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**QUARTERLY REPORT AIRBORNE URANIUM  
EMISSIONS STACKS/SCRUBBERS APRIL 4, 1989  
TO JULY 5, 1989 REF: 5409, 5411**

**08/18/89**

**DOE-FMPC/USEPA  
22  
REPORT**

ENCLOSURE 1

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QUARTERLY REPORT  
AIRBORNE URANIUM EMISSIONS STACKS/SCRUBBERS  
APRIL 4 TO JULY 5, 1989

FEDERAL FACILITIES COMPLIANCE AGREEMENT  
CLEAN AIR ACT SECTION - ITEM E

U.S. DEPARTMENT OF ENERGY  
FEED MATERIALS PRODUCTION CENTER  
FERNALD, OHIO

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QUARTERLY REPORT  
AIRBORNE URANIUM EMISSIONS STACKS/SCRUBBERS  
APRIL 4 TO JULY 5, 1989

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CLEAN AIR ACT SECTION - ITEM E

U.S. DEPARTMENT OF ENERGY  
FEED MATERIALS PRODUCTION CENTER  
FERNALD, OHIO

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AIRBORNE EMISSIONS REPORT FOR THE PERIOD 4/4/89 TO 7/5/89  
IN RESPONSE TO ITEM E OF THE CLEAN AIR ACT SECTION  
FEDERAL FACILITIES COMPLIANCE AGREEMENT

Introduction

This report is submitted in response to Item E of the Clean Air Act Section of the Federal Facilities Compliance Agreement. Specifically, the EPA has required the following action:

"U.S. DOE shall maintain records of monthly particulate matter emissions and shall provide U.S. EPA with quarterly reports."

The emissions of concern are considered to be particulate uranium. Air emissions at the FMPC are routinely analyzed for total uranium.

Dust Collector

There are forty-seven (47) dust collectors currently operational at the FMPC which handle uranium dust. Twenty-four (24) of these were operated sometime during the reporting period. All but one of the total are equipped with a single point particulate sampler. Dust Collector G9N1-1035 is equipped with a multiple point continuous isokinetic sampler. Sample points G9N1-1035D and S are in the same air emissions control system. G9N1-1035S measures the controlled emission to the atmosphere. G9N1-1035D measures the input to the control device; therefore, this point is not included in calculation of the quarterly air emissions summary. A sampler consists of a pleated paper filter in a cap-shaped holder. Air is drawn through the filter, leaving any particulates on the paper. At regular intervals, the filters are destructively analyzed for uranium.

Scrubbers

The major emission points not monitored at the FMPC are the streams which exit wet scrubber systems. Because of the high moisture content of the exhaust gas, conventional monitors cannot be used. In the case of a filter sampler, the paper quickly becomes saturated and restricts air flow. To date, a real-time monitor has not been found that can be used in the scrubber exhausts. Particulate emissions reports will include estimated uranium losses from the FMPC scrubber systems. These estimates are based on emissions factors obtained from earlier U.S. EPA Method V stack testing.

There are sixteen (16) scrubbers currently operational at the FMPC which handle uranium emissions. Emission factors have been calculated for eleven (11) of these. Thirteen (13) scrubbers were operated sometime during the reporting period. Emission factors are available for eight (8) of these. Emission estimates are included for these scrubbers. Emission factors for the remaining five (5) scrubbers are being developed.

Other Emissions

Vent points are not included in particulate emissions reports because uranium losses, if any, from these are non-detectable.

SUMMARY OF URANIUM EMISSIONS FROM PARTICULATE STACKS AND SCRUBBERS  
FOR THE PERIOD 4/4/89 TO 7/5/89

Emission Point Number	Control Equip.	Stack Sampler Status	U Emissions (kg)	
			Stack Total	% of FMPC Total
<b>Plant 1</b>				
001	G2-172	I	0.000518	0.014
002	G2-6042	I	0.010320	0.272
003	G2-76	I	N/O	0
005	G2-2	I	N/O	0
006	G2-64	I	N/O	0
007	G2-1	I	N/O	0
010	G2-6014	I	0.000451	0.012
015	G2-171	I	N/O	0
016	G2-235	I	0.0	0
Total Plant 1 Emissions			0.011289	0.298
<b>Plant 2/3</b>				
001		S	0.0	0
012	G1-856	I	0.008170	0.215
023	G1-94	I	N/O	0
092		S	0.0	0
093		S	0.0	0
Total Plant 2/3 Emissions			0.008170	0.215
<b>Plant 4</b>				
001	G4-7	I	N/O	0
002		S	0.0	0
003	G4-13	I	N/O	0
004	G4-14	I	0.061205	1.614
005	G4-2	I	N/O	0
006	G4-12	I	N/O	0
008	G4-1	I	N/O	0
009	G4-5	I	N/O	0
025	G4-4	I	0.001408	0.037
Talcum Cooling Vent		I	N/O	0
Total Plant 4 Emissions			0.062613	1.651

