

217/782-2113

CONSTRUCTION PERMIT
PREVENTION OF SIGNIFICANT DETERIORATION APPROVAL

PERMITTEE

Archer Daniels Midland Co.
Attn: Pat Dennis
4666 Faries Parkway
Decatur, Illinois 62526

Application No.:99120082

I.D. No.: 115015AAE

Applicant's Designation: DRYER #7

Date Received: December 30, 1999

Subject: Wet Corn Mill Feed Dryer #7

Date Issued:

Expiration Date:

Location: 4666 Faries Parkway, Decatur

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of feed Dryer #7 and associated control equipment as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

In conjunction with this permit, approval is given with respect to the Prevention of Significant Deterioration of Air Quality Regulations (PSD) to construct the above referenced project, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the following findings and the conditions, which follow:

1. Archer Daniels Midland (ADM) has requested a construction permit for a new feed dryer (Dryer #7) in the wet corn mill (Mill) at its Decatur manufacturing complex. The dryer produces cattle feed from the material that remains after the starch, oil and gluten are removed from corn. Emissions from the dryer would be controlled by a multi-stage control system, including cyclones, primary scrubbing and secondary scrubbing. Dryer #7 would allow ADM to reduce the load of the six existing feed dryers, which is expected to reduce emissions from the dryers. The new dryer would only facilitate a significant increase in the throughput of the mill if other changes were made to increase the mills capacity.

2. The source is located in Decatur Township in Macon County. The area is designated attainment for all pollutants.
3. The project is subject to PSD review for particulate matter (PM) and nitrogen oxide (NO_x) because feed Dryer #7 has the potential to emit significant amounts of PM and NO_x, i.e., more than 15 and 40 tons/year respectively, and ADM has not previously obtained a PSD permit for the six feed dryers already in the wet corn mill. The permit would allow annual PM and NO_x emissions of 31.5 and 64.8 tons respectively from feed Dryer #7.
4. After reviewing the materials submitted by ADM, the Illinois EPA has determined that the project, as proposed, would (i) be in compliance with applicable Board emission standards and (ii) utilize Best Available Control Technology (BACT).
5. The Illinois EPA has determined that the project, as proposed, would comply with all applicable Illinois Air Pollution Board Regulations and the federal Prevention of Significant Deterioration of Air Quality Regulations (PSD), 40 CFR 52.21.
6. A copy of the application and a summary of the Illinois EPA's review of the application and a draft of this permit were placed in a location in the vicinity of the project, and the public was given notice and an opportunity to examine this material and to submit comments and to request a public hearing on this matter.

The Illinois EPA is issuing this approval subject to the following conditions and consistent with the specifications and data included in the application. Any departure from the conditions of this approval or terms expressed in the application would need to receive prior written authorization by Illinois EPA.

Standard Conditions

1. Standard conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply, unless superseded by the following special conditions.

Best Available Control Technology

- 2a. i. Dryer #7 shall be equipped, operated, and maintained with a three-stage particulate mater (PM) control system consisting of cyclones, primary scrubbing and secondary venturi scrubbing. The control system shall be operated and maintained in conformance with good air pollution control practices.

- ii. The PM emission control system shall be designed, constructed, and maintained to achieve PM emission rate from Dryer #7 that is no more than 0.015 gr/dscf. For this purpose, PM shall be determined as filterable particulate matter, as measured by USEPA Method 5 (See Also Condition 5).
- b. i. Dryer #7 shall be equipped, operated, and maintained with low NO_x natural gas-fired burners. The burners shall be operated and maintained in conformance with good air pollution control practices.
- ii. The burners shall be designed, constructed, and maintained to achieve a NO_x emission rate from Dryer #7 that is no more than 0.08 lb per million Btu heat input from fuel.

Condition 2 addresses Best Available Control Technology, for PM and NO_x emissions as required by Section 165 of the Clean Air Act.

3. Limitations

- a. Emissions of PM and NO_x from Dryer #7 shall not exceed the following limits:
 - i. PM emissions shall not exceed 7.2 lb/hour and 31.5 tons/year.
 - ii. NO_x emissions shall not exceed 14.8 lb/hour and 64.8 tons/year.
- b. This permit is issued based on Dryer #7 not being subject to PSD for pollutants other than PM and NO_x because emissions of other regulated pollutants from Dryer #7 would not be significant.
- c. This permit does not authorize changes to the mill that are unrelated to Dryer #7 that would increase the mills capacity.

