

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

July 3, 2012

Midwest Generation)
Joliet 9, Joliet 29, and Will County Stations)
)
)
)
Petitioner,)
)
v.)
)
ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)
)
Respondent.)

13-3
IEPA - ~~12-20~~
(Provisional Variance-Water)

Re: Provisional Variance From Thermal Limits Contained in Joliet Station 9 NPDES Permit IL0002216; Joliet Station 29 NPDES Permit No. IL0064254; Will County Station NPDES Permit No. IL0002208.

Dear Mr. Claybaugh:

The Illinois Environmental Protection Agency (Agency) has completed its technical review of the attached provisional variance request, dated July 3, 2012 (Attachment A) submitted by Midwest Generation for its Joliet Station 9, Joliet Station 29, and Will County Station. Because of extremely hot weather conditions and the resulting maximum customer demand for electricity needed for cooling Midwest Generation has requested a provisional variance from the thermal limits at the I-55 Bridge in the Lower Des Plaines River contained in these stations' NPDES permits.

Based on its review, the Agency GRANTS Midwest Generation a provisional variance from thermal limits at the I-55 Bridge for its Joliet Station 9, Joliet Station 29, and Will County Station, subject to the specific conditions set forth below.

Background

The generating units at each of Midwest Generation's stations are coal-fired, and each utilizes an open cycle, once-through condenser cooling system. The Midwest Generation Stations are steam-electric generating processes that require the use of large volumes of surface water.

The Will County Station is located in Romeoville at River Mile 295.5 on the Chicago Sanitary and Ship Canal, and is a two-unit steam electric facility with an 897 megawatts

production capacity and a design circulating water flow rate of approximately 864 Million Gallons per Day (“MGD”). The Will County Station is not equipped with cooling towers.

The Joliet Station 9 and Joliet Station 29 are located in Will County, Illinois, approximately one mile southwest of the City of Joliet, Illinois, which discharge wastewater, including cooling water, into the adjacent Lower Des Plaines River at locations approximately seven miles north of the I-55 Bridge pursuant to the NPDES Permits described above. Joliet Station 9 is on the east bank of the river and Joliet Station 29 is on the west bank. Both of these thermal discharges flow into the lower Des Plaines River approximately one-half mile downstream of the Brandon Road Lock and Dam between River Miles 285 and 284. Both stations utilize open cycle, once-through condenser cooling systems.

Joliet Station 9 has a single generation unit, Unit 6. It is capable of producing 341 megawatts of electricity and has a design circulating water flow rate of approximately 376 MGD. The design maximum temperature rise in the circulating cooling water is approximately 10.7°F. Joliet Station 9 is not equipped with cooling towers.

Joliet Station 29 has two generation units, Unit 7 and Unit 8. Units 7 and 8 are capable of producing approximately 1100 megawatts, with a design circulating water flow rate of approximately 1325 MGD. The design maximum temperature rise in the circulating cooling water is approximately 12.4° F. The Joliet Station 29 is equipped with cooling towers, referred to as “helper cooling towers” because they are not designed for long-term, continuous runs. They are capable of cooling approximately one-third of Units 7 & 8’s total design discharge.

All of these facilities are operated on a daily load cycle which matches electrical demand needs and provides power into the PJM Interconnection, a regional transmission organization that coordinates the movement of wholesale electricity in Northern Illinois, and all or parts of 13 states and the District of Columbia. The PJM region has an area of 214,000 square miles, and a population of about 60 million.

Due to the widespread heat and drought conditions throughout the Midwest, there are many power producers which supply the PJM system that either are currently impacted or will be, given the long-range forecast for extended high air temperatures. As facility operations succumb to heat-related equipment failures and continued compliance challenges which limit their ability to provide needed power to the grid, the necessity for regulatory relief in the form of a provisional variance will become increasingly critical. This is already apparent with PJM’s issuance of a Hot Weather Alert for the entire PJM RTO for July 4th and 5th, 2012. Temperatures are expected to approach 100 degrees in Illinois. Midwest Generation notes that over one hundred thousand people lost service in Chicago and over a million are still without power throughout PJM due to recent storms. As reconnections proceed over the next few days, a significant increase in demand is expected.

Relief Requested

Midwest Generation seeks a provisional variance from the thermal limits at the I-55 Bridge, contained in Joliet Station 9 NPDES Permit IL0002216; Joliet Station 29 NPDES Permit No. IL0064254; and Will County Station NPDES Permit No. IL0002208, beginning on July 4, 2012, and continuing through July 13, 2012. More specifically, Midwest Generation has requested an increase in the maximum thermal adjusted standard from 93° F to 96° F, as well as a suspension of the counting of excursion hours for periods when the I-55 Bridge temperature exceeds 91° F.

Special Condition 5 in Joliet Station 9 and Joliet Station 29 NPDES permits, and Special Condition 6, in Will County's NPDES permit provide in pertinent part:

[E]ffluent shall not alone or in combination with other sources cause temperatures in the main channel of the Lower Des Plaines River at the I-55 Bridge to exceed the temperatures set forth in the following table, except in accordance with allowable monthly excursions detailed below:

...	July	...	Aug.	...	Sept	...
	91		91		90	

These standards may be exceeded by no more than 3° F during 2% of the hours in the 12-month period ending December 31, *except that at no time shall Midwest Generation's plants cause the water temperature at the I-55 Bridge to exceed 93° F* (emphasis added).

According to the provisional variance request, the water temperature will not exceed 96° F at the I-55 Bridge.

Special Condition 6 in Joliet Station 9 and Joliet Station 29 NPDES permits, and Special Condition 7, in Will County's NPDES permit provide:

Permittee shall comply with all temperature limitations as imposed by the Pollution Control Board's order in AS 96-10, dated October 3, 1996.

