10.0	18.3
Water (pCi/l)	8 Aug 86	I-131	45.0	+ 12.0	33.3
Air (pCi/l)	12 Sep 86	Gross Alpha	22.0	+ 10.0	24.3
		Gross Beta	66.0	+ 10.0	70.0
		Cs-137	22.0	+ 10.0	18.0
Water (pCi/l)	12 Sep 86	Ra-226	6.1	+ 1.8	8.9
		Ra-228	9.1	+ 2.7	10.0

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Sample Type	Sample Date	Analysis	Concentration		UHL Results
			Known Value		
Water (pCi/l)	19 Sep 86	Gross Alpha	15.0	+ 10.0	15.3
		Gross Beta	8.0	+ 10.0	9.0
Water (pCi/l)	10 Oct 86	Co-60	31.0	+ 10.0	34.0
		Zn-65	85.0	+ 10.0	76.0
		Cs-134	28.0	+ 10.0	23.3
		Cs-137	44.0	+ 10.0	47.0
Water (pCi/l)	17 Oct 86	H ₃	5973	+ 1194	2132
Milk (pCi/l)	22 Oct 86	Gross Alpha	40.0	+ 20.0	37.3
		Ra-226	6.0	+ 1.8	7.5
		Ra-228	5.0	+ 1.5	4.8
		Gross Beta	51.0	+ 10.0	51.0
		Sr-89	10.0	+ 10.0	9.0
		Sr-90	4.0	+ 3.0	4.0
Water (pCi/l)	31 Oct 86	Sr-90	0	+ 3.0	2.0
		I-131	49.0	+ 12.0	46.0
		Cs-137	39.0	+ 10.0	45.0
		K-40	1565	+ 156	1733
H ₂ O (pCi/l)	21 Nov 86	Gross Alpha	20.0	+ 10.0	16.7
		Gross Beta	20.0	+ 10.0	18.3