Good Operating Practices

- 4. The Permittee shall operate, maintain, and repair Dryer #7 and its control system in a manner assuring compliance with the requirements of applicable board rules and Conditions 2, 3, and 4 by implementing the following procedures.
 - a. Operating Procedures for Control System: Written operating procedures shall be developed and maintained describing normal air pollution control equipment operation. Such procedures shall include maintenance practices and may incorporate the manufacturers recommended operating instructions.

- b. Operating Procedures for Burner: Written operating practices shall be developed and maintained, including establishment of target levels for the following operating parameters for the low NO_x burner:
 - i. Furnace Temperature Operating Range;
 - ii. Air-Fuel Mixture; and
 - iii. Recirculated Air Damper Position and Secondary Air.
- c. Inspections: Visual inspections of Dryer #7 and its air pollution control and monitoring equipment shall be conducted on at least a weekly basis.
- d. Repairs: Prompt repairs shall be made upon identification of need either as a consequence of formal inspections or other observations in conformance with good air pollution control practice.
- e. Records: Records of inspection, maintenance, and repair activities for all equipment shall be kept on site and shall include as a minimum:
 - i. Date of inspection, maintenance, and repair activities.
 - ii. Description of maintenance or repair activity if not routine preventative maintenance.
 - iii. Probable cause for requiring maintenance or repair if not routine or preventative.

5. Emission Testing Requirements

- a.
 - i. Within 180 days of startup of Dryer #7 the Permittee shall have PM, NO_x, and SO₂ emissions and opacity from Dryer #7 measured at it's expense by an approved testing service, during conditions which are representative of maximum emissions to verify compliance with the requirements of this permit.
 - ii. Emission measurements shall also be conducted upon written request from the Illinois EPA.
- b.
 - i. The following testing methods and procedures shall be used. Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter (PM)	USEPA Method 5*
Sulfur Dioxide (SO ₂)	USEPA Method 6
Opacity	USEPA Method 9
Nitrogen Oxides (NO _x)	USEPA Method 20

* Measurements shall also be taken and reported for the back half of the sampling train, to obtain additional measurements of condensable particulate matter.

- ii. Due to the high moisture levels in the exhaust from the feed dryers, USEPA particulate matter₁₀ (PM₁₀) test methods are not considered reliable and are not being required to measure PM₁₀.
- c. The Permittee shall submit a written test plan to the Illinois EPA for review and comment for the initial testing and if a significant change in the procedures for this testing is planned from the procedures followed in the previous test. This plan shall be submitted at least 30 days prior to the actual date of testing and include the following information as a minimum:
 - i. A description of the planned test procedures.
 - ii. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - iii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions.
 - iv. The specific points at which samples will be taken for a pollutant if sampling will be conducted at the stack, or other point that includes the exhaust from other dryers, rather than after the Venturi scrubber, and the approach being taken for showing compliance, e.g., all dryers will comply with a PM limit of 0.015 gr/scf.
- d. The Permittee shall notify the Illinois EPA prior to conducting these measurements to enable the Illinois EPA to observe testing. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may accept shorter advance notice if it does not interfere with the Illinois EPA's ability to observe testing.

- e. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 30 days after the test results are compiled and finalized. These reports shall include as a minimum:
 - i. General information, i.e., date of test, names of testing personnel, and names of Illinois EPA observers.
 - ii. A summary of results, e.g. PM, NO_x, and SO₂ emissions, lb/hour and gr/scf.
 - iii. Detailed description of operating conditions of the dryer, including:
 - A. Process information, e.g. feed composition, operating rate, and moisture content.
 - B. Control system operating parameters during testing.
 - iv. Data and calculations.
 - v. Conclusions.

6. Monitoring

- a. i. The Permittee shall install, maintain and operate continuous monitors on the scrubbers that supply continuous readings and store average hourly values for the following parameters:
 - A. Pressure drop across the Venturi throat.
 - B. Scrubbant flow rate (gallons/minute).
 - C. Gas flow rate through the control system (acfm).
- ii. The Permittee shall take samples of the following once per day.
 - A. Solids content of incoming makeup water.
 - B. Solids content of any recycled scrubbant.
- b. The Permittee shall install, maintain and operate continuous monitors on the low NO_x burner(s) for the following parameters:
 - i. Firing Rate.

- ii. Furnace Temperature.
- iii. Air-Fuel Mixture.
- iv. Volume of Recirculated Air Damper Position or Secondary Air.