SUMMARY OF URANIUM EMISSIONS FROM PARTICULATE STACKS AND SCRUBBERS  
FOR THE PERIOD 4/4/89 TO 7/5/89

Emission Point Number	Control Equip.	Stack Sampler Status	U Emissions (kg)	
			Stack Total	% of FMPC Total
<b>Plant 5</b>				
2	G5-247	I	N/O	0
3	G5-248	I	0.000260	0.007
4	G5-249	I	Dismantled	0
5	G5-250	I	0.002825	0.075
9	G5-254	I	0.000976	0.026
10	G5-256	I	0.000424	0.011
13	G5-260	I	0.055179	1.455
14	G5-261	I	0.049893	1.315
15	G5A-100	I	0.037791	0.996
16	G5A-101	I	0.006390	0.168
17	G5-262	I	0.004982	0.131
18	G55-E100	I	N/O	0
19	G5-267	I	0.006566	0.173
E. Mold Cooling Booth		I	N/O	0
Graphite Breakup Booth		I	N/O	0
Remelt Furnace		S	0.000013	0.0003
<b>Total Plant 5 Emissions</b>			<u>0.165299</u>	<u>4.358</u>
<b>Plant 6</b>				
3 S ESP	G6-3578	I	0.0	0
6		S	0.0	0
Briquetting Scrubber		S	0.008280	0.218
Scrap Pickling		S	0.075400	1.988
<b>Total Plant 6 Emissions</b>			<u>0.083680</u>	<u>2.206</u>
<b>Plant 8</b>				
001	G43-27	I	0.112406	2.963
002 Rotary Kiln		S	0.55045	14.512
005 Primary Calciner		S	2.74545	72.380
006	G8-8035	I	0.003958	0.104
007 Oxidation No. 1		S	N/O	0
008	G8-7	I	N/O	0
009 Oxidation No. 2		S	N/O	0
010 Box Furnace		S	N/O	0
011	G43-29	I	0.000836	0.022
Drum Washer		S	0.001200	0.032
<b>Total Plant 8 Emissions</b>			<u>3.414300</u>	<u>90.013</u>

SUMMARY OF URANIUM EMISSIONS FROM PARTICULATE STACKS AND SCRUBBERS  
FOR THE PERIOD 4/4/89 TO 7/5/89

Emission Point Number	Control Equip.	Stack Sampler Status	U Emissions (kg)	
			Stack Total	% of FMPC Total
<b>Plant 9</b>				
-----				
001	G9E2-400	I	N/O	0
	G9N1-1035D	I	N/O	0
	G9N1-1035S	I	N/O	0
Zirnlo-Derby Pickling		S	0.006090	0.161
Total Plant 9 Emissions			<u>0.006090</u>	<u>0.161</u>
<b>Pilot Plant</b>				
-----				
015	G-1	I	N/O	0
016	G-2	I	N/O	0
R-14	735-13-7041	I	0.011970	0.316
R-50	735-13-7051	I	0.026389	0.696
Total Plant Pilot Plant Emissions			<u>0.038359</u>	<u>1.011</u>
<b>Laboratory</b>				
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001	G15-001	I	0.001008	0.027
Total Laboratory Emissions			<u>0.001008</u>	<u>0.027</u>
<b>D &amp; D Facility</b>				
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Total D & D Facility Emissions			S	0.002310 0.061

Summary of Monitored FMPC  
Air Emissions for the  
Second Quarter CY 1989

3.793118

KEY: I - Stack sampler is installed.  
S - Scrubber system emissions, where available, are estimated.

N/O = The dust collector and associated process sources were not operated during the reporting period.

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## FMPC Restoration - Environmental Compliance

Stack Discharge Report for the Period from April 4, 1989 to May 4, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			During This Reporting Period kg U	Sampling Interval	
Plant 1					
G2-64		Out of Service as of 3/6/89			
G2-76		Out of Service as of 3/6/89			
G2-1		Out of Service as of 3/6/89			
G2-2		Out of Service as of 3/6/89			
G2-171		Out of Service as of 3/6/89			
G2-172	3	1 Filter Change	N/O	3/25/89 to 4/22/89	0.000235
G2-235		Out of Service as of 3/6/89			
G2-6042	3	1 Filter Change	N/O	4/1/89 to 4/29/89	
G2-6014	3	1 Filter Change	0.000205	4/1/89 to 4/29/89	0.001474
Totals			0.000205		0.001709
Plant 2/3					
G1-94		Out of Service from 3/8/89 to 5/2/89			
G1-856		Out of Service from 3/8/89 to 5/2/89			
Totals			0.0		0.0
Plant 4					
G4-1		Out of Service as of 3/8/89			
G4-2		Out of Service as of 3/8/89			
G4-4	3	1 Filter Change	0.000484	3/11/89 to 4/8/89	0.001452
G4-5		Out of Service as of 3/8/89			
G4-7		Out of Service as of 3/8/89			
G4-12		Out of Service as of 3/8/89			
G4-13		Out of Service as of 3/8/89			
G4-14	3	1 Filter Change	0.025284	3/11/89 to 4/8/89	0.063071
Talcum cooling vent		Out of Service as of 3/8/89			
Totals			0.025768		0.064523

