IEPA EXHIBIT
No. 6

Illinois Power Holdings, LLC
604 Pierce Blvd.
O'Fallon, IL 62269

RECEIVED
DEC 03 2013
IEPA
BOW/WPC/PERMIT SECTION

Via E-mail with Original by Overnight Delivery

November 29, 2013

Mr. Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control
Illinois Environmental Protection Agency
1021 N. Grand Ave. East
Springfield, IL 62794-9276

Re: Supplemental Notice; Planned Transaction/Automatic Transfer of NPDES and Water Pollution Control Permits, and Request for Associated Permitee Name Changes for:

- **Coffeen Power Station (Coffeen, IL)**
- **Duck Creek Power Plant (Canton, IL)**
- **E.D. Edwards Power Plant (Bartonville, IL)**
- **Newton Power Station (Newton, IL)**
- **Joppa Generating Station (Joppa, IL)**
- **Met-South Inc. (Joppa, IL)**

Dear Mr. Keller:

As indicated in our November 1, 2013 submission to you regarding the above-referenced planned transaction, Illinois Power Holdings, LLC (IPH) hereby provides supplemental notice that the planned transaction affecting the identified facilities is currently anticipated to close (i.e., take effect) on December 2, 2013. We will notify you upon actual closing of the transaction.

Please feel free to contact me (telephone no. 618-206-5912) if you have questions regarding this supplemental notice.

Sincerely,

Rick Diericx

Rick Diericx
Sr. Director – Environmental Compliance
Dynegy Operating Company, as Agent for IPH, LLC

Industrial NPDES Permit Review Notes

IEPA EXHIBIT No. 7

I. **Permittee:** Illinois Power Holdings, LLC **Permit No.** IL0000108
Facility Name: Coffeen Power Station
City: Coffeen **County:** Montgomery
Facility Contact: Rick Diericx **Phone No.** 618/206-5912
Major ☐ **Minor** ☑ **New** ☐ **Reissued** ☑ **Modified** ☐
SIC Code: 4911 **SIC Category:** Electric Services

Brief description of manufacturing operations and discharge sources: The applicant operates an existing 950 MW coal fired steam electric generating station. Cooling and service water for the power station is provided by Coffeen Lake which occupies 1100 acres. Once through cooling systems are used to cool the main condensers of each unit and condenser cooling water is discharged from the units to Coffeen Lake for dissipation of waste heat via flume. Service water is used for make up to the recycle pond (approximately 23 acres) and to the water treatment plant. A municipal water supply is utilized for sanitary use and make up to the water treatment plant.

II. **Name of Receiving Stream:** Coffeen Lake (segment ROG)
Use Classification: **General Use** ☑ **Secondary Contact** ☐ **Other (specify)**
7Q10: 0 cfs **Source of data:** Standards Unit
Notifications Needed: **Bordering State** ☐ **ORSANCO** ☐
CMAP ☐ **SWIMRPC** ☐ **GERPDC** ☐
The Conservation Foundation of DuPage County ☐ **Saline County Conservation District** ☐

III. **Federal Categorical Standards Apply:** Yes ☑ No ☐
40 CFR 423 Steam Electric Power Generating

Federal production-based categorical standards: **Yes** ☐ **No** ☑

IV. **Stormwater Classification:** **Not Covered** ☐ **Category:** vii
Form 2F received **Yes** ☑ **No** ☐

V. **Discharges**

001 Condenser Cooling Water (DAF = 0.144 MGD)
A01 Boiler Draining Water (Intermittent Discharge)
B01 Raw Water Treatment and Demineralizer Regenerant Wastes (DAF = 0.39 MGD)
C01 Unit 1 Floor Drains/Sumps and Stormwater (Intermittent Discharge)
D01 Sewage Treatment Plant Discharge (DAF 0.0085 MGD)
E01 Unit 2 Floor Drains/Sumps and Stormwater (Intermittent Discharge)
G01 Equalization Tank Bypass Line Discharge (Intermittent Discharge)
H01 Stormwater from Southwest Corner of Closed Ash Pond (Intermittent Discharge)
I01 Stormwater from Southeast Corner of Closed Ash Pond (Intermittent Discharge)
J01 Chemical Metal Cleaning Wastes (Intermittent Discharge)
002 Coal Yard Settling Pond Discharge (DAF = 0.6 MGD)
A02 Coal Pile Runoff (Intermittent Discharge)
003 Intake Screen Backwash (Intermittent Discharge)
008, 009, 010, 011, 012, 013, 014, 015, 016 Storm Water Runoff from Rail Spur (Intermittent Discharge)
018 Storm Water Runoff Associated with Ash Landfill (Intermittent Discharge)
020 Condenser Cooling Water Diversion Channel Overflow (DAF = 527.69 MGD)
021 Condenser Cooling Water Supplemental Cooling Pond Overflow (DAF = 37.97 MGD)
022 Condenser Cooling Water Supplemental Cooling Tower Discharge (DAF = 85.35 MGD)

