



Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

DEPARTMENT OF NATURAL RESOURCES

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DEC 17 2009

Mr. Kenneth J. Anderson  
 Managing Supervisor – Air Quality  
 Ameren Services Environmental Services  
 1901 Chouteau Avenue  
 PO Box 66149  
 St. Louis, MO 63166-6149

RE: New Source Review Permit Application  
 Installation ID: 071-0003, Expiration Date: June 1, 2010  
 Temporary Permit Number: 122009-009

Dear Mr. Anderson:

The Missouri Department of Natural Resources' Air Pollution Control Program has completed a review of your October 15, 2009 request to conduct an experimental flue gas conditioning project on a single coal-fired unit at the AmerenUE Labadie Plant (Ameren Labadie) located at 226 Labadie Power Plant Road, Labadie, Missouri in Franklin County. The Air Pollution Control Program is hereby granting your request to conduct this temporary activity according to Missouri State Rule 10 CSR 10-6.060(3), *Temporary Installation Permits*. Operation of the experimental flue gas conditioning project at this site shall not go beyond June 1, 2010.

Ameren Labadie is an existing coal-fired power plant that utilizes a sulfur trioxide (SO<sub>3</sub>) conditioning agent in the flue gas stream entering the electrostatic precipitator (ESP). The SO<sub>3</sub> conditioning agent reduces the resistivity of the fly ash, which improves the collection efficiency of the ESP. Ameren Labadie is considering the future installation of an activated carbon injection system for the control of mercury emissions. Ameren Labadie has determined that SO<sub>3</sub> selectively adsorbs to activated carbon instead of mercury thereby reducing the effectiveness of the activated carbon as a mercury emissions control device. Therefore, Ameren Labadie must first find a suitable replacement for the SO<sub>3</sub> conditioning agent.

Ameren Labadie has requested to conduct experimental trials to evaluate the effectiveness of a substitute flue gas conditioning technology referred to as ATI-2001. ATI-2001 is a material containing inorganic salts and organic compounds but does not contain any volatile organic compounds or hazardous air pollutants. Ameren Labadie proposes to conduct evaluation and optimization experiments, which will include injecting the flue gas conditioner upstream of the

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ESP and varying the concentration of the ATI-2001 conditioner in the flue gas stream. The proposed ATI-2001 flue gas conditioning technology is expected to maintain or improve the current capture efficiency of the ESP utilizing the SO<sub>3</sub> conditioning agent. Therefore, no increase in emissions of any pollutant is expected.

Ameren Labadie shall limit the total combined days for all trials of the ATI-2001 conditioning technology to less than 50 days between permit issuance and the expiration of the permit. Ameren Labadie shall monitor and record stack opacity during each trial utilizing the ATI-2001 conditioning technology. No later than 90 days following the expiration of this permit, Ameren Labadie shall submit a project report to the Air Pollution Control Program. This report shall include:

1. identification of the emission unit (boiler) and control device (ESP) evaluated for this project
2. the date, time, and duration of each trial
3. The six minute average opacity data collected during each trial and for a 24-hour period before and after each trial
4. conclusions reached concerning the effectiveness of the ATI-2001 conditioning technology as a substitute for the SO<sub>3</sub> conditioning technology

Ameren Labadie has indicated that, due to the experimental nature of this project, opacity exceedances may occur. Although Ameren Labadie should avoid violating 10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants*, the Air Pollution Control Program will excuse periods of opacity greater than 20% associated with this project, provided they are noted in the Excess Emission Report.

You are still obligated to meet all other applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you shall not violate:

- 10 CSR 10-5.030, *Maximum Allowable Emission of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*
- 10 CSR 10-5.160, *Control of Odors in the Ambient Air*
- 10 CSR 10-5.510, *Control of Emissions of Nitrogen Oxide*
- 10 CSR 10-6.170, *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*
- 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter From Industrial Processes*

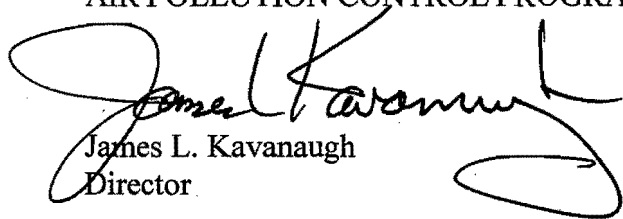
A copy of this letter should be kept with the unit and be made available to Department of Natural Resources' personnel upon verbal request.

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If you have any questions regarding this permit, please do not hesitate to contact Kathi Jantz with the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



James L. Kavanaugh  
Director

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JLK:kjk

c: Mr. Paul Jeffery, Compliance/Enforcement Section  
St. Louis Regional Office  
PAMS File: 2009-10-044