Status: 1 - Filter not inspected this period.

2 - Filter inspected but not changed.

3 - Filter changed, analyzed and discharge estimated.

4 - Filter changed but analysis not complete. To be reported.

5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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## FMPC Restoration - Environmental Compliance

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Stack Discharge Report for the Period from April 4, 1989 to May 4, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			kg U	Sampling Interval	
Plant 5					
G5-247	3	1 Filter Change	N/O	3/25/89 to 4/22/89	0.004251
G5-248	3	1 Filter Change	0.000260	3/25/89 to 4/13/89	0.002641
G5-249	Dismantled				0.011035
G5-250	3	1 Filter Change	0.002825	2/22/89 to 4/9/89	0.023766
		Dismantling Begun 2/22/89			
G5-254	3	1 Filter Change	N/O	3/25/89 to 4/22/89	
G5-267	3	1 Filter Change	N/O	3/11/89 to 4/8/89	
G5-256	3	1 Filter Change	N/O	3/25/89 to 4/22/89	0.004024
G5-260	3	7 Filter Changes	0.006731	4/3/89 to 4/6/89	
			0.000166	4/6/89 to 4/10/89	
			0.000249	4/10/89 to 4/13/89	
			0.001247	4/13/89 to 4/17/89	
			0.000332	4/17/89 to 4/20/89	
			0.000416	4/20/89 to 4/23/89	
			0.000831	4/23/89 to 5/1/89	
	4	1 Filter Change		5/1/89 to 5/4/89	0.024611
G5-261	3	7 Filter Changes	0.001730	4/3/89 to 4/6/89	
			0.000288	4/6/89 4/10/89	
			0.003317	4/10/89 to 4/13/89	
			0.001586	4/13/89 to 4/17/89	
			0.001009	4/17/89 to 4/20/89	
			0.000144	4/20/89 to 4/23/89	
			0.012401	4/23/89 to 5/1/89	
	4	1 Filter Change		5/1/89 to 5/4/89	0.079071
G5-262	3	1 Filter Change	0.000505	3/18/89 to 4/15/89	0.004693
G5SE-100	3	1 Filter Change	N/O	3/18/89 to 4/15/89	
G5A-100	3	1 Filter Change	0.004774	3/11/89 to 4/8/89	0.017636
G5A-101	4	1 Filter Change	N/O	3/25/89 to 4/22/89	0.007242
G5-1019					
G5-1020					
G5-1029					
G5S-1017					
G5S-1016					
E. Mold Cooling Booth	3	1 Filter Change	N/O	3/18/89 to 4/15/89	0.001375
Graphite Breakup Booth	3	1 Filter Change	N/O	3/25/89 to 4/22/89	0.002624
Totals			0.038811		0.182969

- Status: 1 - Filter not Inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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## FMPC Restoration - Environmental Compliance

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## Stack Discharge Report for the Period from April 4, 1989 to May 4, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			kg U	Sampling Interval	
Plant 6					
South ESP	3	1 Filter Change	N/O	3/25/89 to 4/22/89	0.002254
	4	1 Filter Change		4/22/89 to 5/3/89	
	Out of Service as of 5/3/89				
Totals			0.0		0.002254

Plant 8					
G43-27	3	7 Filter Changes	0.003428	3/24/89 to 4/4/89	0.121709
			0.000118	4/4/89 to 4/7/89	
			0.002600	4/7/89 to 4/11/89	
			0.000827	4/11/89 to 4/14/89	
			0.000236	4/14/89 to 4/18/89	
			0.000473	4/18/89 to 4/21/89	
			0.001418	4/21/89 to 5/2/89	
G43-29	3	1 Filter Change	0.000836	3/11/89 to 4/8/89	0.012730
G8-8035	3	1 Filter Change	N/O	3/18/89 to 4/22/89	0.001902
G8-7	Out of Service as of 3/11/89				
Totals			0.009936		0.136341