Necessity for Request

During this time of extremely hot air temperatures of up to 100° F each day, with little overnight relief, coupled with prolonged drought conditions in Northern Illinois, the alternate I-55 thermal water quality standards currently in effect cannot consistently be met, even with the current measures already taken by Midwest Generation to maintain compliance, including derating of Joliet Unit 6 down to minimum load during periods of low river flows and increased intake temperatures. Intake temperatures are expected to keep increasing given the prolonged low flows in the entire waterway system and continued high air temperatures. On July 3, 2012, the intake temperature at Will County

Station had already exceeded 86 ° F on several occasions, while intake temperatures at Joliet Unit 6 have gone over 90° F for hours at a time. With air temperatures predicted to stay in a dangerously high range through Saturday, July 7, and possibly longer, the demand for electricity to support human health and safety needs will increase, along with the physical constraints and limitations on power production and distribution brought about by these same extremely hot, dry conditions.

Midwest Generation says that without the relief requested, the Joliet units, and possibly the Will County units, are in jeopardy of needing to shut down completely in order to attempt to meet the 93° F maximum I-55 thermal limit, which may not even be possible due to the current adverse ambient waterway and weather conditions. Midwest Generation reports that this would result in the following operational problems and potential safety risks involved, as detailed below:

Safety – Midwest Generation states that during a river thermal event, unit load is reduced quickly to maintain I-55 temperature compliance. In certain cases, a unit may have to be cycled off. Because of the short notification required prior to shutdown, coal handling systems cannot be completely purged out. This is a hazard because of the volatile nature of Powder River Basin coal to spontaneously combust and act as an ignition source. Because coal bunkers, reclaim feeders and coal preparation equipment cannot be completely purged out when a short notice shut down is required, there is increased risk of an explosion or fire upon restart of the non-purged equipment. A crusher house explosion and fire that occurred at Joliet Station in April 2012 followed a period when Joliet Station was shutdown in late March for river temperature compliance, without the necessary time to purge out the coal handling and transport system. This required emergency response of fire service personnel from at least five jurisdictions. Events such as these put power plant workers and the fire service employees at risk of injury and or loss of life. The current high ambient outside temperature and humidity accelerates the spontaneous combustion phenomenon.

Effects of unit cycling – According to Midwest Generation, any time a steam unit is either started or shut down, a thermal cycle is incurred which results in thermal stresses through thick walled components such as boiler headers, boiler tubes, turbine casings and rotors. Cycling results in decreased equipment reliability and increased costs for equipment repair and maintenance due to the generation of incipient cracks in these components. This condition is not unique to Midwest Generation, but recognized throughout the industry as a widespread consequence of excessive steam unit cycling. In addition to thermal cycles, mechanical cycles on such equipment as circuit breakers, valves, actuators and other high use equipment will result in accelerated wear, unreliability and excessive maintenance costs.

The low pressure steam turbines at Joliet's Units 7&8 are designed to require especially high vacuum to allow them to re-start after shutdown. River temperatures much above 85° F do not provide the cooling required to achieve optimal vacuum conditions. Unit start-up under these conditions places excessive stress on turbine blades and risks serious

damage to these turbines. Higher river temperatures may prevent restart altogether, making units unavailable for system grid load demand and support.

Voltage control and regulation – Midwest Generation states that removing units from service will result in localized voltage and VAR control issues. Although this is the province of the Transmission Operator, these effects usually manifest themselves most severely on hot, high load demand days: days that most likely one would shut a unit down to maintain river thermal compliance. Impacts of low voltage would include shortened motor life and the possibility that some motor operated devices, such as air conditioners, will be unable to operate. More severe impacts could include localized power brown outs or blackouts due to insufficient voltage support on the transmission system.

Load regulation would also be impacted by the loss of a generating unit that typically would supply load regulation as the system loaded up. This would put additional burden on transmission lines and transmission equipment, and could cause transmission line overloading in peak conditions.

Alternatives to Requested Relief

Midwest Generation states that given the considerations detailed above, the only alternative method of compliance is to shutdown Joliet Stations 9 and 29 (Units 6, 7 and 8) and the Will County Units 3 and 4, as these are the only Midwest Generation stations which have a potential impact on I-55 Bridge water temperatures. (Midwest Generation notes that previous proceedings and thermal modeling has determined that any potential thermal impacts from the Fisk or Crawford Stations have dissipated prior to reaching Will County).

Environmental Impacts

Midwest Generation has provided details on the environmental impact during the requested variance period from July 4, 2012, through July 13, 2012. Midwest Generation has determined that there should not be any significant environmental impact during the course of this provisional variance.

Agency Determinations

The Agency has reviewed the requested provisional variance 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 will preclude the granting of this request; and
5. Midwest Generation will face an arbitrary and unreasonable hardship if the request is not granted.

Conditions

The Agency hereby GRANTS Midwest Generation's Will County and Joliet Stations 9 and 29 a provisional variance from the thermal limits indicated in Special Conditions 6 and 7 of the Will County NPDES Permit No. IL0002208, Special Conditions 5 and 6 of the Joliet Unit 6 (Station 9) NPDES Permit No. IL0002216, and Special Conditions 5 and 6 of Joliet Units 7 & 8 (Station 29) NPDES Permit No. 0064254, subject to the following conditions:

