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AMERICAN NUCLEAR CORPORATION

August 31, 1989

JOHN C. FERGUSON, PRESIDENT
TELEPHONE (307) 265-7912

RETURN ORIGINAL TO PDR, HQ

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CASPER, WYOMING 82602

U.S. NUCLEAR REGULATORY COMMISSION
Region IV
Uranium Recovery Field Office
P.O. Box 25325
Denver, CO 80225



Gentlemen:

In accordance with the license conditions of Source Materials License, SUA-667 and in compliance with Title 10 CFR 40.65, American Nuclear Corporation submits the Semi-Annual Report for the first half of 1989.

The format of this report has been changed to take into consideration Amendment No. 35, License Condition 29 requirements.

If you have any questions, please do not hesitate to contact me.

Sincerely,

William C. Salisbury
William C. Salisbury
Manager, Special Projects

WCS/mk

Enclosures - 5

DESIGNATED ORIGINAL

Certified By *Mary C. Ford*

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89-0965

SEMI-ANNUAL REPORT
ON
RADIOACTIVE EFFLUENT PER
10 CFR 40.65
BY
AMERICAN NUCLEAR CORPORATION

January - June, 1989

89-0965

AMERICAN NUCLEAR CORPORATION
Gas Hills Project

Environmental TLD Summary For The 1st & 2nd Quarters 1989

All Readings in mR

Sample Number	First Quarter	Second Quarter	Total	Average per Quarter	Sample Location
2	59	76	135	67.5	upwind restricted area boundary
3	NO SAMPLE REQUIRED				Puddle Springs Ranch
4	95	120	215	108.5	downwind restricted area boundary
5	105	130	235	117.5	NE corner of restricted area boundary
6	NO SAMPLE REQUIRED				LOCO Shop
7	105	96	201	100.5	Office
8	25	20	45	22.5	Control

AMERICAN NUCLEAR CORPORATION
Gas Hills Project

Soil Sample Results For Spring 1989

Same Location As The Low Volume Air Samples

Sample Location	Radionuclide	Concentration uCi/gm	Error Estimate +/- uCi/gm	LLD uCi/gm
2 upwind restricted area boundary	Radium 226	9.3×10^{-6}	0.2×10^{-6}	4×10^{-8}
	Lead 210	3.5×10^{-6}	0.6×10^{-6}	4×10^{-8}
	U natural	10.6×10^{-6}	NA	4×10^{-8}
3 Puddle Springs Ranch	Radium 226	NO SAMPLE REQUIRED		
	Lead 210	NO SAMPLE REQUIRED		
	U natural	NO SAMPLE REQUIRED		
4 downwind restricted area boundary	Radium 226	12.6×10^{-6}	0.3×10^{-6}	4×10^{-8}
	Lead 210	5.2×10^{-6}	0.6×10^{-6}	4×10^{-8}
	U natural	15.1×10^{-6}	NA	4×10^{-8}
5 NE corner of restricted area boundary	Radium 226	35.6×10^{-6}	0.5×10^{-6}	4×10^{-8}
	Lead 210	14.0×10^{-6}	0.9×10^{-6}	4×10^{-8}
	U natural	15.1×10^{-6}	NA	4×10^{-8}
6 LOCO Shop Background	Radium 226	NO SAMPLE REQUIRED		
	Lead 210	NO SAMPLE REQUIRED		
	U natural	NO SAMPLE REQUIRED		

AMERICAN NUCLEAR CORPORATION
Gas Hills Project

Vegetation Sample Results For 1989

Sample Location			Radioisotope	Concentration uCi/kg	Error Estimate +/- uCi/kg	LLD uCi/kg
#1	June	1989	Radium 226	1.3×10^{-4}	0.01×10^{-4}	5×10^{-8}
	September		Radium 226			
	June		Lead 210	1.8×10^{-4}	0.01×10^{-4}	1×10^{-6}
	September		Lead 210			
#2	June	1989	Radium 226	9.2×10^{-5}	0.7×10^{-5}	5×10^{-8}
	September		Radium 226			
	June		Lead 210	2.3×10^{-5}	0.5×10^{-5}	1×10^{-6}
	September		Lead 210			
#3	June	1989	Radium 226	5.3×10^{-5}	0.5×10^{-5}	5×10^{-8}
	September		Radium 226			
	June		Lead 210	1.6×10^{-4}	0.01×10^{-4}	1×10^{-6}
	September		Lead 210			

