6956 G-000-104.166

RENEWAL OF PERMITS TO OPERATE - TWO 100 MMBTU COAL-FIRED BOILERS AT THE FERNALD ENVIRONMENTAL MANGAGEMENT PROJECT (OEPA) NO. 1431110128 B001 AND B003

06/13/95

C:EC:95-0077
FERMCO HAMILTON COUNTY
11
PTO

-6956

Fernald Environmental

FERMCO

Restoration Management Corporation P.O. Box 398704 Cincinnati, Ohio 45239-8704 (513) 738-6200

June 13, 1995

Fernald Environmental Management Project
Letter No. C:EC:95-0077

Mr. Peter Sturdevant, Compliance Specialist
Air Quality Management
Hamilton County Department of Environmental Services
1632 Central Parkway
Cincinnati, Ohio 45210

Dear Mr. Sturdevant:

RENEWAL OF PERMITS TO OPERATE - TWO 100 MMBTU COAL-FIRED BOILERS AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (OEPA) NO. 1431110128 B001 AND B003

Enclosed are renewal applications for the 100 MMbtu Coal-Fired Boilers at the FEMP for which the Permits to Operate are scheduled to expire.

Please contact Ervin Fisher of my staff at (513) 648-5293 if you have any questions about this application.

Sincerely,

Terence D. Hagen
Director
Environmental Compliance

TDH:EF:mhv
Attachments

c: S. M. Beckman, FERMCO/MS65-2 - w/o attachments
L. Pennington, FERMCO/MS62 - w/o attachments
E. P. Skintik, DOE-FN/MS45
P. B. Spotts, FERMCO/MS65-2 - w/o attachments
AR Coordinator/MS78
File Record Storage Copy 108.6
RTS Files (B001 & B003)

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OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR A PERMIT TO OPERATE
AN AIR CONTAMINANT SOURCE

D.O.E.-Fernald Environmental Management Project
Facility Name

Mr. Stephen M. Beckman
Person to Contact

7400 Willey Road
Facility Address

Post Office Box 538705
Mailing Address

Fernald Hamilton 45030
City County Zip

Cincinnati OH 45253-8705
City State Zip

513/ 648-5264
Telephone Area Number

513/ 648-5264
Telephone

#1431110128-B001
(Application no., if this is a renewal application)

4953
Std. Ind. Class. Code

1. Complete and attach any of the following appendices most appropriate to the air contaminant source. In addition, a compliance time schedule form is to be attached when applicable. Check as appropriate the following:

___Appendix A, Process
_X_Appendix B, Fuel-Burning Equipment
___Appendix C, Incinerator
___Appendix D, Surface Coating or Printing Operation
___Appendix E, Storage Tank
___Appendix H, Gasoline Dispensing Facility
___Appendix J, Loading Rack at Bulk Gasoline Plant or Terminal
___Appendix K, Surface Coating Line or Printing Line
___Appendix L, Solvent Metal Cleaning
___ Appendix M, Fugitive Dust Emission Sources
_____
Specify Appendix No.
___Appendix N, Rubber Tire Manufacturing
___Appendix O, Dry Cleaning Facility
___Appendix P, Landfills
___Other Appendix _____
___Compliance Time Schedule

2. Description of Source (same as used on appendix): 100 MMbtu Coal-fired Boiler Unit 1

3. Your identification for Source (same as used on appendix): FEMP # 10-001

I, being the individual specified in Rule 3745-35-02(B) of the Ohio Administrative Code, hereby apply for a Permit to Operate the air contaminant source(s) described herein. As required, the following additional documents are submitted as part of this application (describe all attachments):

Appendix B
Emission Calculations

_____
Authorized Signature*
Terence D. Hagen
Director Environmental Compliance
Title

_____
Date

*Pursuant to OAC Rule 3745-35-02(B) (Permit to Operate).

Operation of an air contaminant source without an effective permit to operate is prohibited to 3704.05 Ohio Revised Code.

