



Kathleen Sebelius, Governor  
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH  
AND ENVIRONMENT

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Division of Environment

## **AIR EMISSION SOURCE CONSTRUCTION PERMIT**

**Source ID No.:** 1770030

**Effective Date:** March 18, 2008

**Source Name:** Westar Energy, Inc. - Tecumseh Energy Center

**NAICS:** 221112, Fossil fuel power generation

**Site Location:** 2<sup>nd</sup> & Dupont Road  
Tecumseh, Kansas 66601

**Site Owner/Operator Name:** Westar Energy, Inc.

**Site Owner's/Operator's  
Mailing Address:** 818 South Kansas Avenue  
Topeka, Kansas 66612

**Contact Person for Site Owner/  
Operator:** Mr. Daniel R. Wilkus, P.E. – Manager, Air Programs  
Telephone Number (785) 575-1614

**This permit is issued pursuant to K.S.A. 65-3008 as amended.**

### **Description of Activity Subject to Air Pollution Control Regulations**

Westar Energy, Inc. (Westar) is proposing to initiate a NO<sub>x</sub> and particulate reduction project on Unit 7/9 (TEC7/9) and Unit 8/10 (TEC8/10) at the Tecumseh Energy Center. The project will include for each unit the addition of low-NO<sub>x</sub> burners, separated overfire air (SOFA), and rebuilding of the electrostatic precipitator (ESP). This project will result in a decrease in nitrogen oxide (NO<sub>x</sub>) emissions and an increase in carbon monoxide (CO) emissions as a result of installation of the low-NO<sub>x</sub> burners and SOFA, and a decrease in the particulate matter (PM and PM<sub>10</sub>) emissions as a result of the ESP rebuild.

DIVISION OF ENVIRONMENT  
Bureau of Air & Radiation  
Air Permitting Section

CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 310, TOPEKA, KS 66612-1366

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The proposed modification will be subject to the requirements of 40 CFR 52.21, Prevention of Significant Deterioration (PSD) as adopted under K.A.R. 28-19-350 as a result of being a major modification of a major stationary source for at least one regulated pollutant emitted in excess of the PSD significant emission levels. TEC7/9 and TEC8/10 are affected sources subject to Title IV of the Federal Clean Air Act, Acid Deposition Control. The proposed project does not constitute a modification or reconstruction for the purpose of determining applicability of New Source Performance Standard (NSPS) requirements.

Emissions of NO<sub>x</sub> and CO were evaluated for this permit review. This project is subject to the provision of K.A.R. 28-19-300 (Construction permits and approvals; applicability) because the potential-to-emit of CO exceeds 100 tons per year.

An air dispersion modeling impact analysis, an additional impact analysis, and a Best Available Control Technology (BACT) determination were conducted as a part of the construction permit application process.

### **Significant Applicable Air Pollution Control Regulations**

The following significant Kansas air quality regulations were determined to be applicable to this project:

K.A.R. 28-19-300 Construction permits and approvals; applicability

K.A.R. 28-19-350. Prevention of significant deterioration of air quality

### **Air Emission Unit Technical Specifications**

The following equipment or equivalent is approved:

1. Installation of low-NO<sub>x</sub> burners
2. Addition of separated overfire air (SOFA) capability
3. Rebuilding of the ESPs.

### **Air Emissions Estimate from the Proposed Activity**

Pollutant Type	Baseline Actual (Tons per Year)	Projected Actual	Change in Emissions
Nitrogen Oxides (NO <sub>x</sub> )	3,172	2,375	-796
Carbon Monoxide (CO)	221	3,299	+3,078 <sup>1</sup>

### **Air Emission Limitations**

#### 1. Coal-fired Boilers:

- a. The thirty (30) day rolling average emission rate of carbon monoxide (CO) emissions shall not exceed 0.25 lb/mmBtu, excluding periods of startup, shutdown, and malfunction.
- b. The purpose of this project is to reduce the NO<sub>x</sub> emissions from TEC7/9 and TEC8/10. In the event difficulties are encountered demonstrating compliance with the CO limit while optimizing NO<sub>x</sub> emissions, the owner or operator may request a revision to the CO limit.

### **Monitoring, Recordkeeping and Reporting**

1. Compliance with the CO BACT limit shall be demonstrated with a continuous emission monitoring system (CEMS). The CO CEMS shall be installed, certified, operated, maintained, and quality assured according to 40 CFR 60, Appendix B, Performance Specification 4 (PS4) and 40 CFR 60, Appendix F (Quality Assurance/Quality Control) within 180 days after startup.
2. Provide a report of the CEMS certification within 30 days after certification is completed.
3. Reports of excess emissions shall be submitted semi-annually in accordance with the requirements in 60.7(c). The summary report referenced in 60.7(c) and defined in 60.7(d) applies to the CO CEMS downtime only and is not applicable to an exceedance of the CO limit established in this document.
4. Records shall be kept on site for 2 years in accordance with 60.7(f).

### **General Provisions**

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<sup>1</sup> Emission estimates are based on new emission limit.

1. This document shall become void if installation of the project has not commenced within 18 months of the effective date of this permit, or if installation is interrupted for a period of 18 months or longer.
2. A construction permit or approval must be issued by KDHE prior to commencing any construction or modification of equipment or processes which result in an increase in potential-to-emit equal to or greater than the thresholds specified at K.A.R. 28-19-300.
3. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow a representative of the KDHE (including authorized contractors of the KDHE) to:
  - a. enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under conditions of this document;
  - b. have access to and copy, at reasonable times, any records that must be kept under conditions of this document;
  - c. inspect at reasonable times, any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this document; and
  - d. sample or monitor, at reasonable times, for the purposes of assuring compliance with this document or as otherwise authorized by the Secretary of the KDHE, any substances or parameters at any location.
4. The emission unit or stationary source which is the subject of this document shall be operated in compliance with all applicable requirements of the Kansas Air Quality Act and the Federal Clean Air Act.
5. This document does not relieve the permittee of the obligation to obtain other approvals, permits, licenses or documents of sanction which may be required by other federal, state or local government agencies.
6. Issuance of this document does not relieve the owner or operator of any requirement to obtain an air quality operating permit under any applicable provision of K.A.R. 28-19-500.

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Rick Bolfing, P.E.  
Environmental Engineer  
Air Permitting Section

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Date Signed

RJB:saw  
c: SCHA  
C-7564