Plant 9					
G9E2-400	Out of Service as of 3/8/89				
G9N1-1035D	3	1 Filter Change	N/O	3/18/89 to 4/15/89	
G9N1-1035S	3	1 Filter Change	N/O	3/18/89 to 4/15/89	
Totals			0.0		0.0

- Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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## FMPC Restoration - Environmental Compliance

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Stack Discharge Report for the Period from April 4, 1989 to May 4, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U		
			kg U	Sampling Interval			
Pilot Plant							
735-13-7041	3	6 Filter Changes	0.000281	4/4/89 to 4/7/89	0.004037		
			0.000281	4/7/89 to 4/11/89			
			0.000094	4/11/89 to 4/14/89			
			0.000187	4/14/89 to 4/18/89			
			0.000094	4/18/89 to 4/21/89			
735-13-7050	3	5 Filter Changes	0.000374	4/21/89 to 5/2/89	0.006010		
			0.000539	3/17/89 to 4/3/89			
			0.000718	4/10/89 to 4/14/89			
			0.000359	4/14/89 to 4/18/89			
G-1	3	1 Filter Change	N/O	3/18/89 to 4/15/89	0.006010		
			4	1 Filter Change		N/O	4/15/89 to 5/3/89
						Out of Service as of 5/3/89	
G-2	3	1 Filter Change	N/O	3/18/89 to 4/15/89	0.006010		
			4	1 Filter Change		N/O	4/15/89 to 5/3/89
						Out of Service as of 5/3/89	
Totals			0.003287		0.010047		
Lab Bldg.							
G15-001	3	1 Filter Change	0.000044	3/11/89 to 4/8/89	0.000135		
Totals			0.000044		0.000135		
SITE TOTALS			0.078051		0.397978		

Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

FHPC Controller's Organization - Materials Control & Accountability

Plant B Wet Scrubber Emission Report for the Period from 4/1/89 to 5/1/89.

Wet Scrubbers	Emission Factor U gms./hr. oper.	Wet Scrubber Emissions Calculated During This Reporting Period		Total This Year kg. U
		kg. U	Operating Hours	
Rotary Kiln	1.01 *	0		0.02222
Oxidation No. 1 Furnace	7.11 *	0		0
Oxidation No. 2 Furnace	2.61 *	0		0
Box Furnace	2.06 *	0		0
Primary Calciner	0.51 * 3.00 **	0.04845 0.77100	95 257	1.11984
Totals		0.81945		1.14206

\* These emission factors are based on USEPA-approved stack testing studies. These factors are documented in a letter, A. M. Schwartzman to D. L. Dunaway, dated July 5, 1988, Plant B Scrubbers.

\*\* This emission factor is based on continuous stack sampling performed while Primary Calciner was drying wet sump cake (MTC 0069).

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## FMP Restoration - Environmental Compliance

Stack Discharge Report for the Period from May 4, 1989 to June 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			During This Reporting Period kg U	Sampling Interval	
Plant 1					
G2-64		Out of Service as of 3/6/89			
G2-76		Out of Service as of 3/6/89			
G2-1		Out of Service as of 3/6/89			
G2-2		Out of Service as of 3/6/89			
G2-171		Out of Service as of 3/6/89			
G2-172	3	1 Filter Change	N/O	4/22/89 to 5/20/89	0.000235
G2-235		Out of Service as of 3/6/89			
G2-6042	3	1 Filter Change	0.009150	4/29/89 to 5/27/89	0.009150
G2-6014	3	1 Filter Change	0.000123	4/29/89 to 5/27/89	0.001597
-----			-----		-----
Totals			0.009273		0.010982
Plant 2/3					
G1-94	3	1 Filter Change	N/O	5/2/89 to 5/27/89	
G1-856	4	1 filter Change	N/O	5/2/89 to 6/2/89	
-----			-----		-----
Totals			0.0		0.0
Plant 4					
G4-1		Out of Service as of 3/8/89			
G4-2		Out of Service as of 3/8/89			
G4-4	3	1 Filter Change	0.000242	4/8/89 to 5/7/89	
	4	1 Filter Change		5/7/89 to 6/3/89	0.001694
G4-5		Out of Service as of 3/8/89			
G4-7		Out of Service as of 3/8/89			
G4-12		Out of Service as of 3/8/89			
G4-13		Out of Service as of 3/8/89			
G4-14	3	1 Filter Change	0.001773	4/8/89 to 5/7/89	
	4	1 Filter Change		5/7/89 to 6/3/89	0.064844
Talcum cooling vent		Out of Service as of 3/8/89			
-----			-----		-----
Totals			0.002015		0.066538

- Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

## FMPC Restoration - Environmental Compliance

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Stack Discharge Report for the Period from May 4, 1989 to June 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			During This Reporting Period kg U	Sampling Interval	
Plant 5					
G5-247	3	1 Filter Change	N/O	4/22/89 to 5/20/89	0.004251
G5-248	3	1 Filter Change	N/O	4/13/89 to 5/13/89	0.002641
G5-249	Dismantled				0.011035
G5-250	Dismantled				0.023766
G5-254	3	1 Filter Change	N/O	4/22/89 to 5/20/89	
G5-267	3	1 Filter Change	N/O	4/8/89 to 5/6/89	
	4	1 Filter Change	N/O	5/6/89 to 6/3/89	
G5-256	3	1 Filter Change	N/O	4/22/89 to 5/20/89	0.004024
G5-260	3	6 Filter Changes	0.000582	5/1/89 to 5/4/89	
			0.0	5/4/89 to 5/8/89	
			0.000748	5/8/89 to 5/11/89	
			0.000416	5/11/89 to 5/15/89	
			0.0	5/15/89 to 5/18/89	
			0.040137	5/18/89 to 5/29/89	
	4	2 Filter Changes		5/29/89 to 6/1/89	
				6/1/89 to 6/5/89	0.066494
G5-261	3	6 Filter Changes	0.002596	5/1/89 to 5/4/89	
			0.0	5/4/89 to 5/8/89	
			0.001875	5/8/89 to 5/11/89	
			0.000577	5/11/89 to 5/15/89	
			0.001009	5/15/89 to 5/18/89	
			0.005480	5/18/89 to 5/29/89	
	4	2 Filter Changes		5/29/89 to 6/1/89	
				6/1/89 to 6/5/89	0.090608
G5-262	3	1 Filter Change	0.001661	4/15/89 to 5/13/89	0.006354
G5SE-100	3	1 Filter Change	N/O	4/15/89 to 5/13/89	
G5A-100	3	1 Filter Change	0.004508	4/8/89 to 5/6/89	
	4	1 Filter Change		5/6/89 to 6/3/89	0.022144
G5A-101	4	1 Filter Change		3/25/89 to 4/22/89	
	3	1 Filter Change	N/O	4/22/89 to 5/20/89	0.007242
E. Mold Cooling Booth	3	1 Filter Change	N/O	4/15/89 to 5/13/89	0.001375
Graphite Breakup Booth	3	1 Filter Change	N/O	4/22/89 to 5/20/89	0.002624
05-2840	3	1 Filter Change	N/O	4/24/89 to 5/20/89	
05-284S	3	1 Filter Change	N/O	4/24/89 to 5/20/89	
G5-1019	3	1 Filter Change	N/O	4/24/89 to 5/20/89	
G5-1020	3	1 Filter Change	N/O	4/24/89 to 5/20/89	
G5-1029	3	1 Filter Change	N/O	4/24/89 to 5/20/89	
G55-1017D	3	2 Filter Changes	N/O	3/7/89 to 4/24/89	
			N/O	4/24/89 to 5/20/89	
G55-1016S	3	2 Filter Changes	N/O	3/7/89 to 4/24/89	
			N/O	4/24/89 to 5/20/89	
Totals			0.059589		0.242558

Status: 1 - Filter not inspected this period.

2 - Filter inspected but not changed.

3 - Filter changed, analyzed and discharge estimated.

4 - Filter changed but analysis not complete. To be reported.

5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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## FMPC Restoration - Environmental Compliance

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Stack Discharge Report for the Period from May 4, 1989 to June 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			kg U	Sampling Interval	
Plant 6					
South ESP	3	1 Filter Change Out of Service as of 5/3/89	N/O	4/22/89 to 5/3/89	0.002254
Totals			0.0		0.002254

Plant 8					
G43-27	3	7 Filter Changes	0.004492	5/2/89 to 5/5/89	0.142039
			0.001418	5/5/89 to 5/9/89	
			0.001300	5/9/89 to 5/12/89	
			0.008038	5/12/89 to 5/16/89	
			0.000236	5/16/89 to 5/19/89	
			0.004137	5/19/89 to 5/30/89	
			0.000709	5/30/89 to 6/2/89	
G43-29	3	1 Filter Change	N/O	4/8/89 to 5/7/89	0.012730
	4	1 Filter Change	N/O	5/7/89 to 6/3/89	
G8-8035	3	1 Filter Change	N/O	4/22/89 to 5/20/89	0.001902
G8-7		Out of Service as of 3/11/89			
Totals			0.020330		0.156671

Plant 9					
G9E2-400		Out of Service as of 3/8/89			
G9N1-1035D	3	1 Filter Change	N/O	4/15/89 to 5/13/89	
G9N1-1035S	3	1 Filter Change	N/O	4/15/89 to 5/13/89	
Totals			0.0		0.0

- Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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## FMPC Restoration - Environmental Compliance

