

WOLF CREEK GENERATING STATION

Burlington, Kansas

July 1, 1984 - December 31, 1984

Medium or Pathway Sampled	Duplicate or Split Sample	Location	Distance and Direction	Date	State Results	Licensee Results
FOOD PRODUCTS Garden vegetables	Duplicate	Hermon's garden	360° 1 mile	9/18/84 9/24/84	Nothing above detection limits. I-131 less than 60 pCi/Kg Sr 89 & Sr 90 less than .5 pCi/kg	in pCi/gm(WET) Be-7 .526 ± .111 K-40 4.02 ± .40
SHORELINE SEDIMENT	Duplicate	WCGS discharge core	315° .5 mile	10/8/84	Sr 89 0.9 ± 0.5 pCi/gm Sr-90 less than 0.2 pCi/gm Nothing else above detection limits.	in pCi/gm(DRY): Cs-137 .224 ± .022 Ra 226: 2.39 ± 0.43 Th-228: 1.36 ± 0.14 K-40: 11.4 ± 1.1

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AIRBORNE particulate	Duplicate	Hartford (Control)	284° 15.0 Miles	7-3-84	pCi/m ³ -	pCi/M ³ X E-2 2.1 ± 0.4*
				7-10-84	-	2.9 ± 0.4
				7-18-84	-	2.7 ± 0.3
				7-24-84	-	3.9 ± 0.5
				7-31-84	-	3.9 ± 0.5
				8-7-84	.260 ± .010	1.8 ± 0.3*
				8-14-84	1.610 ± .02	1.6 ± 0.3*
				8-21-84	.307 ± .009	1.4 ± 0.3*
				8-28-84	.426 ± .011	1.3 ± 0.3*
				9-4-84	.709 ± .014	3.1 ± 0.4
				9-11-84	.357 ± .011	3.7 ± 0.4
				9-18-84	.871 ± .016	2.2 ± 0.3
				9-25-84	.197 ± .008	3.0 ± 0.3**
				10-02-84	.498 ± .005	3.7 ± 0.4**
				10-9-84	.741 ± .014	3.7 ± 0.5
				10-16-84	.097 ± .006	2.0 ± 0.3
				10-23-84	.288 ± .009	2.8 ± 0.4
				10-30-84	.073 ± .006	2.4 ± 0.4
				11-6-84	.430 ± .010	2.4 ± 0.4
				11-13-84	.106 ± .006	2.9 ± 0.4
				11-20-84	.003 ± .003***	2.1 ± 0.4
				11-27-84	.465 ± .012	2.4 ± 0.4
				12-4-84	.465 ± .012	3.3 ± 0.4
				12-11-84	.316 ± .009	5.0 ± 0.4
				12-18-84	.052 ± .004	3.5 ± 0.4
				12-26-84	.062 ± .004	3.4 ± 0.3
				1-2-85	.060 ± .004	4.0 ± 0.4

*Licensee values invalid due to a problem with air leakage around charcoal cartridges

**Licensee air sample taken on 9-26-84

**Licensee air sample taken on 10-3-84

***State air samples taken on 11-19-84

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AIRBORNE particulate	Duplicate	Sharpe	360 ^a 2.8 mi		pCi/m ³	pCi/M ³ X E-2
				7-3-84	.113 ± .006	1.7 ± 0.3*
				7-10-84	.230 ± .004	1.4 ± 0.3*
				7-18-84	.373 ± .005	1.4 ± 0.3*
				7-24-84	.747 ± 0.15	1.1 ± 0.3*
				7-31-84	.756 ± 0.15	3.2 ± 0.4
				8-7-84	.220 ± 0.10	3.4 ± 0.4
				8-14-84	.580 ± 0.10	3.1 ± 0.4
				8-21-84	.296 ± .010	4.0 ± 0.4
				8-28-84	.340 ± .010	4.1 ± 0.4
				9-4-84	.208 ± .008	3.3 ± 0.4
				9-11-84	.205 ± .008	3.9 ± 0.4
				9-18-84	.154 ± .007	2.3 ± 0.3
				9-25-84	.083 ± .006	3.2 ± 0.3**
				10-2-84	.271 ± .004	3.6 ± 0.4**
				10-9-84	.418 ± .012	3.5 ± 0.5
				10-16-84	.069 ± .005	2.1 ± 0.4
				10-23-84	.144 ± .007	2.8 ± 0.4
				10-30-84	.061 ± .005	2.8 ± 0.4
				11-6-84	.147 ± .007	2.4 ± 0.4
				11-13-84	.169 ± .007	2.2 ± 0.3
				11-20-84	.059 ± .006***	1.7 ± 0.3
				11-27-84	.146 ± .006	3.2 ± 0.4
				12-4-84	.242 ± .008	3.3 ± 0.4
				12-11-84	.251 ± .008	4.7 ± 0.4
				12-18-84	.086 ± .005	3.3 ± 0.4
				12-26-84	.104 ± .006	4.1 ± 0.4
				1-2-85	.076 ± .006	3.3 ± 0.4

