

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

July 10, 2012

Ameren Energy—E.D. Edwards	)	
	)	
Petitioner,	)	
	)	
v.	)	IEPA – 12-18
	)	(Provisional Variance-
	)	Water)
	)	
ILLINOIS ENVIRONMENTAL	)	
PROTECTION AGENCY,	)	
	)	
Respondent.	)	

Re: Extension of Provisional Variance from Effluent Limits Contained in NPDES Permit IL0001970

Dear Mr. Menne:

On June 29, the Illinois Environmental Protection Agency (Agency) granted a provisional variance (Exhibit A) to the Ameren Energy—E.D. Edwards Power Plant (“Ameren Edwards”). This provisional variance is to end no later than July 10, 2012. On July 10, 2012, Ameren Edwards submitted a request for an extension to its provisional variance (Exhibit B).

Ameren Edwards requests that the terms and conditions of its initial provisional variance from the thermal limits in NPDES Permit IL0001970 (Exhibit C) be extended through July 20, 2012, so that Ameren Edwards can continue operating through this unusually hot and dry period of weather and resulting high river temperatures.

Based on its review, the Agency GRANTS Ameren Edwards an extension to its provisional variance, subject to the specific conditions set forth below.

*Background*

Ameren Edwards is an electric generating station owned and operated by Ameren, and located in Bartonville, Peoria County. Ameren Edwards is a coal-fired generation facility located on the west side of the Illinois River, and consists of three steam electric generating units with a net generation rating of 117 MW, 262 MW, and 361 MW. Units 1, 2, and 3 went into commercial operation in 1960, 1968, and 1972, respectively. All three units burn different blends of coal. Various coals are transported to the site by rail and blended onsite for each unit. The three units’ start-up power is supplied through a switchyard breaker, start-up transformer, and a circuit breaker located in the Ameren Edwards 138 kV switchyard. Illinois EPA issued NPDES Permit No. IL0001970 to Ameren

Edwards, effective February 1, 2006. (Exhibit B) Ameren Edwards timely filed a renewal application that is currently pending before Illinois EPA permits section.

Ameren Edwards' once-through non-contact cooling water system discharges an annual average of 579 million gallons per day to the Illinois River during full load operation. The maximum temperature rise across the main heat exchangers (condensers) is approximately 16°F.

The net capacity factor for the Ameren Edwards during the first five months of 2012 is approximately 65%. Ameren Edwards would likely be categorized as a "load-following" facility; however generation is dependent on many factors that are outside of its control. Ameren Edwards does not serve a specific population *per se*; rather generation is dispatched (sold) into the Midwest Independent System Operator (MISO) system for use by consumers throughout the MISO control area based on MISO requirements.

Ameren notes that temperatures during the 2012 calendar year have been determined to be the "warmest on record" by the Illinois State Water Survey and other meteorological authorities. The area has recently experienced record-setting temperatures that significantly impact the upstream Illinois River temperature. The National Weather Service continues to project high temperatures in the Peoria, Illinois area to be near or above 90°F with little if any precipitation.

Ameren Edwards notes that temperatures in Peoria County Illinois during 2012 have been above average for an unusually long historic period of time and are forecasted to remain elevated for some period. At the same time, Illinois River flows are forecasted to be below average. The much greater than average ambient weather conditions contribute to elevated water temperatures in the Illinois River Basin, including the plant's cooling water intake. The Illinois River is experiencing temperatures higher than at any time during the last several years. Ameren Edwards has attached a chart containing Illinois River temperature and flow data to its application. These higher intake water temperatures directly correlate to Outfall 002 discharge temperatures that are also above normal.

#### *Relief Requested*

Special Condition 3 of NPDES Permit IL0001970 applies monthly maximum thermal limits to Ameren Edwards' discharges to the Illinois River during the summer months (April through November). Special Condition 3 provides that water temperature at the edge of the mixing zone shall not exceed 90°F degrees Fahrenheit more than 1% of the hours in a year (87.6 hours, referred to as "excursion hours"), and at no time exceed 93°F.

Ameren Edwards requests that the Agency grant an extension to provisional variance 12-18 from the thermal limits applicable to discharges from Edwards Power Station via Outfall 002 to the Illinois River. Ameren Edwards requests that in lieu of the monthly maximum temperature limits in Special Condition 3,

the Agency grant Ameren Edwards a provisional variance extension authorizing a maximum water temperature at the outside edge of the mixing zone of 96 °F during the term of the extension (240 hours). Compliance would be calculated in accordance with the equation provided in Special Condition 3.

*Necessity for Relief*

Ameren Edwards reports that the current Illinois River flow at Ameren Edwards is approximately 4,000cfs, and forecasted to decrease and remain at approximately 3,600cfs at least through July 16, 2012. The observed temperature of the receiving stream on July 9, 2012 was 88°F, and is expected to continue to remain near this value as the hot (~90°F) and sunny conditions continue. Based on the forecasted weather and stream flow conditions, Ameren Edwards anticipates that the calculated mixed river temperature will likely continue to exceed 90°F through the forecast period (July 16, 2012).