- 5410

Stack Discharge Report for the Period from May 4, 1989 to June 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			During This Reporting Period kg U	Sampling Interval	
Pilot Plant					
735-13-7041	3	1 Filter Change	0.000374	5/2/89 to 5/5/89	0.004411
	4	1 Filter Change		5/5/89 to 6/3/89	
735-13-7050	3	6 Filter Changes	0.000359	5/2/89 to 5/5/89	0.030064
			0.000718	5/5/89 to 5/9/89	
			0.000539	5/9/89 to 5/12/89	
			0.000359	5/12/89 to 5/16/89	
	0.021720	5/16/89 to 5/19/89			
	0.000359	5/19/89 to 5/23/89			
	4	1 Filter Change		5/23/89 to 5/26/89	
	3	2 Filter Changes	0.0	5/26/89 to 5/30/89	
			0.0	5/30/89 to 6/2/89	
G-1	3	1 Filter Change	N/O	4/15/89 to 5/3/89	
		Out of Service as of 5/3/89			
G-2	3	1 Filter Change	N/O	4/15/89 to 5/3/89	
		Out of Service as of 5/3/89			
Totals			0.024428		0.034475
Lab Bldg.					
G15-001	3	1 Filter Change	0.000161	4/8/89 to 5/7/89	0.000296
Totals			0.000161		0.000296
SITE TOTALS			0.115796		0.513774

- Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

FMPC Controller's Organization - Materials Control & Accountability

Plant 8 Wet Scrubber Emission Report for the Period from 5/1/89 to 6/1/89.

Wet Scrubbers	Emission Factors U gms./hr. oper.	Wet Scrubber Emissions		Total This Year kg. U
		Calculated During This Reporting Period kg. U	Operating Hours	
Rotary Kiln	1.01 *	0.15857	157	0.18079
Oxidation No. 1 Furnace	7.11 *		0	0
Oxidation No. 2 Furnace	2.61 *		0	0
Box Furnace	2.06 *		0	0
Primary Calciner	0.51 * 3.00 **	1.16400	388	2.28384
Totals		1.32257		2.46463

\* Current emission factors are based on USEPA-approved stack testing studies. These factors are documented in a letter, A. M. Schwartzman to D. L. Dunaway, dated July 5, 1988, Plant 8 Scrubbers.

\*\* This emission factor is based on continuous stack sampling performed while Primary Calciner was drying wet sump cake (MTC 0069) during April 1989.

TABLE A

## FMC Restoration - Environmental Compliance

- 3410

Stack Discharge Report for the Period from June 5, 1989 to July 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			kg U	Sampling Interval	
Plant 1					
G2-64		Out of Service as of 3/6/89			
G2-76		Out of Service as of 3/6/89			
G2-1		Out of Service as of 3/6/89			
G2-2		Out of Service as of 3/6/89			
G2-171		Out of Service as of 3/6/89			
G2-172	3	2 Filter Changes	N/O	5/20/89 to 6/17/89	
			0.000518	6/17/89 to 7/1/89	0.000753
G2-235	4	Back in Service 6/13/89			
G2-6042	3	2 Filter Changes	0.0	5/27/89 to 6/13/89	
			0.001170	6/13/89 to 6/19/89	0.010320
G2-6014	3	2 Filter Changes	0.000123	4/29/89 to 5/27/89	
			0.0	5/27/89 to 6/24/89	0.001720
Totals			0.001811		0.012793
Plant 2/3					
G1-94	3	1 filter Change	N/O	5/27/89 to 6/24/89	
G1-856	3	2 Filter Changes	0.007525	5/2/89 to 6/2/89	0.007525
			0.000645	6/2/89 to 7/1/89	0.000645
		Out of Service as of 7/1/89			
Totals			0.008170		0.008170
Plant 4					
G4-1		Out of Service as of 3/8/89			
G4-2		Out of Service as of 3/8/89			
G4-4	3	2 Filter Changes	0.000330	5/7/89 to 6/3/89	
			0.000352	6/3/89 to 7/1/89	0.002376
G4-5		Out of Service as of 3/8/89			
G4-7		Out of Service as of 3/8/89			
G4-12		Out of Service as of 3/8/89			
G4-13		Out of Service as of 3/8/89			
G4-14	3	2 Filter Changes	0.023512	5/7/89 to 6/3/89	
			0.010636	6/3/89 to 7/1/89	0.098992
Talcum cooling vent		Out of Service as of 3/8/89			
Totals			0.034830		0.101368

Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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- 5410