7. Recordkeeping

- a. The Permittee shall maintain the following operating records for Dryer #7. This data shall be recorded whenever a new measurement is taken or an item is changed, except as specified below:
 - i. Dryer throughput based on the daily grind rate and relative loading, firing rate (mmBtu/hr) and feed moisture levels (input and output % moisture), recorded at least once per shift.
 - ii. Configuration of the control system, including bypass of any unit and significant changes in its usage of units.
 - iii. Desired values of the operating parameters of the control system, including the setting for pressure drop across the variable throat Venturi.
 - iv. Quality of incoming new and recycled scrubbant(s).
 - v. Caustic level in scrubbant (PH).
- b. The Permittee shall maintain records of the following operating parameters for the emission control units. These parameters for which there is continuous monitoring (See Condition 6a) shall be manually recorded at least every two hours, if automatic measurement and recording device(s) are not in service for more than two hours. Other parameters shall be recorded at least every two hours.
 - i. Amperage draw on Venturi fan.
 - ii. Scrubbant valve position.
 - iii. Makeup water flow rate for the Venturi scrubber (gallons/minute).
 - iv. For the low NO_x burner:
 - A. Firing rate based on percent valve opening and gas pressure.

- B. Furnace temperature based on percent valve opening of gas pressure.
 - C. Volumetric flow rate of recirculated air and secondary air based on damper position.
- c. The Permittee shall maintain records of the following operating parameters for components in the control system other than the Venturi scrubber, recorded at least every two hours.
- i. Scrubbant flow rate for the primary scrubbers.
 - ii. Pressure drop across the packed tower.
 - iii. Temperature drop across the waste heat evaporator.
- d. The Permittee shall keep records of all emission measurements conducted for Dryer #7 including:
- i. Records of emission measurements conducted pursuant to Condition 6.
 - ii. Records of other measurements of emissions conducted as part of the evaluation of Dryer #7.
- e. The Permittee shall maintain records for any period during which Dryer #7 was in operation when its air pollution control equipment was not in operation or was not operating properly.
- i. These records shall include each period of time when an operating parameter of a control system, as recorded above, deviated outside the level set as good air pollution control practice (date, duration and description of the incident).
 - ii. These records shall include the cause for pollution control equipment not operating properly or being out of normal service, for incidents when control equipment failed to operate properly and shall identify the corrective actions that were taken, the repairs that were made, and the steps that were taken to prevent any such reoccurrence.
 - iii. These records shall also identify any such periods during which an emission unit exceeded the requirements of this permit, including applicable emission limits. This record shall include the cause for noncompliance, if known, and the corrective action(s) and preventive measures taken to prevent any such reoccurrence if any.

- f. The Permittee shall keep emission records for Dryer #7 as follows:
 - i. PM emission rate, in lb/hour, determined for each configuration and condition of the dryers and their control systems, based on test data or other engineering estimates with supporting explanations and calculations. Until emission testing is conducted, this determination shall be based on design data.
 - ii. Number of hours operated at each emission rate identified above on a monthly basis, with explanation.
 - iii. Monthly emissions of PM, NO_x, and SO₂, determined as the summation of the product of the above records
 - iv. Annual emissions of PM, NO_x and SO₂

8. Records Retained

- a. The Permittee shall retain all records required by this permit at the source for at least three years, at a location where the records are readily accessible for inspection by the Illinois EPA.
- b. The Permittee shall make all records required by this permit available for inspection at the source by the Illinois EPA, providing copies of records to the Illinois EPA upon request. For this purpose, the Permittee may keep records in a computerized data system provided that, upon request by the Illinois EPA during the source's normal working hours, requested information is retrieved and available prior to inspection completion to the Illinois EPA.

9. Notification

- a. The Permittee shall notify the Illinois EPA within 5 days of the initial startup of Dryer #7.
- b. If there is an exceedance of the emission limits of this permit as determined by the records required by this permit or by other means, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

10. Illinois EPA Addresses

Any required reports and notifications concerning equipment operation, emissions testing, or a monitoring system shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276
Telephone: 217/782-5811 Fax: 217/524-4710

A copy of all required reports and notifications, except the Annual Emission Report required by 35 IAC Part 201.302, shall also be sent to the Illinois EPA at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234
Telephone: 618/346-5120

11. Other Requirements

This permit does not relieve the Permittee of the responsibility to comply with all applicable local, state and federal requirements which are part of Illinois' State implementation Plan, as well as all other applicable local, state and federal requirements.

If you have any questions concerning this permit, please contact Kevin Smith at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

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cc: Region 3