- A. The term of this provisional variance begins (1) for excursion hours: when all permitted excursion hours have been exhausted; (2) for maximum temperature limits: when the temperature exceeds 93° F. The term of this provisional variance shall begin on July 4, 2012 and end no later than July 13, 2012. This provisional variance is granted based on the facts and circumstances described in the request dated July 3, 2012. If the facts and circumstances described in the request dated July 3, 2012 abate the term of this provisional variance will end.
- B. Midwest Generation 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. At no time shall the water temperature in the main channel of the Lower Dew Plains River at the I-55 Bridge to exceed a temperature of 96° F during the term of this provisional variance.
- C. Midwest Generation must continuously monitor discharge and receiving water temperatures and visually inspect all discharge areas, including at the I-55 Bridge, 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 variance and shall continue for a minimum of four days after the provisional variance expires.
- D. Midwest Generation shall document environmental conditions during the term of the provisional variance, including the activities described in item C. of this Section, and submit the documentation to the Agency and the Illinois Department of Natural Resources ("Illinois DNR") within seven (7) days after this provisional variance expires.
- E. Midwest Generation shall immediately notify the Agency and Illinois DNR 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 Illinois DNR as changes occur until normal conditions return; notify the Agency and Illinois DNR when normal conditions return and submit the documentation to

the Agency and Illinois DNR within seven (7) days after normal conditions return.

- F. Midwest Generation 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, including loss and damage to aquatic life.
- G. Midwest Generation shall notify Roger Callaway, Illinois Environmental Protection Agency, by telephone at 217-782-9720 when the period of this provisional variance begins and ends. Written confirmation shall be sent within five days after the discharge specified in this provisional variance ends 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 IL 62794-9276

- H. Midwest Generation shall sign a certificate of acceptance of this provisional variance and forward that certificate to Roger Callaway at the address indicated above within one day of 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 granted by the Agency in _____ dated _____.

Petitioner

Authorized Agent

Title

Date

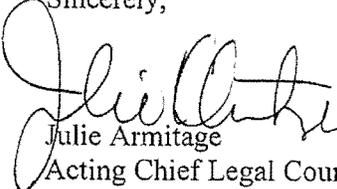
- I. Midwest Generation shall continue to monitor all parameters and comply with all other conditions specified in Joliet Station 9 NPDES Permit IL0002216; Joliet

Station 29 NPDES Permit No. IL0064254; and Will County Station NPDES
Permit No. IL0002208.

Conclusion

The Agency grants this provisional variance 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) (2010). The decision to grant this provisional variance is not intended to address compliance with any other applicable laws or regulations.

Sincerely,


Julie Armitage
Acting Chief Legal Counsel

cc: Marcia Willhite
Roger Callaway
Chad Kruse



July 3, 2012

Mr. Roger Callaway
Wastewater Compliance Unit Manager
Illinois Environmental Protection Agency
Bureau of Water
Compliance Assurance Section # 19
1021 North Grand Avenue East
Springfield, IL 62702

SUBJECT: Request for Thermal Provisional Variance for Midwest Generation's Will County
and Joliet Stations 9 and 29

Will County	NPDES Permit No. IL0002208
Joliet Station 9	NPDES Permit No. IL 0002216
Joliet Station 29	NPDES Permit No. IL 0064254

Dear Mr. Callaway:

Pursuant to Section 35(b) of the Illinois Environmental Protection Act, Midwest Generation (MWG) respectfully submits this application for a Provisional Variance for relief from the AS 96-10 adjusted thermal standards applicable at the I-55 Bridge in the Lower Des Plaines River that are incorporated into the NPDES permits for the MWG stations listed above. The relief requested is:

- to authorize an increase in the maximum thermal adjusted standard from 93° F to 96° F; and
- to suspend the counting of excursion hours for periods when the I-55 Bridge temperature exceeds 91° F

The following information is being supplied in support of the provisional variance application per the requirements of Title 35, Subtitle A, Chapter II, Part 180.202, and in accordance with the recently issued Illinois EPA Thermal Provisional Variance Fact Sheet dated May 17, 2012.

The AS 96-10 adjusted thermal standards are referenced in each of the subject facility's NPDES permits, as follows:

Will County—Special Conditions 6 and 7

Joliet Unit 6 (Station 9)—Special Conditions 5 and 6

Joliet Units 7&8 (Station 29)—Special Conditions 5 and 6

For the period from June 16 through August 31, The AS 96-10 adjusted standards limit water temperature at the I-55 Bridge is 91 ° F, with allowed excursions up to 93 ° F for no more than 2% of the hours in any 12 month period ending December 31st of each year.

The relief being requested is from the maximum 93 ° F I-55 temperature limitation, as well as allowed suspension of the counting of excursion hours for periods when the I-55 Bridge temperature is over 91 ° F. There are currently 123.25 excursion hours available for use through the end of 2012. Because the I-55 Bridge compliance monitoring location is approximately 7 miles away from the Joliet Stations discharge locations and the downstream temperatures are greatly impacted by changing river flow and weather conditions, it is not possible to accurately predict or control the number of far-field excursion hours used during these adverse weather and flow conditions.

Weather conditions in 2012 have continued on the trajectory set back in March, with early warming and lack of appreciable rainfall. The current weather pattern is greatly impacting the ability to maintain compliance with the existing thermal limitations which cover the MWG generating stations identified above. Because of the unusually hot weather, the river intake temperatures are climbing and the capacity of the waterway to dissipate heat has been greatly reduced. Higher dew points also have compromised the effectiveness of the helper cooling towers at Joliet Station 29. In addition, the weather is creating unusually high demand for electricity to support human health and safety needs, as well as the many businesses and households which rely on power through the PJM Interconnection.