## RPPC Restoration - Environmental Compliance

Stack Discharge Report for the Period from June 5, 1989 to July 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			During This Reporting Period kg U	Sampling Interval	
Plant 5					
CS-247	3	1 Filter Change	N/O	5/20/89 to 6/17/89	0.004251
CS-248	3	1 Filter Change	N/O	5/13/89 to 6/10/89	0.002641
CS-249	Dismantled				0.011035
CS-250	Dismantled				0.023766
CS-254	3	1 Filter Change	0.000976	5/20/89 to 6/17/89	0.000976
CS-267	3	2 Filter Changes	N/O	5/6/89 to 6/3/89	
			0.006566	6/3/89 to 7/1/89	0.006566
CS-256	3	1 Filter Change	0.000424	5/20/89 to 6/17/89	0.004448
CS-260	3	7 Filter Changes	0.000499	5/29/89 to 6/1/89	
			0.000332	6/1/89 to 6/5/89	
			0.000332	6/5/89 to 6/8/89	
			0.001080	6/8/89 to 6/12/89	
			0.000499	6/12/89 to 6/15/89	
			0.000416	6/15/89 to 6/26/89	
			0.000166	6/26/89 to 6/29/89	
	4	1 Filter Change		6/29/89 to 7/3/89	0.069818
CS-261	3	7 Filter Changes	0.000865	5/29/89 to 6/1/89	
			0.000865	6/1/89 to 6/5/89	
			0.003172	6/5/89 to 6/8/89	
			0.000577	6/8/89 to 6/12/89	
			0.002596	6/12/89 to 6/15/89	
			0.007931	6/15/89 to 6/26/89	
			0.001875	6/22/89 to 6/29/89	
	4	1 Filter Change		6/29/89 to 7/3/89	0.108489
CS-262	3	1 Filter Change	0.002816	5/13/89 to 6/10/89	0.009170
CSSE-100	3	1 Filter Change	N/O	5/13/89 to 6/10/89	
CSA-100	3	2 Filter Changes	0.003182	5/6/89 to 6/3/89	
			0.025327	6/3/89 to 6/10/89	0.050653
CSA-101	3	1 Filter Change	0.006390	5/20/89 to 6/17/89	0.013632
E. Mold Cooling Booth	3	1 Filter Change	N/O	5/13/89 to 6/10/89	0.001375
Graphite Breakup Booth	3	2 Filter Changes	N/O	5/20/89 to 6/10/89	
			N/O	6/10/89 to 6/29/89	
		Out of Service as of 6/29/89			0.002624
CS-284D	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
CS-284S	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
CS-1019	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
CS-1020	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
CS-1029	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
CS-1017D	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
CS-1016S	3	1 Filter Change	N/O	5/20/89 to 6/17/89	
Totals			0.066886		0.309444

Status: 1 - filter not inspected this period.  
 2 - filter inspected but not changed.  
 3 - filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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- 5410

## FWPC Restoration - Environmental Compliance

Stack Discharge Report for the Period from June 5, 1989 to July 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			During This Reporting Period kg U	Sampling Interval	
Plant 6					
South ESP	1	Back in Service as of 6/13/89			0.002254
Totals			0.0		0.002254

Plant 8					
G43-27	3	6 Filter Changes	0.018676	6/2/89 to 6/6/89	0.225015
			0.007210	6/6/89 to 6/9/89	
			0.004610	6/9/89 to 6/13/89	
			0.000709	6/13/89 to 6/16/89	
			0.007801	6/16/89 to 6/27/89	
			0.043970	6/27/89 to 6/30/89	
G43-29	3	2 Filter Changes	N/O	5/7/89 to 6/3/89	0.012730
			N/O	6/3/89 to 7/1/89	
G8-8035	3	3 Filter Changes	0.000591	5/20/89 to 6/17/89	0.005860
			N/O	6/17/89 to 6/20/89	
G8-7		Out of Service as of 3/11/89	0.003367	6/20/89 to 6/30/89	
Totals			0.086934		0.243605

Plant 9					
G9E2-400		Out of Service as of 3/8/89			
G9N1-10350	3	2 Filter Changes	N/O	5/13/89 to 6/10/89	
G9N1-1035S	3	2 Filter Changes	N/O	6/10/89 to 6/30/89	
			N/O	5/13/89 to 6/10/89	
				6/10/89 to 6/30/89	
Totals			0.0		0.0

- Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

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## FWPC Restoration - Environmental Compliance

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Stack Discharge Report for the Period from June 5, 1989 to July 5, 1989