AMERICAN NUCLEAR CORPORATION
Gas Hills Project

First Quarter 1989 Water Results

Sample Location	Type	Radionuclide	Concentration uCi/ml	Error Estimate +/- uCi/ml	LLD uCi/ml
Well #TP2-2	Ground	Radium 226	combined		
		Radium 228	18.8×10^{-9}	3.5×10^{-9}	1×10^{-9}
		Thorium 230	13.9×10^{-9}	4.0×10^{-9}	2×10^{-10}
		Gross Alpha	20.0×10^{-9}	4.4×10^{-9}	1×10^{-9}
		U natural	4.0×10^{-7}	NA	2×10^{-10}
Well #TP2-3	Ground	Radium 226	combined		
		Radium 228	10.3×10^{-9}	1.6×10^{-9}	1×10^{-9}
		Thorium 230	15.3×10^{-9}	3.7×10^{-9}	2×10^{-10}
		Gross Alpha	26.0×10^{-9}	5.1×10^{-9}	1×10^{-9}
		U natural	3.0×10^{-7}	NA	2×10^{-10}
Well #R-4	Ground	Radium 226	combined		
		Radium 228	111×10^{-9}	4.2×10^{-9}	1×10^{-9}
		Thorium 230	205×10^{-9}	5.3×10^{-9}	2×10^{-10}
		Gross Alpha	485×10^{-9}	22×10^{-9}	1×10^{-9}
		U natural	2.7×10^{-6}	NA	2×10^{-10}
Willow Springs	Surface	Radium 226	SHORT LIST REQUIRED		
		Thorium 230			
		Lead 210			
		Polonium 210			
		U natural			

AMERICAN NUCLEAR CORPORATION
Gas Hills Project

Second Quarter 1989 Water Results

Sample Location	Type	Radionuclide	Concentration uCi/ml	Error Estimate +/- uCi/ml	LLD uCi/ml
Well #TP2-2	Ground	Radium 226	combined		
		Radium 228	SHORT LIST REQUIRED		1 x 10 ⁻⁹
		Thorium 230			2 x 10 ⁻¹⁰
		Gross Alpha			1 x 10 ⁻⁹
		U natural			2 x 10 ⁻¹⁰
Well #TP2-3	Ground	Radium 226	combined		
		Radium 228	SHORT LIST REQUIRED		1 x 10 ⁻⁹
		Thorium 230			2 x 10 ⁻¹⁰
		Gross Alpha			1 x 10 ⁻⁹
		U natural			2 x 10 ⁻¹⁰
Well #R-4	Ground	Radium 226	combined		
		Radium 228	SHORT LIST REQUIRED		1 x 10 ⁻⁹
		Thorium 230			2 x 10 ⁻¹⁰
		Gross Alpha			1 x 10 ⁻⁹
		U natural			2 x 10 ⁻¹⁰
Willow Springs	Surface	Radium 226	SHORT LIST REQUIRED		
		Radium 228			
		Thorium 230			
		Gross Alpha			
		U natural			

AMERICAN NUCLEAR CORPORATION
 Gas Hills Project
 Water Analysis 1989 Summary

Sample Quarter Well I.D.	4th 1988 TP2-2	1st 1989 TP2-2	2nd 1989 TP2-2	3rd 1989 TP2-2	4th 1989 TP2-2	Detection Limit
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Parameter mg/l: Short List

Water Level - feet	38.78	39.00	39.51			
Chloride	57.3	60.3	56.4			0.10
Nitrate	33.0	25.0	26.0			0.01
Sulfate	1,029	965	955			0.50
pH - std. unit	7.77	7.39	7.38			1-14
TDS	2,044	1,937	1,993			1.0

Parameter mg/l: Long List

Beryllium	< 0.05					0.05
Cadmium	< 0.01					0.01
Cyanide	< 0.005					0.005
Nickel	0.10					0.05
Selenium	0.007					0.001
Vanadium	< 0.10					0.10
Uranium	0.662					0.0003
Gross Alpha - pCi/l	20.0					1.0
Precision +/-	4.4					
Radium 226+228 - pCi/l	18.8					1.0
Precision +/-	3.5					
Thorium 230 - pCi/l	13.90					0.20
Precision +/-	4.0					