-6956

For Official Use Only

Premise No. ___/ ___/ ___/ ___
Source No. ___/ ___
Application No. ___/ ___

OEPA NO. 1431110128 B001
FEMP ID NO. 10-001

APPENDIX B:

FUEL BURNING EQUIPMENT

(Boilers, Heaters, and Steam Generators)

1. Manufacturer Riley Stoker Corporation Model No. RX-22
2. Your identification Boiler No. 1 (1431110128B001) Year Installed 1952
3. Input capacities (10^6 BTU/hr.): Rated 100 Max. 100 Normal 34-69
   output capacities (lbs.-steam/hr.): Rated 75000 Max. 73000 Normal 52000 win 26000 sum
   Note: Indicate units if different than above.
4. Percent used for: Space Heating 80 % Process 20 % Power ___ %
5. Normal Operating schedule: 24 hrs./day, 7 days/wk., 52 wks/year
6. Type of fuels fired: [X] Coal [ ] Oil [ ] Natural Gas [ ] Wood [ ] LPG [ ] Other, specify ___
7. Type of draft: [ ] Natural [X] Induced [X] Forced
8. Combustion Monitoring: [X] Fuel/air ratio [X] O_2 [X] Smoke [ ] Other, specify ___

COAL FIRED UNITS

9. Type of firing: [ ] Hand-fired [ ] Underfeed stoker [X] Traveling grate [ ] Chain grate [X] Spreader stoker [ ] Cyclones [ ] Pulverized-dry bottom [ ] Pulverized-wet bottom [ ] Other, specify ___
10. Fly ash reinjection: [X] Yes [ ] No

OIL FIRED UNITS

11. Type of oil: [ ] No. 2 [ ] No. 6 [ ] Other, specify ___
12. Atomization: [ ] Oil pressure [ ] Steam pressure [ ] compressed air [ ] Rotary cup [ ] Other, specify ___
13. Oil preheater: [ ] Yes, Temp. ___ °F. [ ] No

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5608

FUEL DATA

1431110128 B001
FEMP ID No. 10-001

14. Complete the following tables for each type of fuel:

Type of Fuel	Heat Content (BTU/Unit)		Percent		Quantity of Fuel Used		
			Ash	Sulfur	Per Year	Normal/hr.	Maximum/hr.
Coal	11900	BTU/pound	12	0.81	12000 tons	4000 lbs.	8000 lbs.
Oil		BTU/gallon			gals.	gal.	gal.
Gas		BTU/cu.ft.			cu.ft.	cu.ft.	cu.ft.
Wood		BTU/pound			tons	lbs.	lbs.
LPG		BTU/gallon			gal.	gals.	gal.
Other							

Type of Fuel				
	Winter	Spring	Summer	Fall
Coal	50%	19%	12%	19%
Oil				
Gas				
Wood				
LPG				
Other				

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling Chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Spray Chamber
(F) Cyclonic Scrubber
(G) Packing tower
(H) Venturi
(I) Other _____

15. Control Equipment data:

(a) Type (See Above code)	C	D
(b) Manufacturer	Western Precipitation	United McGill
(c) Model No.	P-30328	250 x 2
(d) Year installed	1951	1978
(e) Your identification	#1 (s/n 2367)	EP-1
(f) Pollutant Controlled	Flue Gas Emissions	Flue Gas Emissions
(g) Controlled pollutant	0.2 - 0.4 #/MMBTU Input	0.132 #/MMBTU Input
(h) Pressure drop	1.62	Not Known
(i) Design efficiency	91%	99.7 %
(j) Operating efficiency	91%	99 %

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STACK DATA

16. Your stack identification Stack No. 1 (Northeast)

17. Are other sources vented to this stack? [ ] Yes [X] No
    If yes, identify sources _____

18. Type: [x] Round, top inside diameter dimension 5 Ft.
    [ ] Rectangular, top inside dimensions (L) _____ x (W) _____