*Licensee values invalid due to a problem with air leakage around charcoal cartridges

**Licensee air samples taken on 9-26-84
Licensee air samples taken on 10-3-84

***State air sample taken on 11-19-84

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July 1, 1984 - December 31, 1984

Medium or Pathway Sampled	Duplicate or Split Sample	Location	Distance and Direction	Date	State Results	Licensee Results	
AIRBORNE particulates gamma isotopic		Hartford (Control)	285° 15.0 miles	3rd Quarter 4th Quarter	Nothing above detection limits for monthly gamma composites 7/1/84-12/31/84	(Be-7) 8.56 ± 1.2 E-2 (Be-7) 6.29 ± 0.63 E-2	
		Sharpe	360° 2.8 mi.	3rd Quarter 4th Quarter		(Be-7) 1.0 ± 0.10 E-1 (K-40) 8.97 ± 3.89 E-2 (Be-7) 7.00 ± 0.72 E-2	
		Hartford	285° 15.0 miles	No radiodine was found above detection limits for licensee or state analyses for 7/1/84-12/31/84 at either location.			
		Sharpe	360° 2.8 miles				
AIRBORNE radioiodines	duplicate						
WATERBORNE Surface water gamma & quarterly tritium	duplicate	John Redmond Reservoir	270° 3.5 miles	Monthly samples collected on the same day	Gamma: Nothing above detection limits for monthly Tritium:	Gamma: Nothing above detection limits for monthly samples.	
				3rd Quarter 4th Quarter	0.0 ± 0.2 nCi/l 0.2 ± 0.2 nCi/l	Tritium: nothing above detection limits for samples.	

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Tritium	split	WCGS discharge cove	315° .5 mile	Monthly samples 3rd quarter 4th quarter	Gamma: nothing above detection limits for monthly samples. Tritium: 0.2 ± 0.2 nCi/l 0.0 ± 0.2 nCi/l	147 ± 15 pCi/l K-40 on 9-18-84; no other nuclides found at detection
INGESTION: MILK	Duplicate	Redding Dairy	45° 5 miles	Monthly samples taken on same day	gamma isotopic and radioiodines: nothing above detection limits Analyzed for I-131, Cs-137, and Ba-140. Sr-89/Sr-90 determinations on July sample. (Sr-90: 2.3 ± .5 pCi/l)	K-40 found as follows 7/84 1180 ± 120 pCi/l 8/84 1150 ± 120 pCi/l 9/84 1330 ± 130 pCi/l 10/84 1200 ± 120 pCi/l 11/84 1200 ± 130 pCi/l 12/84 1340 ± 130 pCi/l
FISH	Split	Wolf Creek Reservoir		10/13/84	Channel catfish/ wiper hybrid: Nothing above detection limits	K-40 in pCi/gm: Channel Catfish/ Wiper Hybrid 3.92 ± 0.39 No other nuclides above detection limits.

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FOOD PRODUCTS Garden vegetables	Duplicate	Hermon's garden	360° 1 mile	9/18/84 9/24/84	Nothing above detection limits. I-131 less than 60 pCi/Kg Sr 89 & Sr 90 less than .5 pCi/kg	in pCi/gm(WET) Be-7 .526 ± .111 K-40 4.02 ± .40
SHORELINE SEDIMENT	Duplicate	WCGS discharge core	315° .5 mile	10/8/84	Sr 89 0.9 ± 0.5 pCi/gm Sr-90 less than 0.2 pCi/gm Nothing else above detection limits.	in pCi/gm(DRY): Cs-137 .224 ± .022 Ra 226: 2.39 ± 0.43 Th-228: 1.36 ± 0.14 K-40: 11.4 ± 1.1

