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G-000-104.178

**PERMIT TO INSTALL APPLICATION FOR BACKUP DIESEL
GENERATOR; FEMP ID NO. 10-013**

08/18/95

**C:EC:95-0109
FERMCO HAMILTON COUNTY
10
LETTER**



Restoration Management Corporation

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

August 18, 1995

Fernald Environmental Management Project
Letter No. C:EC:95-0109

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

Dear Mr. Sturdevant:

PERMIT TO INSTALL APPLICATION FOR BACKUP DIESEL GENERATOR; FEMP ID NO. 10-013

Enclosed is the Permit to Install application for a diesel fueled backup generator which will be used as an emergency backup electrical source.

If you have any questions concerning this application, please contact Ervin Fisher of my staff at (513) 648-5293.

Sincerely,

Terence D. Hagen
Director
Environmental Compliance

TDH:EF:mhv
Enclosure

c: With Enclosure

D. T. Edwards, FERMCO/MS44
T. E. Escue, FERMCO/MS52-5
E. P. Skintik, DOE-FN/MS45
AR Coordinator/MS78
File Record Storage Copy 108.6
RTS Files

Without Enclosure

S. M. Beckman, FERMCO/MS65-2
S. L. Blankenship, FERMCO/MS71-3
W. J. Naber, FERMCO/MS60
P. B. Spotts, FERMCO/MS65-2

For Office Use Only
Check Appropriate Box(es)

- Air Discharge
- Water Discharge to New Source Treatment Works
- Solid Waste Disposal Facility
- Hazardous Waste Disposal Facility

For Office Use Only

PTI Application No. _____
 Date Received _____
 Premise No. _____

OHIO ENVIRONMENTAL PROTECTION AGENCY
 Application for Permit to Install

U. S. Department of Energy, Fernald Environmental Management Project
 Applicant's Name

P. O. Box 538704-8704
 Mailing Address

| | | | | |
|-------------------|-----------------|-----------|-------------------|---------------------|
| <u>Cincinnati</u> | <u>Hamilton</u> | <u>OH</u> | <u>45253-8704</u> | <u>513/738-6502</u> |
| City | County | State | Zip Code | Telephone Number |

Stephen M. Beckman Manager Regulatory Technical Support (513) 648-5264
 Person to contact (Name and Title and Telephone Number)

This facility will be located outside the production area of the Department of Energy's Fernald Environmental Management Project (FEMP)

Location of Proposed Facility (State the location as completely and precisely as possible)*

Fernald Environmental Management Project, 7400 Willey Road

| | | |
|------------------|-----------------|--------------|
| <u>Fernald</u> | <u>Hamilton</u> | <u>45030</u> |
| City or Township | County | Zip Code |

Directions: A Permit to Install is required for new or modified sources of pollution under the provisions of OAC Rule 3745-31. An Application cannot be considered complete unless all applicable questions are answered and the required information has been submitted. This application must be signed in accordance with OAC Rule 3745-31-04(B) or it cannot be accepted.

Applicants for permits involving air emissions or wastewater treatment facilities will be required to pay a permit to install fee as shown in Section 3745.11(B) and (C) of the Ohio Revised Code. This fee is payable fifteen days after the date of final issuance of the permit.

Name of new or modified source or facility: Emergency Backup Diesel fueled generator

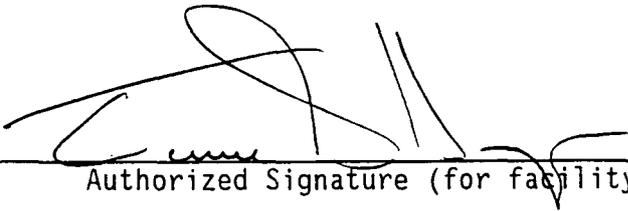
Product of new or modified source /facility: Emergency electrical supply

Will the proposed source/facility involve any of the following: Check all that apply.

- A. Air Discharge
- B. Wastewater Treatment Works
- C. Solid Waste disposal Facility
- D. Hazardous Waste Disposal Facility

* Example: "The source will be constructed on a 20 Acre plot to be located on Franklin Township Road No. 17, approximately 1 1/4 miles north of the intersection of State Route 99 and Franklin Township Road No. 17."

Under OAC 3745-31-04, These signatures shall constitute personal affirmation that all statements or assertions of fact made in the application are true and complete, comply fully with applicable state requirements, and shall subject the signatory to liability under applicable state laws forbidding false or misleading statements.


Authorized Signature (for facility) 8/18/95
Date

Director, Environmental Compliance
Title

P. O. Box 538704 Cincinnati, Ohio 45253-8704
Address

For Wastewater
Treatment Plants:

Signature of General Contractor or Agent Date
Performing installation, if selected.

Company

Address

FOR ALL PERMITS TO INSTALL

1. Describe the product or service to be produced by the applicant along with a description of the proposed source/facility.

This generator will be used to provide electrical power to the boilers at the FEMP in the event of a power outage.