19. Height: Above roof 28.5 ft., above ground 108.5 ft.

20. Exit gas: Temp. 500 °F, Volume 28,000 ACFM, Velocity 1425 ft./min.

21. Continuous monitoring equipment: [X] Yes [ ] No
    If yes, indicate Type Opacity, Manufacturer Dynatron, Inc.
    Make or Model Model 1100 M, Pollutant (s) monitored Particulate

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [X] Yes [ ] No *Note
    If yes, check method: [X] Stack Test [X] Emission factor

* A report on the opacity monitoring data and coal sulfur dioxide limits is submitted to DOES-AQM on a quarterly basis.

Completed by E. Fisher Req. Technical Specialist III , Date 05/24/95

Emission Calculations for: PERMIT RENEWAL

Facility: Fernald Envir. Management Project
Source No: 1431110128 B001
Source ID: FEMP ID NO. 10-001

Computed by: Ervin Fisher - FERMCO
Date: May 25, 1995

Boiler rating (maximum heat input): 100 (MMBtu/hour).
Boiler rating (average actual heat input): 51.5 (MMBtu/hour).
Annual operating hours: 8760 hours/year.
Particulate: 0.0583 (lbs/MMbtu) as demonstrated during stack testing, SOx: Average Sulfur content: (1 x 10^6 btu/MMbtu) /11900 x 0.008 x 1.9 = 1.28 based on the coal average Sulfur content during 1994. Potential: (1 x 10^6 btu/MMbtu) /11900 btu/lb x 0.01 x 1.9 = 1.6 as calculated in OAC 3745-18-04){F(1)}, NOx: 14 lb/ton as referenced in AP-42, table 1.1-1, CO: 5 lb/ton as referenced in AP-42, table 1.1-1

1. Annual actual and potential (8760 hours) emissions in (tons/year).

Particulate:

ACTUAL: 0.0583 (lbs/MMbtu) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 13 TPY

POTENTIAL: 0.0583 (lbs/MMbtu) x 100.0 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 26 TPY

SOx:

ACTUAL: 1.28 (lbs/MMbtu) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 289 TPY

POTENTIAL: 1.6 (lbs/MMbtu) x 100.0 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 701 TPY

NOx:

ACTUAL: 14 (lbs/ton) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 265 TPY

POTENTIAL: 14 (lbs/ton) x 100 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 515 TPY

CO:

ACTUAL: 5 (lbs/ton) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 95 TPY

POTENTIAL: 5 (lbs/ton) x 100 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 184 TPY

OHIO ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR A PERMIT TO OPERATE
AN AIR CONTAMINANT SOURCE

-6956

D.O.E.-Fernald Environmental Management Project
Facility Name

Mr. Stephen M. Beckman
Person to Contact

7400 Willey Road
Facility Address

Post Office Box 538705
Mailing Address

Fernald Hamilton 45030
City County Zip

Cincinnati OH 45253-8705
City State Zip

513/ 648-5264
Telephone Area Number

513/ 648-5264
Telephone

#1431110128-B003
(Application no., if this is a renewal application)

4953
Std. Ind. Class. Code

1. Complete and attach any of the following appendices most appropriate to the air contaminant source. In addition, a compliance time schedule form is to be attached when applicable. Check as appropriate the following:

___Appendix A, Process
_X_Appendix B, Fuel-Burning Equipment
___Appendix C, Incinerator
___Appendix D, Surface Coating or Printing Operation
___Appendix E, Storage Tank
___Appendix H, Gasoline Dispensing Facility
___Appendix J, Loading Rack at Bulk Gasoline Plant or Terminal
___Appendix K, Surface Coating Line or Printing Line
___Appendix L, Solvent Metal Cleaning
___ Appendix M, Fugitive Dust Emission Sources
_____ Specify Appendix No.
___Appendix N, Rubber Tire Manufacturing
___Appendix O, Dry Cleaning Facility
___Appendix P, Landfills
___Other Appendix _____
___Compliance Time Schedule