AMERICAN NUCLEAR CORPORATION
Gas Hills Project
Water Analysis 1989 Summary

Sample Quarter	4th 1988	1st 1989	2nd 1989	3rd 1989	4th 1989	Detection
Well I.D.	TP2-3	TP2-3	TP2-3	TP2-3	TP2-3	Limit

Parameter mg/l: Short List

Water Level - feet	107.92	107.95	107.82			
Chloride	16.7	19.9	20.5			0.10
Nitrate	2.60	1.90	2.12			0.01
Sulfate	266	290	296			0.50
pH - std. unit	7.71	7.64	7.51			1-14
TDS	754	680	683			1.0

Parameter mg/l: Long List

Beryllium	< 0.05					0.05
Cadmium	< 0.01					0.01
Cyanide	< 0.005					0.005
Nickel	< 0.05					0.05
Selenium	0.030					0.001
Vanadium	< 0.10					0.10
Uranium	0.417					0.0001
Gross Alpha - pCi/l		25.0				1.0
Precision +/-		5.1				
Radium 226+228 - pCi/l		10.3				1.0
Precision +/-		1.6				
Thorium 230 - pCi/l		15.30				0.20
Precision +/-		3.7				

AMERICAN NUCLEAR CORPORATION
Gas Hills Project
Water Analysis 1989 Summary

Sample Quarter	4th 1988	1st 1989	2nd 1989	3rd 1989	4th 1989	Detection
Well I.D.	R-4	R-4	R-4	R-4	R-4	Limit

Parameter mg/l: Short List

Water Level - feet	55.21	56.75	59.86			
Chloride	321.0	314.0	303.0			0.10
Nitrate	1.68	1.54	1.70			0.01
Sulfate	7,211	7,054	6,920			0.50
pH - std. unit	3.50	3.76	3.67			1-14
TDS	10,022	9,598	9,987			1.0

Parameter mg/l: Long List

Beryllium		0.16				0.05
Cadmium		0.10				0.01
Cyanide	<	0.005				0.005
Nickel		2.60				0.05
Selenium		0.186				0.001
Vanadium		0.46				0.10
Uranium		3.969				0.0003
Gross Alpha - pCi/l		485.0				1.0
Precision +/-		22.0				
Radium 226+228 - pCi/l		111				1.0
Precision +/-		4.2				
Thorium 230 - pCi/l		205				0.20
Precision +/-		5.3				

AMERICAN NUCLEAR CORPORATION
 Gas Hills Project
 Water Analysis 1989 Summary

Sample Quarter	4th 1988	1st 1989	2nd 1989	3rd 1989	4th 1989	Detection
Sample I.D.	Willow Springs	Willow Springs	Willow Springs	Willow Springs	Willow Springs	Limit

Parameter mg/l: Short List

Water Level	surface	N	surface	N	surface	
Chloride	124.0	O	146.0	O		0.10
Nitrate	1.47		2.8			0.01
Sulfate	1,631	S	1,746	S		0.50
pH - std. unit	7.17	A	7.13	A		1-14
TDS	3,172	N	3,359	M		1.0
		P		P		
		L		L		
		E		E		
		R		R		
		E		E		
		Q		Q		
		U		U		
		I		I		
		R		R		
		E		E		
		D		D		