WOLF CREEK GENERATING STATION

Burlington, Kansas

October, 1983 - December, 1984

Sample Type: TLD-Direct radiation

Duplicate or Split Sample: Duplicate

Location NRC/KG&E/KS	Distance and Direction	Date	NRC Results ^a	Licensee Results ^b	State Results ^c
3/2/--	360° 2.8 miles	10/83 - 1/84	21.7 ± 4.6	16.0 ± 0.9	---
		1/84 - 4/84	15.4 ± 3.9	15.9 ± 0.1	---
		4/84 - 7/84	23.4 ± 3.5(g)	16.3 ± 0.3	---
		7/84 - 10/84	15.4 ± 3.8	17.2 ± 0.6	---
4/1/A1	355° 1.6 miles	10/84 - 1/85	19.6 ± 5.6	18.3 ± 0.6	---
		10/83 - 1/84	17.4 ± 4.1	16.6 ± 1.2	19.5 ± 2.7
		1/84 - 4/84	18.5 ± 4.3	17.8 ± 0.4	19.0 ± 2.5
		4/84 - 7/84	23.5 ± 3.5(g)	18.0 ± 0.9	17.8 ± 2.8
		7/84 - 10/84	16.6 ± 4.0	18.0 ± 0.4	19.5 ± 1.9
8/-/E1	90° 1.7 miles	10/84 - 1/85	20.1 ± 5.7	18.8 ± 0.1	19.2 ± 2.5
		10/83 - 1/84	23.4 ± 4.8	---	18.9 ± 2.3
		1/84 - 4/84	18.2 ± 4.3	---	17.7 ± 2.8
		4/84 - 7/84	22.4 ± 3.4(g)	---	17.9 ± 2.4
		7/84 - 10/84	16.0 ± 3.9	---	19.0 ± 2.4
10/14/G1	13.7° 2.5 miles	10/84 - 1/85	20.2 ± 5.7	---	18.8 ± 2.7
		10/83 - 1/84	25.0 ± 5.0	18.1 ± 0.6	20.1 ± 2.3
		1/84 - 4/84	19.7 ± 4.5	18.4 ± 1.3	19.1 ± 2.7
		4/84 - 7/84	23.7 ± 3.6(g)	17.7 ± 0.3	19.3 ± 2.5
		7/84 - 10/84	17.5 ± 4.1	19.8 ± 0.6	21.1 ± 2.2
12/20/--	184° 3.3 miles	10/84 - 1/85	20.7 ± 6.7	20.3 ± 0.1	20.1 ± 3.8
		10/83 - 1/84	21.5 ± 4.6	17.4 ± 0.0	---
		1/84 - 4/84	18.6 ± 4.3	17.7 ± 0.4	---
		4/84 - 7/84	23.7 ± 3.6(g)	17.2 ± 0.7	---
		7/84 - 10/84	15.1 ± 3.8	18.4 ± 0.1	---
10/84 - 1/85	20.2 ± 5.7	19.0 ± 0.4	---		

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Sample Type: TLD-Direct radiation

Duplicate or Split Sample: Duplicate

Location NRC/KG&E/KS	Distance and Direction	Date	NRC Results ^a	Licensee Results ^b	State Results ^c
13/29/K1	213° 2.9 miles	10/83 - 1/84	17.4 ± 4.1	14.7 ± 0.6	19.3 ± 2.5
		1/84 - 4/84	18.0 ± 4.2	14.6 ± 0.0	17.7 ± 2.8
		4/84 - 7/84	24.4 ± 3.7(g)	14.2 ± 0.4	18.2 ± 2.7
		7/84 - 10/84	15.2 ± 3.8	15.3 ± 1.6	20.0 ± 2.4
		10/84 - 1/85	20.8 ± 5.7	15.1 ± 0.1	19.2 ± 3.4
14/27/L1	233° 2.4 miles	10/83 - 1/84	22.4 ± 4.7	16.6 ± 0.1	18.1 ± 2.8
		1/84 - 4/84	18.1 ± 4.3	17.3 ± 0.1	15.8 ± 2.6
		4/84 - 7/84	23.2 ± 3.5(g)	16.9 ± 0.6	17.0 ± 2.9
		7/84 - 10/84	15.6 ± 3.9	18.2 ± 0.9	17.6 ± 2.1
		10/84 - 1/85	19.6 ± 5.6	17.8 ± 0.0	17.4 ± 3.6
17/25/--	270° 3.4 miles	10/83 - 1/84	19.7 ± 4.4	13.5 ± 1.3	---
		1/84 - 4/84	13.9 ± 3.7	14.0 ± 0.2	---
		4/84 - 7/84	19.2 ± 2.9(g)	13.2 ± 0.1	---
		7/84 - 10/84	12.4 ± 3.5	14.5 ± 0.1	---
		10/84 - 1/85	17.0 ± 5.4	14.3 ± 0.4	---
26/6/-	67° 4.3 miles	10/83 - 1/84	22.2 ± 4.7	15.7 ± 0.6	---
		1/84 - 4/84	16.2 ± 4.0	15.3 ± 0.6	---
		4/84 - 7/84	22.1 ± 3.3(g)	15.8 ± 0.1	---
		7/84 - 10/84	14.4 ± 3.7	17.2 ± 1.0	---
		10/84 - 1/85	19.3 ± 5.6	18.0 ± 0.1	---
18/15/-	110° 4.5 miles	10/83 - 1/84	22.9 ± 4.8	16.6 ± 0.5	---
		1/84 - 4/84	18.5 ± 4.3	17.9 ± 0.6	---
		4/84 - 7/84	23.2 ± 3.5(g)	16.0 ± 0.1	---
		7/84 - 10/84	16.7 ± 4.0	18.3 ± 0.1	---
		10/84 - 1/85	18.8 ± 5.6	19.1 ± 2.4	---

