

SUPPLEMENT TO PERMIT NO. 544-95B
Thumb Electric Cooperative
Caro, Michigan
February 29, 2000

GENERAL CONDITIONS

1. Rule 201(1) - The process or process equipment covered by this permit shall not be reconstructed, relocated, altered, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule.
2. Rule 201(4) - If the installation, reconstruction, relocation, or alteration of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the person to whom this permit was issued, or the designated authorized agent, shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or alteration of the equipment allowed by this Permit to Install.
3. Rule 201(6)(a) - If this Permit to Install is issued for a process or process equipment located at a stationary source that is subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, trial operation is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install and until the appropriate terms and conditions of this Permit to Install have been incorporated into the Renewable Operating Permit. Upon incorporation of the appropriate terms and conditions into the Renewable Operating Permit, this Permit to Install shall become void.
4. Rules 201(6)(b) - If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install.
5. Rule 201(8) and Section 5510 of Act 451, P.A. 1994 - The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Departments' rules or the Clean Air Act.
6. Rule 219 - The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b) and (c) of R

- 336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality.
7. Rule 901 - Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property.
 8. Rule 912 - The owner or operator of a source, process, or process equipment shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant in excess of standards for more than one hour, or of any air contaminant in excess of standards for more than two hours, as required in this rule, to the District Supervisor, Air Quality Division. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the District Supervisor within 10 days, with the information required in this rule.
 9. Approval of this permit does not exempt the person to whom this permit was issued from complying with any future applicable requirements which may be promulgated under Part 55 of Act 451, P.A. 1994 or the Clean Air Act.
 10. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
 11. Operation of this equipment may be subject to other requirements of Part 55 of Act 451, P.A. 1994, and the rules promulgated thereunder.
 12. Rule 301 - Except as provided in subrules (2), and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303.
 - a) A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this permit to install.

13. Rule 370 - Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2).
14. Rule 285 - Except as allowed by Rule 285 (a), (b), and (c), applicant shall not substitute any fuels, coatings, nor raw materials for those described in the application and allowed by this permit, nor make changes to the process or process equipment described in the application, without prior notification to and approval by the Air Quality Division.
15. The Department may require the applicant to conduct acceptable performance tests, at the applicant's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001.

SPECIAL CONDITIONS
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1. The total nitrogen oxides, hereafter "NO_x," 12-month rolling time period emissions from units 1-6 shall not exceed 88 tons. The applicant shall monitor and record individually for each unit the daily natural gas usage rate for Unit 5 and the daily fuel oil usage rate for Units 1-6. Within 30 days at the end of each calendar month, the applicant shall calculate the previous 12-month emissions of nitrogen oxides for Units 1-6 using the equation below. The daily natural gas and fuel oil usage rates and the emission rate calculation shall be kept on file for a period of five years and made available to the Air Quality Division upon request. This information may be stored electronically in a format acceptable to the Air Quality Division. This condition is necessary to ensure that Units 1-6 are not a major source as defined in the federal Prevention of Significant Deterioration (PSD) Regulations, 40 CFR 52.21 and Rule 211 (a)(ii) and to ensure compliance with Rules 205 (1)(a) and 205 (3).

Fuel Type	Emission Factor for NO _x
Natural Gas	2.6 lb/1000ft ³ *
No. 2 Fuel Oil	502.8 lb/1000gal**

*Hereafter referred to as "NGEF".

**Hereafter referred to as "FOEF".

Tons NO_x per 12-month rolling time period = NGEF X A + FOEF X B

A = The actual natural gas usage for the previous 12-month time period in cubic feet for Unit 5.

B = The actual fuel oil usage for the previous 12-month time period in gallons for Units 1-6.

2. The NO_x emission rate from Units 1-6, when firing #2 fuel oil, shall not exceed 8,088 pounds per calendar day. This condition is necessary to ensure compliance with 40 CFR 52.21 paragraphs (c) and (d).
3. The NO_x emission rate from Unit 5, when firing natural gas and #2 fuel oil, shall not exceed 1,219 pounds per calendar day. This condition is necessary to ensure compliance with 40 CFR 52.21 paragraphs (c) and (d).
4. The total carbon monoxide, hereafter "CO," emission rate from Units 1-6, when firing #2 fuel oil, shall not exceed 542.4 pounds per calendar day. This condition is necessary to ensure compliance with 40 CFR 52.21 paragraphs (c) and (d).

5. The CO emission rate from Unit 5, when firing natural gas and #2 fuel oil, shall not exceed 273.6 pounds per calendar day. This condition is necessary to ensure compliance with 40 CFR 52.21 paragraphs (c) and (d).
6. The sulfur dioxide emission rate from Units 1-6 shall not exceed 0.56 pound per million BTU's heat input, based on a 24-hour period. This is equivalent to using #2 fuel oil with a 0.50% sulfur content and a heat value of 19,300 BTU's per pound. This condition is necessary to ensure compliance with the emission limits for sulfur dioxide established pursuant to Rule 401.
7. The sulfur dioxide emission rate from Units 1-6, when firing No. 2 fuel oil, shall not exceed the following limits:

Unit	Pounds per calendar day
1	170.4
2	170.4
3	169.4
4	182.4
5	248.2
6	243.4

This condition is necessary to ensure compliance with 40 CFR 52.21 paragraphs (c) and (d).

8. The exhaust gases from Units 1-6 shall be discharged unobstructed vertically upwards to the ambient air from stacks with the following dimensions:

Unit	Diameter (inches)	Minimum Height above ground level (feet)
1	14.5	23.5
2	14.5	23.5
3	14.5	23.5
4	16.0	23.5
5	16.0	23.5
6	16.0	23.5

This condition is necessary to ensure compliance with the National Ambient Air Quality Standards pursuant to the federal Clean Air Act as amended in 1990 and 40 CFR 52.21 paragraphs (c) and (d).