Ameren Edwards states that electrical demand continues to be elevated due to the current high temperatures and commensurate stress on the electrical distribution system. Ameren Edwards states further that its Units 1&2 are critical to supply voltage support for the Peoria Area 69KV system which would sag to unacceptable levels if these two units were forced off-line. Unit 3 at Edwards services the Peoria 138KV system which is anticipated to be at or near its limits during the high forecasted load. According to Ameren Edwards, if Unit 3 is unavailable, then the 138KV system would likely need to obtain reactive power from the already stressed Peoria 69KV system. Ameren Edwards states that its continued generation is critical to ensure stability of both the 69KV and 138KV power systems in the Peoria area during high electrical demand periods.

Ameren Edwards has exhausted its allowable excursion hours. Ameren Edwards states that if the requested extension is not granted, it will have to terminate operations, thereby jeopardizing grid stability. Ameren Edwards also notes that a continued discharge from Outfall 002 would still be necessary for some time for safe shutdown of the plant.

Ameren Edwards reports that there have been no fish kills that can be attributed to its thermal discharge.

*Agency Determinations*

The Agency has reviewed the requested provisional variance extension and has concluded the following:

1. Any environmental impact from the requested relief shall be closely monitored and the Agency shall be immediately notified of any adverse impacts.
2. No reasonable alternatives appear available;
3. No public water supplies should be affected;
4. No federal regulations preclude the granting of this request; and

5. Ameren Edwards will face an arbitrary and unreasonable hardship if the request is not granted.

*Conditions*

The Agency hereby GRANTS Ameren Edwards a provisional variance extension from Special Condition 3 of NPDES Permit IL0001970, subject to the following conditions:

A. The term of this provisional extension begins on July 10, 2012 and goes through July 20, 2012. This provisional variance extension, however, is granted based on the facts and circumstances described in the request for extension dated July 10, 2012, including consecutive days of abnormally high temperatures at Ameren Edwards, and high water temperatures in the Illinois River. If the facts or circumstances described in the July 10, 2012 request abate, the term of this provisional variance extension will end.

B. Ameren Edwards must continuously monitor discharge and receiving water temperatures and visually inspect all discharge areas at least four times per day to assess any mortalities to fish and other aquatic life. This monitoring shall occur during the period of the provisional extension and shall continue for a minimum of two days after the provisional variance extension expires. Ameren Edwards shall provide the best operation of its available equipment to produce the best effluent possible at all times during the term of this provisional variance extension. At no time shall the water temperature at the edge of the mixing zone exceed a temperature of 96°F during the term of this provisional variance.

C. During the provisional variance extension period, Ameren Edwards shall:

1. Continue monitoring of the intake and discharge temperatures on an hourly basis to assess the mixed water temperature in the mixing zone of the river; and
2. Daily inspect the river bank downstream of Ameren Edwards for any increase in fish mortality rates;
3. Immediately advise all necessary agencies of any abnormal rise in fish mortality rates noted during the inspection and assess options for addressing the abnormal severe conditions; and
4. Reduce load on the operating units during off peak times as long as permitted by the MISO transmission operator in order to minimize economical and reliability impacts to the markets.

D. Ameren Edwards shall document environmental conditions during the term of the provisional variance extension and submit the documentation to the Agency and the Department of Natural Resources within seven (7) days after this provisional variance extension expires.

E. Ameren Edwards shall immediately notify the Agency and the Department of

Natural Resources of any unusual conditions, including mortalities of fish or other aquatic life, immediately take action to remedy the problem, investigate and document the cause and seriousness of the unusual conditions while providing updates to the Agency and the Department of Natural Resources as changes occur until normal conditions return; notify the Agency and the Department of Natural Resources when normal conditions return and submit the documentation to the Agency and the Department of Natural Resources within seven (7) days after normal conditions return.

F. Ameren Edwards shall develop and implement a response and recovery plan to address any adverse environmental impact due to thermal conditions that could result from the provisional variance extension, including loss and damage to aquatic life.

G. Ameren Edwards shall notify Roger Callaway, of the Agency, by telephone at 217-782-9720 when the discharge specified in this provisional variance extension begins and again when it ends. Written confirmation shall be sent within five days to the following address:

Illinois Environmental Protection Agency  
Bureau of Water - Water Pollution Control  
Attention: Roger Callaway  
1021 North Grand Avenue East, CAS #19  
Springfield, Illinois 62794-9276

H. Ameren Edwards shall sign a certificate of acceptance of this provisional variance extension and forward that certificate to Roger Callaway at the address indicated above within one day after the date of this order.

The certification should take the following form:

I (We) \_\_\_\_\_, hereby accept and agree to be bound by all terms and conditions of the provisional variance extension granted by the Agency in \_\_\_\_\_ dated \_\_\_\_\_.

\_\_\_\_\_  
Petitioner Title  
  
\_\_\_\_\_  
Authorized Agent Date

Ameren shall continue to monitor all parameters included in and comply with all other conditions specified in its NPDES Permit No. IL0001970.

*Conclusion*

The Agency grants this provisional variance extension in accordance with its authority contained in Sections 35(b), 36 (c), and 37(b) of the Illinois Environmental Protection Act (415 ILCS 5/35(b), 36(c), and 37(b) (2004). The

decision to grant this provisional variance extension is not intended to address compliance with any other applicable laws or regulations.

Sincerely,

Julie K. Armitage  
Acting Chief Legal Counsel

cc: John Kim  
Julie Armitage  
Marcia Willhite  
Lisa Bonnet  
Sanjay Sofat  
Chuck Gunnarson  
Roger Callaway  
Vera Herst