During this time of extremely hot air temperatures of up to 100°F each day, with little overnight relief, coupled with prolonged drought conditions in Northern Illinois, the alternate I-55 thermal water quality standards currently in effect cannot consistently be met, even with the current measures already taken by MWG to maintain compliance, including derating of Joliet Unit 6 down to minimum load during periods of low river flows and increased intake temperatures. With prolonged low flows in the entire waterway system, along with the high ambient air temperatures and low wind speeds, intake temperatures are expected to keep increasing. At the writing of this request, the intake temperature at Will County Station has already exceeded 86 ° F on several occasions, while intake temperatures at Joliet Unit 6 have gone over 90 ° F for hours at a time. With air temperatures predicted to stay in a dangerously high range through Saturday, July 7 and possibly longer, the demand for electricity to support human health and safety needs will increase, along with the physical constraints and limitations on power production and distribution brought about by these same extremely hot, dry conditions. Due to these serious circumstances, Midwest Generation is hereby requesting a provisional variance up to the maximum temperature as described below from the adjusted thermal standards applicable at the I-55 Bridge as set forth in each of the above-listed respective Special Conditions of the NPDES Permits:

Requested Relief:

MWG is requesting a maximum I-55 limitation of 96 ° F for the time period necessary in which to continue to operate to provide needed power to the PJM Interconnection during the current heat wave. At present, considering all currently available weather and river flow information, a total of 10 days of provisional variance relief is requested, beginning July 4th and continuing through July 13th. Depending upon future weather and flow conditions, MWG may need to submit a request for an extension of this proposed variance duration to extend the maximum number of days if existing adverse conditions persist beyond this time period. Likewise, should more favorable weather and river conditions prevail, the requested number of variance days necessary would be decreased below the estimated 10 days.

MWG is also asking for a provisional variance to suspend the counting of excursion hours for periods when the I-55 Bridge temperature exceeds 91° F; and to suspend the use of any additional excursion hours for temperatures above 91° during the provisional variance period.

This projected maximum I-55 temperature was determined based on use of a thermal compliance model currently run to maintain compliance with the I-55 limits. Model inputs included both the actual and predicted hot weather conditions in the Chicago area, (including unseasonably high ambient daily and overnight air temperatures as well as high dew point values). The higher than normal intake temperatures for stations were also assumed to continue throughout the requested variance period. In addition, because of the inability to accurately predict river flows in the artificially controlled Chicago Sanitary and Ship Canal (“CSSC”) and Lower Des Plaines River, which fluctuates on an hourly basis by thousands of cubic feet per second, low flow estimates were used. While continuing to be utilized to the maximum extent possible, the Joliet Unit 7 & 8 cooling towers are not effective at dissipating heat under the high dew point values that coincide with the excessively hot daily air temperatures being experienced in the Chicago area at this time.

The requested 96 °F I-55 maximum temperature will allow MWG to continue to provide needed power to the grid, but may still continue to require some unit derates by MWG under these critical weather and flow conditions.

Description of The Stations:

Will County Station is located in Romeoville at River Mile 295.5 on the CSSC, and is a two-unit steam electric facility with an 897 megawatt production capacity and a design circulating water flow rate of approximately 864 MGD. The design temperature rise across the station is approximately 11.1° F. The Will County station is not equipped with cooling towers.

Joliet Station 9 (Unit 6) and Joliet Station 29 (Units 7&8) are located in Will County, Illinois, approximately one mile southwest of the City of Joliet, Illinois, which discharge wastewater, including cooling water, into the adjacent Lower Des Plaines River at locations approximately

seven miles north of the I-55 Bridge pursuant to the NPDES Permits described above. Joliet Station 9 is on the east bank of the river and Joliet Station 29 is on the west bank. Both of these thermal discharges flow into the lower Des Plaines River approximately one-half mile downstream of the Brandon Road Lock and Dam between River Miles 285 and 284. Both stations utilize open cycle, once-through condenser cooling systems.

Joliet Station 9 has a single generation unit, Unit 6. It is capable of producing 341 megawatts of electricity and has a design circulating water flow rate of approximately 376 MGD. The design maximum temperature rise in the circulating cooling water is approximately 10.7° F. Joliet Station 9 is not equipped with cooling towers.

Joliet Station 29 has two generation units, Units 7 and 8. Units 7 and 8 are capable of producing approximately 1100 megawatts, with a design circulating water flow rate of approximately 1325 MGD. The design maximum temperature rise in the circulating cooling water is approximately 12.4° F. The Joliet Station 29 is equipped with cooling towers, referred to as "helper cooling towers" because they are not designed for long-term, continuous runs. They are capable of cooling approximately one-third of Units 7 and 8's total design discharge during typical summer conditions.

All of these facilities are operated on a daily load cycle which matches electrical demand needs and provide power into the PJM Interconnection, a regional transmission organization that coordinates the movement of wholesale electricity in Northern Illinois, and all or parts of 13 states and the District of Columbia. The PJM region has an area of 214,000 square miles, and a population of about 60 million.

Due to the widespread heat and drought conditions throughout the Midwest, there are many power producers which supply the PJM system that either are currently impacted or will be, given the long-range forecast for extended high air temperatures. As facility operations succumb to heat-related equipment failures and continued compliance challenges which limit their ability to provide needed power to the grid, the necessity for regulatory relief in the form of a provisional variance will become increasingly critical. This is already apparent with PJM's issuance of a Hot Weather Alert for the entire PJM RTO for July 4th and 5th, 2012. (see attached chart). Temperatures are expected to approach 100 degrees in Illinois. Over one hundred thousand people lost service in Chicago and over a million are still without power throughout PJM due to recent storms. (see attached articles). As reconnections proceed over the next few days, a significant increase in demand is to be expected.

Description of the Discharges and the Receiving Waters:

MWG's generating stations are comprised of all coal-fired units, and each utilizes an open cycle, once-through condenser cooling system. The MWG Stations are steam-electric generating process units that require the use of large volumes of surface water for cooling purposes.

The quantity of cooling water utilized by each station is described above. The receiving water for Will County Station is the CSSC. The receiving waterway for both Joliet Stations is the Lower Des Plaines River.