2. Description of Source (same as used on appendix): 100 MMbtu Coal-fired Boiler Unit 3

3. Your identification for Source (same as used on appendix): FEMP # 10-003

I, being the individual specified in Rule 3745-35-02(B) of the Ohio Administrative Code, hereby apply for a Permit to Operate the air contaminant source(s) described herein. As required, the following additional documents are submitted as part of this application (describe all attachments):

Appendix B
Emission Calculations

Authorized Signature*
Terence D. Hagen
Director Environmental Compliance
Title

Date

*Pursuant to OAC Rule 3745-35-02(B) (Permit to Operate).

Operation of an air contaminant source without an effective permit to operate is prohibited to 3704.05 Ohio Revised Code.

7

For Official Use Only

Premise No. ___/ ____/ ____/ _____
Source No. _____/ _____
Application No. _____/ _____

OEPA NO. 1431110128 B003
FEMP ID NO. 10-003

APPENDIX B:

FUEL BURNING EQUIPMENT

(Boilers, Heaters, and Steam Generators)

1. Manufacturer Riley Stoker Corporation Model No. RX-22
2. Your identification Boiler No. 3 (1431110128B003) Year Installed 1952
3. Input capacities (10^6 BTU/hr.): Rated 100 Max. 100 Normal 34-69
   output capacities (lbs.-steam/hr.): Rated 75000 Max. 73000 Normal 52000 win 26000 sum
   Note: Indicate units if different than above.
4. Percent used for: Space Heating 80 % Process 20 % Power ____ %
5. Normal Operating schedule: 24 hrs./day, 7 days/wk., 52 wks/year
6. Type of fuels fired: [X] Coal [ ] Oil [ ] Natural Gas [ ] Wood [ ] LPG [ ] Other, specify _____
7. Type of draft: [ ] Natural [X] Induced [X] Forced
8. Combustion Monitoring: [X] Fuel/air ratio [X] O_2 [X] Smoke [ ] Other, specify _____

COAL FIRED UNITS

9. Type of firing: [ ] Hand-fired [ ] Underfeed stoker [X] Traveling grate [ ] Chain grate [X] Spreader stoker [ ] Cyclones [ ] Pulverized-dry bottom [ ] Pulverized-wet bottom [ ] Other, specify _____
10. Fly ash reinjection: [X] Yes [ ] No

OIL FIRED UNITS

11. Type of oil: [ ] No. 2 [ ] No. 6 [ ] Other, specify _____
12. Atomization: [ ] Oil pressure [ ] Steam pressure [ ] compressed air [ ] Rotary cup [ ] Other, specify _____
13. Oil preheater: [ ] Yes, Temp. ____ °F. [ ] No

FUEL DATA

14. Complete the following tables for each type of fuel:

Type of Fuel	Heat Content (BTU/Unit)		Percent		Quantity of Fuel Used		
			Ash	Sulfur	Per Year	Normal/hr.	Maximum/hr.
Coal	11900	BTU/pound	12	0.81	12000 tons	4000 lbs.	8000 lbs.
Oil		BTU/gallon			gals.	gal.	gal.
Gas		BTU/cu.ft.			cu.ft.	cu.ft.	cu.ft.
Wood		BTU/pound			tons	lbs.	lbs.
LPG		BTU/gallon			gal.	gals.	gal.
Other							

Type of Fuel				
	Winter	Spring	Summer	Fall
Coal	50%	19%	12%	19%
Oil				
Gas				
Wood				
LPG				
Other				

CONTROL EQUIPMENT

Control Equipment Code:

(A) Settling Chamber
(B) Cyclone
(C) Multiple cyclone
(D) Electrostatic precipitator
(E) Spray Chamber
(F) Cyclonic Scrubber
(G) Packing tower
(H) Venturi
(I) Other _____