2. List the name and quantity of all materials and chemicals that will be used or produced by the source/facility.

The generator during power outages will burn 19.7 gal/hr of No. 2 diesel at full load and produce 230 KW of electrical power to the existing 75 Mmbtu gas fired and the three 15 Mmbtu gas/diesel fired boilers as well as any other equipment located in the boiler area deemed necessary to maintain in operation during a power outage.

3. State the reason for the application.

This is a new source and has not been previously permitted..

4. Has a previous Ohio EPA application or plan submission been filed for this source/facility?

No.

5. Will the proposed source/facility comply with all rules, laws, and regulations of the Ohio and U.S. EPA?

Yes.

FOR AIR POLLUTION SOURCES

6. State the amount of each air contaminant from each source in pounds per hour and tons per year at maximum and average conditions.

Maximum operating hours are 1440 hrs/yr.

| Contaminant | Average Conditions | Maximum Conditions |
|-----------------|-------------------------|--------------------------|
| PARTICULATE | 0.46 TPY 0.64 lb/hr. | 0.62 TPY 0.85 lb/hr. |
| SO ₂ | 0.43 TPY 0.60 lb/hr. | 0.58 TPY 0.80 lb/hr. |
| NOx | 6.58 TPY 9.14 lb/hr. | 8.76 TPY 12.16 lb/hr. |
| CO | 1.42 TPY 1.97 lb/hr. | 1.89 TPY 2.62 lb/hr. |

See emission calculations for details.

7. Are the proposed sources required to comply with the following federal requirements?
- i. NSPS- No
 - ii. NESHAP- No
 - iii. PSD- No
 - iv. Appendix "S"- Emission Offset Policy- No
8. Will the proposed sources employ BAT?
- Yes.
9. Will the proposed sources cause significant degradation of air quality?
- No.
10. Will the proposed sources interfere with the attainment and maintenance of ambient air quality?
- No.
11. Describe any source monitoring.
- None
12. Will the proposed sources involve the use of asbestos, etc.,?
- No.
13. Complete a construction schedule.
- Construction schedule attached.
14. Please include the estimated cost of any control equipment to be installed.
- N/A
15. An appendix shall be attached.
- Appendix attached

OHIO ENVIRONMENTAL PROTECTION AGENCY

INSTALLATION SCHEDULE

TO ACCOMPANY APPLICATION FOR PERMIT TO INSTALL

THIS FORM CONSTITUTES PART OF THE APPLICATION OF:

FACILITY NAME: Fernald Environmental Management Project

ADDRESS: 7400 Willey Road, Fernald, Ohio 45030

FOR A PERMIT TO INSTALL THE FOLLOWING AIR CONTAMINANT SOURCE:

IDENTIFICATION: FEMP 10-013

DESCRIPTION: Emergency Backup Diesel Fueled Electric Generator

THE INSTALLATION OF THE ABOVE AIR CONTAMINANT SOURCE IS PLANNED TO FOLLOW THE TIME SCHEDULE DESCRIBED BELOW:

| | <u>DATE</u> |
|------------------------------------|-------------------------|
| 1. EQUIPMENT ORDERED - - - - - | <u>est. August 1995</u> |
| 2. COMMENCE CONSTRUCTION - - - - - | <u>est. August 1995</u> |
| 3. STARTUP - - - - - | <u>est. Dec. 1995</u> |
| 4. PERFORMANCE TESTING - - - - - | <u>None</u> |

For Official Use Only

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

EPA NO. 1431110128 ----
 FEMP ID NO. 10-013

APPENDIX B:FUEL BURNING EQUIPMENT

(Boilers, Heaters, and Steam Generators)

1. Manufacturer To Be Determined Model No. Not Available
2. Your identification Diesel fuel Backup Generator Year Installed TBD
3. Input capacities (10⁶ BTU/hr.): Rated 2.758 Max. 2.8 Normal 2.1
 Output capacities (KW/hr.): Rated 230 Max. 230 Normal 175
 Note: Indicate units if different than above.
4. Percent used for: Space Heating _____% Process _____% Power 100 %
5. Normal Operating schedule: _____hrs./day, _____days/wk., _____wks/year SEE NOTE:
 Note: To be operated during power outages.
6. Type of fuels fired: Coal Oil Natural Gas
 Wood LPG Other, specify _____
7. Type of draft: Natural Induced Forced
 N/A
8. Combustion Monitoring: Fuel/air ratio O₂ Smoke
 Other, specify N/A

COAL FIRED UNITS

9. Type of firing: Hand-fired Underfeed stoker Traveling grate
 Chain grate Spreader stoker Cyclones
 Pulverized-dry bottom
 Pulverized-wet bottom
 Other, specify _____
10. Fly ash reinjection: 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