The CSSC is an entirely man-made, artificially controlled waterway, which is managed to facilitate commercial navigational needs, as well as to effect flood control for the greater Chicago area. The canal system flow is regulated by a series of locks and dams controlled by the U.S. Army Corps of Engineers, working cooperatively with the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). Water flow in the system is subject to significant and frequent fluctuations in both level and magnitude, and primarily consists of treated POTW effluent. The published 7Q10 of the CSSC near Will County Station is 1315 cfs. During dry weather conditions, the CSSC consists almost entirely of the MWRDGC Stickney Treatment Plant discharge, as well as the Cal-Sag Channel contribution (which is primary the effluent from the MWRDGC Calumet Treatment Plant).

The Lower Des Plaines River, while being a natural waterway, has been considerably altered and channelized to accommodate commercial navigations needs. It is subject to the same types of frequent and erratic flow fluctuations as described above for the CSSC. Its flow is regulated by the Corps of Engineers Brandon Road Lock and Dam, which is located 0.5 River Miles above the two MWG Joliet Stations.

The published 7Q10 of this waterway at Brandon Road is 1493 cfs. Daily and hourly river flow rates have been far lower than the published 7Q10 over the past several weeks, due to the prolonged drought conditions in the area.

Both the CSSC and Lower Des Plaines River are currently designated as Secondary Use water quality standards. All of these waterways are currently subject to Illinois' Secondary Use water quality standards, and are also included on the state's current 305(b)/303(d) list as impaired, but none of them are listed for temperature impairment.. Details for each facility are included below:

Will County Station:

The stream segment GI-02 receiving the discharge from outfall(s) 001, 002, and 003 is on the draft 2010 Illinois Integrated Water Quality Report and Section 303(d) List. The receiving water has not been given an integrity rating or been listed as biologically significant in the 2008 Illinois Department of Natural Resources publication "Integrating Multiple Taxa in a Biological Stream Rating System". The impaired designated uses and pollutants causing impairment are tabulated below:

Designated Uses

Pollutants Causing Impairment

Fish Consumption

Polychlorinated biphenyls (PCB's)

Aquatic Life Iron, Oil and Grease, Dissolved Oxygen (non-pollutant), and Phosphorus

Joliet Station 9 (Unit 6) and Joliet Station 29 (Units 7&8):

Stream segment G-12 receiving the discharge from Joliet Station 9 outfalls 001, 002, 003,004, 005, 006 and 007, as well as Joliet Station 29 outfalls 001, 002, 003 and 004 and is listed on the draft 2010 Illinois Integrated Water Quality Report and Section 303(d) list. The following parameters have been identified as the pollutants causing impairment:

<u>Designated Uses</u>	<u>Pollutants Causing Impairment</u>
Fish Consumption	Mercury and Polychlorinated biphenyls (PCB's)

No Effect on Public Water Supply:

No discharge to drinking water sources from the discharges conducted under this provisional variance application is expected. The receiving water, the Lower Des Plaines River, is classified as Secondary Contact in the portion downstream of the discharges to the I-55 Bridge and the portion below the I-55 Bridge is classified as General Use. There are no public water supply intakes located in the vicinity of the discharges or in the area of the I-55 Bridge that will be impacted by this provisional variance request. In any event, the temporary, elevated temperature of the receiving water would not render it harmful for use as a drinking water source.

Assessment of Environmental Impacts:

As the subject discharges consist of non-contact cooling water, the temperature of the non-contact cooling water discharged to the CSSC by Will County and to the Lower Des Plaines River by the Joliet Stations is expected to have either no or minimal adverse impact to the environment as a result of the activities proposed under this provisional variance application. Temperatures in the entire waterway are somewhat warmer than normal for this time of year as the result of both the mild winter and the warm spring weather. As such, the aquatic life present in these waterways has had time to adapt to the prevailing conditions. Short term increases in temperature at the I-55 Bridge beyond the current 93 ° F maximum should not have any long-term adverse impacts on the indigenous fish community, which is made up of primarily tolerant species. In addition, the fish in the vicinity of the I-55 Bridge have the ability to avoid water temperatures that are outside of their preferred range by moving to locations further downstream of the I-55 Bridge or to sheltered backwater areas, where the temperatures are at or below the General Use thermal water quality standards.

For the period from June 16 through August 31, the applicable section 302.211(e) General Use thermal water quality standard below the I-55 Bridge is 90° F and the I-55 adjusted thermal

standard in the MWG Will County and Joliet Stations NPDES Permits allows for a maximum of 91° F degrees. The adjusted thermal standard in the subject NPDES Permits also allows for exceedances of no more than 3° F during 2% of the hours in the 12-month period ending December 31, except at no time shall MWG's generating stations cause the water temperature at the I-55 Bridge to exceed 93° F. The expected exceedance of the adjusted thermal standard caused or contributed by the subject thermal discharges at the I-55 Bridge will not exceed 96 ° F. This increase in the maximum thermal standard is only 3 ° F above the AS96-10 adjusted standard maximum of 93 ° F (which is identical to the General Use maximum numeric temperature limit for this time period)

The requested relief is not expected to cause mortality or any long-term negative impacts to the aquatic community. While the short-term water temperature limit requested is somewhat warmer than normal for this portion of the Lower Des Plaines River, the fish in the vicinity of the I-55 Bridge have the ability to avoid water temperatures that are outside of their preferred range by moving to locations further downstream of the I-55 Bridge, where the temperatures are at or below the General Use thermal water quality standards, or to sheltered backwater areas. The MWG generating stations subject to this Provisional Variance request will remain in compliance with the near-field Secondary Contact thermal standards, hence, will not be negatively impacting the aquatic life in the waterways immediately adjacent to their discharges. Further, prior thermal studies conducted on the station discharges have shown that the thermal plumes from these stations allow a zone of passage and do not extend from the surface to the bottom of the river, thereby providing additional refugia for the indigenous aquatic community.