Source of flow data: Previous Permit
If change from pervious permit describe reason:

1. Received thermal relief comments from US. EPA dated October 13, 2011
2. Received Lower Trophic Level Impacts from ASA Analysis and Communication, Inc. Dated July 1, 2014
3. 7/13/2014 and 12/10/2014 discuss about the thermal issue
4. Received the thermal limits memo dated 1/7/2015 from Brian Koch

IEPA Permit Reviewer Shu-Mei Tsai Date: Monday, April 14, 2014

VI. Water Quality Based Effluent Limit analysis: Yes ☑ No ☐
Date requested from Standards Unit: **Date received:** October 30, 2012
Biomonitoring data available: Yes ☐ No ☑
Attachments (as needed): ☑ **Flow diagram of waste sources, treatment processes**
☐ **DMR Summary**

IEPA Permit Reviewer Shu-Mei Tsai Date: Monday, April 14, 2014

Permit Limits Derivation – Outfalls 001, 020, 021, and 022

Parameter – conc. mass	**Current Limits Avg.**	**Current Limits Max.**	**Sec. 304 Limits Avg.**	**Sec. 304 Limits Max.**	**Fed. Limits* Avg.**	**Fed. Limits* Max.**	**WQBEL Avg.**	**WQBEL Max**	**Prop. Limits Avg.**	**Prop. Limits Max**	**Mon. Freq Sample Type**	**Notes or Comments**
Flow											Daily Cont. Recording	
pH (min. and max.)	6.0 – 9.0		6.0 – 9.0				6.5 – 9.0		6.5 – 9.0		2/Month Grab	35 IAC 302.204
Temperature											Daily Cont. Recording	IPCB 09-38
TRC		0.2				0.05				0.05	* Grab	35 IAC 302.208

TRC shall be sampled whenever chlorination or biocide addition is being performed or residuals are likely to be present in the discharge.

R 222

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall A01

Parameter – conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max	Prop. Limits Avg.	Prop. Limits Max	Mon. Freq Sample Type	Notes or Comments
Flow											Daily When Discharging	
TSS	15	30	15	30					15	30	Daily When Discharging Grab	40 CFR 423.12(b)(3)
Oil and Grease	15	20	15	30					15	20	Daily When Discharging Grab	40 CFR 423.12(b)(3)

R 223

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall B01

Parameter – conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max	Prop. Limits Avg.	Prop. Limits Max	Mon. Freq Sample Type	Notes or Comments
Flow											2/Month	
TSS	15	30	15	30					15	30	2/Month 8-Hr .Composite	40 CFR 423.12(b)(3)
Oil and Grease	15	20	15	30					15	20	2/Month Grab	40 CFR 423.12(b)(3)

R 224

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall C01

Parameter – conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max	Prop. Limits Avg.	Prop. Limits Max	Mon. Freq Sample Type	Notes or Comments
Flow											2/Month 24-Hr. Total	
TSS	15	30	15	30					15	30	2/Month 8-Hr .Composite	40 CFR 423.12(b)(3)
Oil and Grease	15	20	15	30					15	20	2/Month Grab	40 CFR 423.12(b)(3)

R 225

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall D01

Parameter – conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max	Prop. Limits Avg.	Prop. Limits Max	Mon. Freq Sample Type	Notes or Comments
Flow											2/Month	
pH											2/Month Grab	
TSS	30	60	10	12					10	12	2/Month 8-Hr .Composite	35 IAC 304.120(c)
BOD	30	60	12	24					12	24	2/Month Grab	35 IAC 304.120(c)
TRC		0.05				0.05				0.05	Daily when Chlorinating Grab	35 IAC 302.208
Fecal Coliform									400/100ml		2/Month Grab	35 IAC304.121