15. Control Equipment data:

(a) Type (See Above code)	C	D
(b) Manufacturer	Western Precipitation	United McGill
(c) Model No.	P-30328	250 x 2
(d) Year installed	1951	1978
(e) Your identification	#1 (s/n 2368)	EP-2
(f) Pollutant Controlled	Flue Gas Emissions	Flue Gas Emissions
(g) Controlled pollutant	0.2 - 0.4 #/MMBTU Input	0.132 #/MMBTU Input
(h) Pressure drop	1.62	Not Known
(i) Design efficiency	91%	99.7 %
(j) Operating efficiency	91%	99 %

OEPA No. 1431110128B003
FEMP ID No. 10-003

STACK DATA

16. Your stack identification Stack No. 3 (Northwest)

17. Are other sources vented to this stack? [ ] Yes [X] No
    If yes, identify sources _____

18. Type: [x] Round, top inside diameter dimension 5 Ft.
    [ ] Rectangular, top inside dimensions (L) _____ x (W) _____

19. Height: Above roof 28.5 ft., above ground 108.5 ft.

20. Exit gas: Temp. 500 °F, Volume 28,000 ACFM, Velocity 1425 ft./min.

21. Continuous monitoring equipment: [X] Yes [ ] No
    If yes, indicate Type Opacity, Manufacturer Dynatron, Inc.
    Make or Model Model 1100 M, Pollutant (s) monitored Particulate

22. Emission data: Emissions from this source have been determined and such data is included with this appendix: [X] Yes [ ] No *Note
    If yes, check method: [X] Stack Test [X] Emission factor

* A report on the opacity monitoring data and coal sulfur dioxide limits is submitted to DOES-AQM on a quarterly basis.

Completed by E. Fisher Req. Technical Specialist III, Date 05/24/95

Emission Calculations for: PERMIT RENEWAL

Facility: Fernald Envir. Management Project
Source No: 1431110128 B003
Source ID: FEMP ID NO. 10-003

Computed by: Ervin Fisher - FERMCO
Date: May 25, 1995

Boiler rating (maximum heat input): 100 (MMBtu/hour).
Boiler rating (average actual heat input): 51.5 (MMBtu/hour).
Annual operating hours: 8760 hours/year.
particulate: 0.0583 (lbs/MMbtu) as demonstrated during stack testing, SOx: Average Sulfur content: (1 x 10^6 btu/MMbtu) /11900 x 0.008 x 1.9 = 1.28 based on the coal average Sulfur content during 1994. Potential: (1 x 10^6 btu/MMbtu) /11900 x 0.01 x 1.9 = 1.6 as calculated in OAC 3745-18-04){F(1)}, NOx: 14 lb/ton as referenced in AP-42, table 1.1-1, CO: 5 lb/ton as referenced in AP-42, table 1.1-1

1. Annual actual and potential (8760 hours) emissions in (tons/year).

Particulate:

ACTUAL: 0.0583 (lbs/MMbtu) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 13.15 TPY

POTENTIAL: 0.0583 (lbs/MMbtu) x 100 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 25.54 TPY

SOx:

ACTUAL: 1.28 (lbs/MMbtu) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 288.73 TPY

POTENTIAL: 1.6 (lbs/MMbtu) x 100 (MMbtu/hr) x 8760 (hrs/year) / 2000 (lbs/ton) = 700.8 TPY

NOx:

ACTUAL: 14 (lbs/ton) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 265.38 TPY

POTENTIAL: 14 (lbs/ton) x 100 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 515.29 TPY

CO:

ACTUAL: 5 (lbs/ton) x 51.5 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 94.78 TPY

POTENTIAL: 5 (lbs/ton) x 100 (MMbtu/hr) x 8760 (hrs/year) / 11900 (btu/lb) / 2000 (lbs/ton) = 184.03 TPY