MWG will continue its continuous monitoring of temperature at the I-55 Bridge and will provide the Agency with the results during our follow-up reports and monthly DMRs. MWG will also continue its routine long-term fisheries monitoring program in the vicinity of the Will County and Joliet Stations throughout the variance term, as well as the rest of the summer period. Crews are out on the receiving waters twice per month from May through September. Data from this comprehensive monitoring effort is normally included in the annual report submitted to the Agency, but will be made available for review shortly after the Provisional Variance period ends.

In addition, for several days through the course of the requested Provisional Variance period, MWG will have its biological consultants out in the field to specifically assess aquatic life conditions in the vicinity of the I-55 Bridge and provide documentation in the unlikely event of any adverse impacts. This information will be provided to the Agency in the required follow-up reports. Should any adverse thermal impacts associated with the water temperature limit requested by this Provisional Variance be observed, MWG will immediately take whatever minimization/mitigation actions are required to address these impacts.

Avoidance of Arbitrary and Unreasonable Hardship:

Approval of this Provisional Variance Application will allow MWG to continue to operate the Will County and Joliet Stations during the Provisional Variance period until weather and river flow conditions improve to the point where the stations can be operated without exceeding the applicable AS 96-10 alternate thermal standards at the I-55 Bridge. As described below, there are no alternate methods of compliance. Without the relief requested by this Provisional Variance, the Joliet units, and possibly the Will County units, are in jeopardy of needing to shut down completely in order to attempt to meet the 93 ° F maximum I-55 thermal limit, which may not even be possible due to the current adverse ambient waterway and weather conditions. This would result in an undue hardship on MWG because of the operational problems and potential safety risks involved, as detailed below:

Safety – During a river thermal event, unit load is reduced quickly to maintain I-55 temperature compliance. In certain cases, a unit may have to be cycled off. Because of the short notification required prior to shutdown, coal handling systems cannot be completely purged out. This is a hazard because of the volatile nature of Powder River Basin coal to spontaneously combust and act as an ignition source. Because coal bunkers, reclaim feeders and coal preparation equipment cannot be completely purged out when a short notice shut down is required, there is increased risk of an explosion or fire upon restart of the non-purged equipment. A crusher house explosion and fire that occurred at Joliet Station in April of 2012 followed a period when Joliet Station was shutdown in late March for river temperature compliance, without the necessary time to purge out the coal handling and transport system. This required emergency response of fire service personnel from at least five jurisdictions. Events such as these put power plant workers and the fire service employees at risk of injury and or loss of life. The current high ambient outside temperature and humidity accelerates the spontaneous combustion phenomenon.

Effects of unit cycling- In general, any time a steam unit is either started or shut down, a thermal cycle is incurred which results in thermal stresses through thick walled components such as boiler headers, boiler tubes, turbine casings and rotors. Cycling results in decreased equipment reliability and increased costs for equipment repair and maintenance due to the generation of incipient cracks in these components. This condition is not unique to MWG, but recognized throughout the industry as a widespread consequence of excessive steam unit cycling. In addition to thermal cycles, mechanical cycles on such equipment as circuit breakers, valves, actuators and other high use equipment will result in accelerated wear, unreliability and excessive maintenance costs.

The low pressure steam turbines at Joliet's Units 7&8 are of a design such that they require especially high vacuum to allow them to re-start after shutdown. River temperatures much above 85 °F do not provide the cooling required to achieve optimal vacuum conditions. Unit start-up under these conditions places excessive stress on our turbine blades and risks serious damage to these turbines. Higher river temperatures may prevent restart altogether, making units

unavailable for system grid load demand and support. If the units are allowed to remain in service, this risk is avoided.

Voltage control and regulation - Removing units from service will result in localized voltage and VAR control issues. Although this is the province of the Transmission Operator, these effects usually manifest themselves most severely on hot, high load demand days: days that most likely one would shut a unit down to maintain river thermal compliance. Impacts of low voltage would include shortened motor life and the possibility that some motor operated devices, such as air conditioners, will be unable to operate. More severe impacts could include localized power brown outs or blackouts due to insufficient voltage support on the transmission system.

Load regulation would also be impacted by the loss of a generating unit that typically would supply load regulation as the system loaded up. This would put additional burden on transmission lines and transmission equipment, and could cause transmission line overloading in peak conditions.

Post-Provisional Variance Compliance:

As ambient water temperatures began to increase, the helper cooling towers were put into service at Joliet Units 7 and 8 as a preventive measure on June 8th. They have been run consistently since that time, although they have been plagued with fouling problems due to the proliferation of aquatic vegetation in the waterway (which normally occurs much later in the summer period—another indication that this year's warmer weather pattern is very much accelerated). With the magnitude and duration of the high air temperature and critically low waterway flow conditions, the I-55 temperatures continue to increase, something which would occur even without any input from MWG's stations.

Returning to compliance with the existing AS96-10 alternate thermal limits at I-55 will be possible as soon as the extremely hot weather and concurrent drought conditions moderate to more normal summertime levels and ambient conditions that allow MWG to achieve compliance or the Provisional Variance expires, whichever occurs sooner.

Lack of Alternative Methods of Compliance:

As described above, the only alternative method of compliance is to shutdown Joliet Stations 9 and 29 (Units 6, 7 and 8) and the Will County Units 3 and 4, as these are the only MWG stations which have a potential impact on I-55 Bridge water temperatures. (In previous proceedings, thermal modeling has determined that any potential thermal impacts from the Fisk or Crawford Stations have dissipated prior to reaching Will County). During this time of prolonged hot and humid weather conditions, when air conditioning is likely necessary, especially for more fragile individuals, such as young children and the elderly, an inability to generate this power during this period could have significant negative ramifications, as detailed above .