R 226

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall E01

Parameter – conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max	Prop. Limits Avg.	Prop. Limits Max	Mon. Freq Sample Type	Notes or Comments
Flow											2/Month 24-Hr. Total	
TSS	15	30	15	30					15	30	2/Month 8-Hr .Composite	40 CFR 423.12(b)(3)
Oil and Grease	15	20	15	30					15	20	2/Month Grab	40 CFR 423.12(b)(3)

R 227

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall G01

Parameter – conc. mass	**Current Limits Avg.**	**Max.**	**Sec. 304 Limits Avg.**	**Max.**	**Fed. Limits* Avg.**	**Max.**	**WQBEL Avg.**	**Max**	**Prop. Limits Avg.**	**Max**	**Mon. Freq Sample Type**	**Notes or Comments**
Flow											Daily When Discharging Estimate	
TSS	15	30	15	30					15	30	Daily When Discharging 8-Hr .Composite	40 CFR 423.12(b)(3)
Oil and Grease	15	20	15	30					15	20	Daily When Discharging Grab	40 CFR 423.12(b)(3)

R 228

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall J01

Parameter – conc. mass	Current Limits Avg.	Current Limits Max.	Sec. 304 Limits Avg.	Sec. 304 Limits Max.	Fed. Limits* Avg.	Fed. Limits* Max.	WQBEL Avg.	WQBEL Max	Prop. Limits Avg.	Prop. Limits Max	Mon. Freq Sample Type	Notes or Comments
Flow											Daily When Discharging	
pH			6.0 – 9.0						6.0 – 9.0		Daily When Discharging Grab	35 IAC 304.125
TSS			15	30	30	100			15	30	Daily When Discharging Grab	35 IAC 304.124
Oil and Grease			15	30	15	20			15	20	Daily When Discharging Grab	40 CFR 423.12(b)(5)
Iron	2	4	2	4	1.0	1.0			1.0	1.0	Daily When Discharging Grab	40 CFR 423.12(b)(5)
Copper	0.5	1.0	0.5	1.0	1.0	1.0			0.5	1.0	Daily When Discharging Grab	35 IAC 304.124

Wastes may alternatively be placed on the coal pile for incineration in the boilers provided a demonstration showing BAT equivalency is submitted.

R 229

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfall 002

Parameter – conc. mass	Current Limits Avg.	Max.	Sec. 304 Limits Avg.	Max.	Fed. Limits* Avg.	Max.	WQBEL Avg.	Max	Prop. Limits Avg.	Max	Mon. Freq Sample Type	Notes or Comments
Flow											1/Week	
pH	6.0 – 9.0		6.0 – 9.0		6.0 – 9.0		6.5 – 9.0		6.5 – 9.0		1/Week Grab	35 IAC 302.204
TSS	15	30	15	30					15	30	1/Week 24-Hr .Composite	40 CFR 423.12(b)(3)
Oil and Grease	15	20	15	30					15	20	1/Week 8-Hr .Composite	40 CFR 423.12(b)(3)
Iron	1	2	1	2					1	2	1/Month 8-Hr .Composite	35 IAC 304.124
Boron		1.8						1.8		1.8	1/Month 8-Hr .Composite	25 IAC 302.102

TDS limits were removed as the standard no longer exists. Manganese no longer has a reasonable potential to exceed WQ standards and the limits will be removed. A mixing zone is recognized for Boron. Compliance with the 1.8 mg/l limit will result in compliance with the 1.0/2.0 boron limits of 302.208 at the edge of the mixing zone. See October 30, 2012 WQBEL Memo.

R 230

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

Permit Limits Derivation – Outfalls F01, H01, I01, 008, 009, 010, 011, 012, 013, 014, 015, 016, and 018

Parameter – conc.	Current Limits		Sec. 304 Limits		Fed. Limits*		WQBEL		Prop. Limits		Mon. Freq	Notes or
mass	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max	Avg.	Max	Sample Type	Comments
SWPPP												40 CFR 122.26(b)(14)(vii

R 231

All units are mg/l (concentration) and lb./day (mass).
*Attach calculations if needed. Limit is based on categorical standards unless "BPJ" is noted in comments column, indicating technology-based limit was determined based on case-by-case BAT/BCT under 40 CFR 125.3