Collector Number	Status	Notes	Stack Discharges Estimated		Total This Year kg U
			kg U	Sampling Interval	
Pilot Plant					
735-13-7041	3	2 Filter Changes	0.008602	5/5/89 to 6/3/89	0.014696
			0.001683	6/3/89 to 7/1/89	
735-13-7050	3	8 Filter Changes	N/O	6/2/89 to 6/6/89	0.030423
			0.000359	6/6/89 to 6/9/89	
			N/O	6/9/89 to 6/13/89	
			0.0	6/13/89 to 6/16/89	
			0.0	6/16/89 to 6/20/89	
			N/O	6/20/89 to 6/23/89	
			0.0	6/23/89 to 6/27/89	
			0.0	6/27/89 to 6/30/89	
	4			6/30/89 to 7/4/89	
G-1		Out of Service as of 5/3/89			
G-2		Out of Service as of 5/3/89			
Totals			0.010644		0.045119
Lab Bldg.					
615-001	3	3 Filter Changes	0.000183	5/7/89 to 6/3/89	0.001099
			0.000556	6/3/89 to 6/24/89	
			0.000064	6/24/89 to 7/1/89	
Totals			0.000803		0.001099
SITE TOTALS			0.210078		0.723852

Status: 1 - Filter not inspected this period.  
 2 - Filter inspected but not changed.  
 3 - Filter changed, analyzed and discharge estimated.  
 4 - Filter changed but analysis not complete. To be reported.  
 5 - Collector abandoned or on standby. Stack sampler not routinely inspected or serviced

N/O = The dust collector and associated process sources were not operated

TABLE B

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FMPC Controller's Organization - Materials Control &amp; Accountability

Plant B Wet Scrubber Emission Report for the Period from 6/1/89 to 7/1/89.

Wet Scrubbers	Emission Factors   U gms./hr. oper.	Wet Scrubber Emissions		Total This Year   kg. U
		Calculated During This Reporting Period   kg. U	Operating Hours	
Rotary Kiln	1.01 *	0.39188	388	0.57267
Oxidation No. 1 Furnace	7.11 *		0	0
Oxidation No. 2 Furnace	2.61 *		0	0
Box Furnace	2.06 *		0	0
Primary Calciner	0.51 * 3.00 **	0.76200	254	3.04584
Totals		1.15388		3.61851

\* Current emission factors are based on USEPA-approved stack testing studies. These factors are documented in a letter, A. M. Schwartzman to D. L. Dunaway, dated July 5, 1988, Plant B Scrubbers.

\*\* This emission factor is based on continuous stack sampling performed while Primary Calciner was drying wet sump cake (MTC 0069) during April 1989.

TABLE C

Uranium Emissions - Unmonitored Stacks

Plant	Stack	Emission Factors	CYTD Total Emissions (g)	June Emissions (gU/mo)
1	Drum washer	3.0E-1 gU/hr	1.20E+00	1.20E+00
5	Rockwell Air Cooling Well - east	3.27E-3 gU/pot	0.00E+00	0.00E+00
	Rockwell Air Cooling Well - west	3.27E-3 gU/pot	0.00E+00	0.00E+00
5	Jolter Mufflers - east	6.03E-4 gU/liner	0.00E+00	0.00E+00
	Jolter Mufflers - west	6.03E-4 gU/liner	0.00E+00	0.00E+00
5	Breakout Jolter Muffler	8.22E-7 gU/derby	0.00E+00	0.00E+00
5	Remelt furnace Hilco Oil Reclamation/Furnace Vacuum Pump System	7.62E-5 gU/hr	1.34E-02	1.34E-02
6	Briquetting scrubber	1.38E-3 gU/lb U processed	8.28E+00	8.28E+00
6	Scrap pickling	3.46E-1 gU/hr	7.54E+01	7.54E+01
8	Elmco filter - filter #1	9.08E-2 gU/lb	0.00E+00	0.00E+00
	Elmco filter - filter #2	9.08E-2 gU/lb	0.00E+00	0.00E+00
8	Elmco filter hood fan	4.89E-3 (gU/hr)*(min*m3/dls)	0.00E+00	0.00E+00
9	Zirnlo - derby pickling	7.45E-3 gU/derby	6.09E+00	6.09E+00
Pilot Plt	Reactor area - Hydrogen safety system exhaust vent	1.61E+10 (gU/hr)*(cc/micro Ci)	0.00E+00	0.00E+00
Pilot Plt	Reactor area - Scrubber C (Vessel 1 & 2 offgas line)	6.62E-6 gU/hr	0.00E+00	0.00E+00
Pilot	Annex area - Stokes vacuum pump	1.73E-5 gU/hr	0.00E+00	0.00E+00
	NAR	Based on U concentration	0.00E+00	0.00E+00
	Decontamination and Decommissioning	0.11 gU/batch	2.31E+00	2.31E+00
	TOTAL		9.33E+01	9.33E+01

- Hours as used in emission factor represent hours of operation in the mode which results in an air emission.
- \*\* Factors for Plant 6 Scrap Pickle and Briquetting were determined before these facilities were tied into the NOx Destructor. As a result, U emissions will be lower than reported. New emission factors will be developed when stack sampling is complete.