Removing units from service will result in localized voltage and VAR control issues. Although this is the province of the Transmission Operator these effects usually manifest themselves most severely on hot, high load demand days; days that most likely one would shut a unit down to maintain river thermal compliance. Impacts on the public of low voltage would include shortened motor life and the possibility that some motor operated devices, such as air conditioners, will be unable to operate. More severe impacts could include localized power brown outs or blackouts due to insufficient voltage support on the transmission system.

Load regulation would also be impacted by the loss of a generating unit that typically would supply load regulation as the system loaded up. This would put additional burden on transmission lines and transmission equipment and could cause transmission line overloading in peak conditions.

No Prior 2012 Provisional Variance Requests:

The MWG stations which are the subject of this request have not been granted any provisional variances within the calendar year.

Will County Station has an NPDES permit reissued with an effective date of June 1, 2005 and an expiration date of May 31, 2010, which is still effective based on the timely submission of an NPDES permit renewal application. Joliet 29 Station has an NPDES permit reissued with an effective date of December 1, 1995 and an expiration date of November 30, 2000, which is still effective based on the timely submission of an NPDES permit renewal application. Joliet 9 Station has a NPDES permit reissued with an effective date of April 1, 1996 and an expiration date of March 31, 2001, which is still effective based on the timely submission of an NPDES permit renewal application. There have been no exceedances of the AS 96-10 alternate thermal standards which have not been covered by a prior provisional variance for the subject stations. There has been only one prior Provisional Variance granted to MWG for the AS 96-10 alternate thermal standards in the entire time period during which they have been in effect (i.e. since October, 1996). In July, 2011, the Provisional Variance period lasted for less than 4 days and there were no exceedances of the maximum requested limit of 96° F.

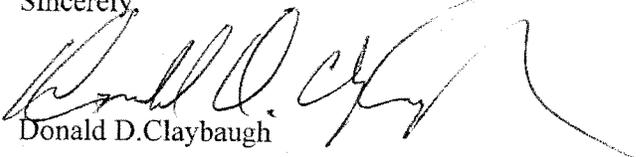
Other Board Orders and Pending Matters:

The adjusted thermal standard was granted by the Board in AS96-10 by Opinion and Order dated October 3, 1996 and as amended (to transfer the adjusted thermal standard to Midwest Generation from Commonwealth Edison) by Opinion and Order dated March 16, 2000. There are no other Board orders in effect regarding MWG's activities related to the subject discharges from the Joliet and Will County Stations. No other provisional variances or Board orders are in effect for any other parameters discharged by the Joliet and Will County Stations. There also are no pending enforcement actions for any matters involving the discharges from these stations

waters, including any alleged NPDES permit violations. While there are other matters pending in which MWG is a party, none are related to the subject matter of this application.

Midwest Generation appreciates the timeliness of the Illinois EPA's review and response to this Provisional Variance request. If you have any questions or require any additional information, please contact Julia Wozniak of my staff at 630 771-7880 (office) / 312 925-3184 (cell)

Sincerely,



Donald D. Claybaugh
Managing Director, Coal Generation
Midwest Generation EME, LLC

PJM ALERTS:

Msg. ID	Msg. Type	Posting Timestamp	Region/Area	Emergency Message	Cancellation Timestamp
76999	<u>Hot Weather Alert</u>	07/03/2012 09:32	PJM - RTO	As of 09:20 hours, a Hot Weather Alert has been issued for 07/05/2012	
76998	<u>Hot Weather Alert</u>	07/03/2012 09:31	PJM - RTO	As of 09:20 hours, a Hot Weather Alert has been issued for 07/04/2012	
76957	<u>Hot Weather Alert</u>	07/01/2012 10:21	PJM - RTO	As of 10:20 hours, a Hot Weather Alert has been issued for 7/3/12	
76956	<u>Hot Weather Alert</u>	07/01/2012 10:20	PJM - RTO	As of 10:20 hours, a Hot Weather Alert has been issued for 7/2/2012	07/02/2012 21:18

Heat Advisory

URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE CHICAGO IL
1055 AM CDT TUE JUL 3 2012

ILZ003>006-008-010>013-019>023-032-033-039-INZ001-002-010-011-019-
040000-
/O.CON.KLOT.HT.Y.0003.120703T1600Z-120705T0200Z/
WINNEBAGO-BOONE-MCHENRY-LAKE IL-OGLE-LEE-DE KALB-KANE-DUPAGE-
LA SALLE-KENDALL-GRUNDY-WILL-KANKAKEE-LIVINGSTON-IROQUOIS-FORD-
LAKE IN-PORTER-NEWTON-JASPER-BENTON-
INCLUDING THE CITIES OF...ROCKFORD...BELVIDERE...WOODSTOCK...
WAUKEGAN...OREGON...DIXON...DEKALB...AURORA...WHEATON...OTTAWA...
OSWEGO...MORRIS...JOLIET...KANKAKEE...PONTIAC...WATSEKA...
PAXTON...GARY...VALPARAISO...MOROCCO...RENSSELAER...FOWLER
1055 AM CDT TUE JUL 3 2012 /1155 AM EDT TUE JUL 3 2012/

...HEAT ADVISORY REMAINS IN EFFECT UNTIL 9 PM CDT /10 PM EDT/
WEDNESDAY...

* TEMPERATURE...HIGH TEMPERATURES TODAY WILL CLIMB INTO THE
UPPER 90S TO AROUND 100 DEGREES...WITH HIGHS 100 TO 104 ON
WEDNESDAY.