OEPA No. 1431110128 ----
FEMP ID No. 10-013

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

| Type of Fuel | Heat Content (BTU/Unit) | | | Per Year | Normal/hr. | Maximum/hr. |
|--------------|-------------------------|-----|--------|-------------|------------|-------------|
| | | Ash | Sulfur | | | |
| Coal | BTU/pound | | | tons | lbs. | lbs. |
| Oil | 140M BTU/gallon | .01 | 0.5 | 21.3 Mgals. | 14.8 gal. | 19.7 gal. |
| Gas | BTU/cu.ft. | | | MM cu.ft. | cu.ft. | cu.ft. |
| Wood | | | | tons | lbs. | lbs. |
| LPG | | | | gal. | gals. | gal. |
| Other | | | | | | |

| Type of Fuel | | | | |
|--------------|--------|--------|--------|-------|
| | Winter | Spring | Summer | Fall |
| Coal | N/A | N/A | N/A | N/A |
| Oil | 0-100 | 0-100 | 0-100 | 0-100 |
| Gas | N/A | N/A | N/A | N/A |
| Wood | N/A | N/A | N/A | N/A |
| LPG | N/A | N/A | N/A | N/A |
| Other | N/A | N/A | N/A | N/A |

*Obtain fuel analysis from vendor(s) and report on an as-received basis. Use weighted annual averages.

CONTROL EQUIPMENT

Control Equipment Code:

- | | |
|--------------------------------|------------------------------|
| (A) Settling Chamber | (E) Spray Chamber |
| (B) Cyclone | (F) Cyclonic Scrubber |
| (C) Multiple cyclone | (G) Packing tower |
| (D) Electrostatic precipitator | (H) Venturi |
| | (I) Other <u> N/A </u> |

15. Control Equipment data:

| | | |
|---------------------------|--|--|
| (a) Type (See Above code) | | |
| (b) Manufacturer | | |
| (c) Model No. | | |
| (d) Year installed | | |
| (e) Your identification | | |
| (f) Pollutant Controlled | | |
| (g) Controlled pollutant | | |
| (h) Pressure drop | | |
| (i) Design efficiency | | |
| (j) Operating efficiency | | |

STACK DATA

7705

16. Your stack identification EP10-010
17. Are other sources vented to this stack? Yes No
If yes, identify sources _____
18. Type: Round, top inside diameter dimension 4"
 Rectangular, top inside dimensions (L) _____ x (W) _____
19. Height: Above roof N/A ft., above ground 6 ft.
20. Exit gas: Temp. _____ °F, Volume N/A ACFM, Velocity N/A ft./min.
21. Continuous monitoring equipment: Yes No
If yes, indicate Type _____, Manufacturer _____
Make or Model _____, Pollutant (s) monitored _____
22. Emission data: Emissions from this source have been determined and such data is included with this appendix: Yes No
If yes, check method: Stack Test Emission factor

Completed by Ervin Fisher, Jr., Date 7/26/95

Emission Calculations for: PERMIT TO INSTALL

Facility: Fernald Environmental Management Project Computed by: Ervin Fisher
Source No: 1431110128 ---- Date: July 26, 1995
Source ID: FEMP ID NO. 10-013

I. Emission Estimates: No. 2 Diesel fuel Oil

Load rating (maximum heat input): 2.758 MMbtu/hr
Annual operating hours: Not to exceed 1440 hours/year. Emission factors:
(given as lbs/MMbtu) particulate: 0.31, NOx: 4.41, CO: 0.95, SO₂: 0.29
Emission factor reference: AP-42, table 3.3-2

1. Actual emissions: (heat input basis)

Load Rating:

Three quarter Capacity: (14.8 gal/hr) (140,000 btu/gal) / (1000000
btu/MMbtu) = 2.072 (MMbtu/hr)

Full load: (19.7 gal/hr) (140,000 btu/gal) / (1000000 btu/MMbtu) = 2.758
(MMbtu/hr)

2. Annual actual and potential: 1440 (hrs/year) emission in (tons/year).

Particulates:

ACTUAL: 0.31 (lbs/MMbtu) x 2.072 (MMbtu/hr) x 1440 (hrs/year)/2000
(lbs/ton) = 0.46 TPY

POTENTIAL: 0.31 (lbs/MMbtu) x 2.758 (MMbtu/hr) x 1440 (hrs/year)/2000
(lbs/ton) = 0.62 TPY

SO₂:

ACTUAL: 0.29 (lbs/MMbtu) x 2.072 (MMbtu/hr) x 1440 (hrs/year)/2000
(lbs/ton) = 0.43 TPY

POTENTIAL: 0.29 (lbs/MMbtu) x 2.758 (MMbtu/hr) x 1440 (hrs/year)/2000
(lbs/ton) = 0.58 TPY

NOx:

ACTUAL: 4.41 (lbs/MMbtu) x 2.072 (MMbtu/hr) x 1440 (hrs/year) / 2000
(lbs/ton) = 6.58 TPY

POTENTIAL: 4.41 (lbs/MMbtu) x 2.758 (MMbtu/hr) x 1440 (hrs/year) / 2000
(lbs/ton) = 8.76 TPY

CO:

ACTUAL: 0.95 (lbs/MMbtu) x 2.072 (MMbtu/hr) x 1440 (hrs/year) / 2000
(lbs/ton) = 1.42 TPY

POTENTIAL: 0.95 (lbs/MMbtu) x 2.758 (MMbtu/hr) x 1440 (hrs/year) / 2000
(lbs/ton) = 1.89 TPY