AMERICAN NUCLEAR CORPORATION
 QUARTERLY PERIMETER AIR MONITORING

SAMPLE LOCATION: CORRALS #2

Report Date: 05-18-89

Quarter Units	Radionuclide	Conc. uCi/ml	Error Est uCi/ml	L.L.D. uCi/ml	MPC uCi/ml	% MPC %
89-4495	U-nat	1.67e-14	N/A	1.00e-16	5.00e-12	3.34e-01
First Quarter 1989	Th-230	1.57e-15	1.28e-15	1.00e-16	8.00e-14	1.96e+00
12-31-88	Ra-226	7.85e-16	1.07e-16	1.00e-16	3.00e-12	2.62e-02
to	Pb-210	1.11e-14	1.36e-15	2.00e-15	4.00e-12	2.77e-01
03-31-89			Rn222 W.L.			
Vol. 5.30e9 ml	Rn-222 Bcg	7.00e-10	7.78e-03	1.00e-10	3.00e-09	2.33e+01
89-8174	U-nat	4.49e-15	N/A	1.00e-16	5.00e-12	8.98e-02
Second Quarter 1989	Th-230	9.63e-16	4.99e-16	1.00e-16	8.00e-14	1.20e+00
04-1-89	Ra-226	2.25e-15	2.14e-16	1.00e-16	3.00e-12	7.49e-02
to	Pb-210	6.10e-15	1.03e-15	2.00e-15	4.00e-12	1.52e-01
07-01-89			Rn222 W.L.			
Vol. 5.30e9 ml	Rn-222 Bcg	5.00e-10	5.56e-03	1.00e-10	3.00e-09	1.67e+01

AMERICAN NUCLEAR CORPORATION
 QUARTERLY PERIMETER AIR MONITORING

SAMPLE LOCATION: WELL 13 #4
 Report Date: 05-18-89

Quarter Units	Radionuclide	Conc. uCi/ml	Error Est uCi/ml	L.L.D. uCi/ml	MPC uCi/ml	% MPC %
89-4496	U-nat	8.81e-15	N/A	1.00e-16	5.00e-12	1.76e-01
First Quarter 1989	Th-230	<1.00e-16	N/A	1.00e-16	8.00e-14	1.25e-01
12-31-88	Ra-226	1.78e-15	1.78e-16	1.00e-16	3.00e-12	5.94e-02
to	Pb-210	1.29e-14	1.46e-15	2.00e-15	4.00e-12	3.22e-01
03-31-89			Rn222 W.L.			
Vol. 5.30e9 ml	Rn-222 above bg	3.00e-10	3.33e-03	1.00e-10	3.00e-09	1.00e+01
89-8176	U-nat	4.71e-15	N/A	1.00e-16	5.00e-12	9.42e-02
Second Quarter 1989	Th-230	5.10e-15	1.28e-15	1.00e-16	8.00e-14	6.37e+00
04-1-89	Ra-226	3.78e-15	2.85e-16	1.00e-16	3.00e-12	1.26e-01
to	Pb-210	8.38e-15	1.11e-15	2.00e-15	4.00e-12	2.10e-01
07-01-89			Rn222 W.L.			
Vol. 5.30e9 ml	Rn-222 above bg	1.30e-09	1.44e-02	1.00e-10	3.00e-09	4.33e+01

AMERICAN NUCLEAR CORPORATION
 QUARTERLY PERIMETER AIR MONITORING

SAMPLE LOCATION: NECORA #5
 Report Date: 05-18-89

Quarter Units	Radionuclide	Conc. uCi/ml	Error Est uCi/ml	L.L.D. uCi/ml	MPC uCi/ml	% MPC %
88-4497	U-nat	6.30e-15	N/A	1.00e-16	5.00e-12	1.26e-01
First Quarter 1989	Th-230	<1.00e-16	N/A	1.00e-16	8.00e-14	1.25e-01
12-31-88	Ra-226	1.43e-15	2.14e-16	1.00e-16	3.00e-12	4.75e-02
to	Pb-210	7.17e-15	1.18e-15	2.00e-15	4.00e-12	1.79e-01
03-31-89			Rn222 W.L.			
Vol. 5.30e9 ml	Rn222 above bg	1.20e-09	1.33e-02	1.00e-10	3.00e-09	4.00e+01
89-8175	U-nat	3.69e-15	N/A	1.00e-16	5.00e-12	7.39e-02
Second Quarter 1989	Th-230	3.92e-15	1.25e-15	1.00e-16	8.00e-14	4.90e+00
04-1-89	Ra-226	3.89e-15	3.21e-16	1.00e-16	3.00e-12	1.30e-01
to	Pb-210	3.99e-15	9.63e-16	2.00e-15	4.00e-12	9.98e-02
07-01-89			Rn222 W.L.			
Vol. 5.30e9 ml	Rn222 above bg	9.01e-10	1.00e-02	1.00e-10	3.00e-09	3.00e+01