* HEAT INDICES...PEAK HEAT INDEX READINGS TODAY AND ON WEDNESDAY
WILL BE BETWEEN 100 AND 107 DEGREES.

* OTHER...IF CURRENT FORECASTS HOLD THEN ADDITIONAL HEAT
ADVISORIES AND WARNINGS WILL LIKELY BE ISSUED FOR THURSDAY
INTO FRIDAY.

Hazardous Weather Outlook

HAZARDOUS WEATHER OUTLOOK
NATIONAL WEATHER SERVICE CHICAGO/ROMEORVILLE IL
1108 AM CDT TUE JUL 3 2012

ILZ003>006-008-010>014-019>023-032-033-039-INZ001-002-010-011-019-041615-

WINNEBAGO-BOONE-MCHENRY-LAKE ILLINOIS-OGLE-LEE-DE KALB-KANE-DUPAGE-COOK-LA SALLE-KENDALL-GRUNDY-WILL-KANKAKEE-LIVINGSTON-IROQUOIS-FORD-LAKE INDIANA-PORTER-NEWTON-JASPER-BENTON-1108 AM CDT TUE JUL 3 2012 /1208 PM EDT TUE JUL 3 2012/

THIS HAZARDOUS WEATHER OUTLOOK IS FOR NORTH CENTRAL ILLINOIS...NORTHEAST ILLINOIS AND NORTHWEST INDIANA.

.DAY ONE...THIS AFTERNOON AND TONIGHT.

WEATHER HAZARDS EXPECTED:

DANGEROUS HEAT.

SLIGHT CHANCE OF THUNDERSTORMS CAPABLE OF PRODUCING:

DAMAGING WINDS OVER 70 MPH.

HAIL TO THE SIZE OF GOLF BALLS.

HEAVY RAIN.

AND FREQUENT LIGHTNING.

AREAS AFFECTED AND TIMING:

THUNDERSTORMS ARE POSSIBLE LATE THIS AFTERNOON INTO TONIGHT...MAINLY IN THE IMMEDIATE CHICAGO METROPOLITAN AREA AND NORTHWEST INDIANA.

DISCUSSION:

THUNDERSTORMS WHICH DISSIPATED OVER WISCONSIN THIS MORNING MAY HELP TO REINFORCE A WEAK FRONT STALLED OUT TO OUR NORTH AND RESULT IN SCATTERED THUNDERSTORMS DEVELOPING ALONG IT LATE THIS AFTERNOON AND EVENING. IN ADDITION...OUTFLOW FROM THOSE STORMS HAS PUSHED INTO NORTHERN ILLINOIS AND MAY ALSO BECOME THE FOCUS FOR ISOLATED THUNDERSTORM DEVELOPMENT LATER THIS AFTERNOON. WHILE THE BETTER LARGE SCALE FORCING FOR THUNDERSTORM DEVELOPMENT WILL REMAIN NORTH OF THE AREA THIS AFTERNOON...CONDITIONS ARE FAVORABLE FOR ANY ISOLATED STORMS THAT DO DEVELOP OR MOVE INTO THE OUTLOOK AREA TO BE SEVERE WITH LARGE HAIL AND DAMAGING WINDS.

OTHERWISE...VERY HOT AND RATHER HUMID CONDITIONS WILL LEAD TO HEAT INDICES OF 100 TO 105 THIS AFTERNOON.

.DAYS TWO THROUGH SEVEN...WEDNESDAY THROUGH MONDAY.

AN EXTENDED HEAT WAVE WILL CONTINUE THROUGH FRIDAY WITH HIGHS NEAR OR ABOVE 100 AND HEAT INDICES PEAKING WELL OVER 100 DEGREES EACH DAY. BY FRIDAY...HEAT INDICES COULD CLIMB OVER 110 DEGREES.

THERE IS A CHANCE OF THUNDERSTORMS LATE WEDNESDAY AFTERNOON AND EVENING OVER NORTHEAST ILLINOIS AND NORTHWEST INDIANA. IF STORMS DO INDEED FORM...THEN THEY COULD BE SEVERE WITH LARGE HAIL AND

DAMAGING WINDS. THERE MAY BE A ROUND OR TWO OF THUNDERSTORMS
AGAIN BY FRIDAY NIGHT AND INTO NEXT WEEKEND...THOUGH MOST OF THE
WEEKEND LOOKS DRY AT THIS POINT.

Staff report

11:48 a.m. CDT, July 3, 2012

Repair crews have restored power for about 300,000 Commonwealth Edison customers, but the utility is still working to get the lights back on for about 40,000 customers in the Chicago area. Most customers should have service restored by Wednesday, according to ComEd spokesman Tony Hernandez.

Hernandez said a smattering of customers will experience longer outages, particularly in cases where debris from trees and bushes must be removed before ComEd equipment can be repaired. He said that it may take until Thursday before things fully return to normal.

About 1,400 local technicians and 600 workers from neighboring states, including Michigan, Iowa and Wisconsin, are being deployed in the region today, Hernandez said. Crews have restored power to more than 300,000 customers since Sunday's storm.

Virtually all of the 40,000 customers still missing power as of about 11:30 a.m. are in the west suburbs, with under 100 customers affected outside that region, ComEd said.

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Tue Jul 3, 2012 5:55pm IST

- * Storms left more than 3 million without power
- * Heat wave still blanketing much of U.S. East
- * At least 15 dead after violent storms

By Scott DiSavino

July 3 (Reuters) - More than 1.4 million people from Illinois to Virginia remained without power Tuesday morning after the weekend's violent storms, and a heat wave continued to bake much of the region, the regional power companies said.