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Duplicate or Split Sample: Duplicate

Location NRC/KG&E/KS	Distance and Direction	Date	NRC Results ^a	Licensee Results ^b	State Results ^c
36/23/--	224° 4.8 miles	10/83 - 1/84	20.5 ± 4.5	15.7 ± 0.4	---
		1/84 - 4/84	16.4 ± 4.0	16.7 ± 0.1	---
		4/84 - 7/84	missing	---	---
		7/84 - 10/84	14.3 ± 3.7	---	---
40/40/P2	285° 15 miles	10/84 - 1/85	18.3 ± 5.5	16.8 ± 0.4	---
		10/83 - 1/84	20.5 ± 4.5	15.7 ± 0.3	17.4 ± 2.4
		1/84 - 4/84	14.6 ± 3.8	15.2 ± 0.3	16.5 ± 2.6
		4/84 - 7/84	20.3 ± 3.0(g)	15.3 ± 0.4	18.2 ± 2.7
		7/84 - 10/84	13.3 ± 3.6	15.1 ± 0.6	16.0 ± 1.8
42/39/-	345° 13. miles	10/84 - 1/85	16.3 ± 5.4	16.1 ± 0.1	16.6 ± 3.7
		10/83 - 1/84	19.7 ± 4.4	16.8 ± 0.6	---
		1/84 - 4/84	17.5 ± 4.2	16.4 ± 0.1	---
		4/84 - 7/84	24.4 ± 3.7(g)	16.4 ± 0.1	---
		7/84 - 10/84	16.9 ± 4.0	17.6 ± 0.8	---
-/9/01	60° 2 miles	10/84 - 1/85	20.8 ± 5.7	17.8 ± 0.1	---
		10/83 - 1/84	---	15.9 ± 1.1	18.3 ± 2.5
		1/84 - 4/84	---	16.1 ± 0.6	16.9 ± 2.8
		4/84 - 7/84	---	16.3 ± 0.1	17.8 ± 2.5
		7/84 - 10/84	---	16.8 ± 0.1	18.0 ± 2.3
-/26/M1	240° 2.5 miles	10/84 - 1/85	---	18.1 ± 1.1	18.3 ± 3.2
		10/85 - 1/84	---	15.7 ± 0.3	17.8 ± 2.3
		1/84 - 4/84	---	16.1 ± 0.3	15.4 ± 2.5
		4/84 - 4/84	---	15.6 ± 1.1	16.9 ± 2.5
		7/84 - 7/84	---	16.5 ± 0.7	17.4 ± 2.1
		10/84 - 1/85	---	16.7 ± 0.3	17.3 ± 3.8

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--/32/P1	300° 2.75 miles	10/83 - 1/84		17.0 ± 0.4	19.1 ± 2.6
		1/84 - 4/84		16.8 ± 0.2	22.1 ± 3.1
		4/84 - 7/84		17.2 ± 1.2	15.7 ± 2.5
		7/84 - 10/84		18.2 ± 1.2	18.6 ± 2.1
		10/84 - 1/85		17.8 ± 0.8	18.7 ± 3.0
--/31/R1	355° 2.0 miles	10/83 - 1/84		16.4 ± 0.0	15.9 ± 2.8
		1/84 - 4/84		15.8 ± 0.1	16.1 ± 2.6
		4/84 - 7/84		15.3 ± 0.4	16.6 ± 2.5
		7/84 - 10/84		16.9 ± 1.1	17.4 ± 2.1
		10/84 - 1/85		16.7 ± 0.1	15.5 ± 0.3

(g) indicates NRC gross data, not net, available only.

- NRC results expressed as normalized net 90-day quarter data ± total uncertainty, except where indicated as gross data (g).
- Licensee results expressed as a normalized 90-day quarter average ± one standard deviation of two dosimeters at each location.
- State results expressed as normalized 90-day quarter average ± total uncertainty. Three dosimeters are at each location.

18/H