VIII. Discussion of parameters considered for regulation but not included in permit: N/A

Documents not cited above utilized in permit review: N/A

Other review comments: N/A

IX. Proposed Special Conditions

- ☑ Flow reporting
- ☑ pH limit/reporting
- ☑ Temperature limits
- ☑ Monitoring location
- ☑ DMR Submission
- ☑ Class K operator
- ☑ Water treatment additives
- ☑ BAT/BCT for Stormwater (002 Stormwater is treated and subject to effluent limits)
- ☑ SWPPP
- ☐ No Exposure
- ☑ Re-opener
- ☑ TRC

Additional Special Conditions

Metals Monitoring
316(b) Submittal
Incineration of Chemical Metal Cleaning Wastes
Mixing Zone for Boron from 002

X. Treatment Types
(Check all that apply)

Physical/Chemical Treatment

☐1A Ammonia Stripping
☐2A Carbon Absorption
☐2N Chemical Hydrolysis
☐2B Chemical Oxidation
☐2C Chemical Precipitation
☐2D Coagulation
☐2E Dechlorination
☐2F Disinfection (Chlorine)
☐2G Disinfection (Ozone)
☐4I Disinfection (Ultraviolet)
☐2H Disinfection (Other)
☐1D Distillation
☐2I Electrochemical Treatment
☐1E Electrodialysis
☐1F Evaporation
☐1G Flocculation
☐1I Foam Fractionation
☐1J Freezing
☐1K Gas Phase Separation
☐2J Ion Exchange
☐1O Mixing
☐2K Neutralization
☐2L Reduction
☐1W Solvent Extraction
☐1X Sorption

Sludge Management

☐5A Aerobic Digestion
☐5B Anaerobic Digestion
☐5C Belt Filtration
☐5D Centrifugation
☐5E Chemical Conditioning
☐5F Chlorine Treatment
☐5G Composting
☐5H Drying Beds
☐5I Elutriation
☐5J Flotation Thickening
☐5K Freezing (Sludge Treatment)
☐5L Gravity Thickening
☐5M Heat Drying
☐5N Heat Treatment
☐5O Incineration
☐5P Land Application (Sludge)
☐5Q Landfill
☐6E Lime Stabilization
☐5R Pressure Filtration
☐5S Pyrolysis
☐5T Sludge Lagoons
☐6K Thermophilic Digestion
☐5U Vacuum Filtration
☐5V Vibration
☐5W Wet Air Oxidation

Biological Treatment

☐3A Activated Sludge
☐3B Aerated Lagoons
☐3C Anaerobic Treatment
☐3K Biological Hydrolysis
☐8F Contact Stabilization
☐8G Extended Aeration
☐8D Lagoon(s)
☐3P 1 Cell Lagoon
☐3Q 2 Cell Lagoon
☐3R 3 Cell Lagoon
☐3S 4 Cell Lagoon
☐3D Nitrification – Denitrification.
☐8E Oxidation Pond or Ditch
☐3J Polishing Lagoons
☐6I Rock Filter
☐3I Rotating Biological Contractors
☐8B Secondary Treatment
☐3F Spray Irrigation/Land Application
☐3G Stabilization Ponds
☐8C Tertiary Treatment
☐3M Treatment by Plain Aeration
☐3H Trickling Filtration
☐6L Two Stage Activated Sludge
☐6M Vegetative Filter

Preliminary, Primary, Filtration, Other Treatment

☐1C Diatomaceous .Earth Filtration
☐1Y Equalization
☐6A Excess Flow Treatment
☐1H Flotation
☐4H Grease Removal
☐1L Grinding (Comminutors)
☐1M Grit Removal
☐3N Holding/Detention Pond
☐6B Imhoff Tank
☐1Z Intermittent Sand Filters
☐6C Irradiation/Beta Ray
☐6D Irradiation/Gamma Ray
☐1N Microstraining (Microscreening)
☐1P Moving Bed Filters
☐1Q Multimedia Filtration
☐2M Odor Control
☐6F Oil-Water Separator
☐6G Pasteurization
☐6H Phosphorus Removal
☐3L Post Aeration
☐3E Pre-Aeration
☐8A Primary Treatment
☐1R Rapid Sand Filtration
☐1S Reverse Osmosis
☐1T Screening
☑1U Sedimentation
☐1V Slow Sand Filtration
☑4F Temperature Control

Discharge Type

☐8H Constructed Wetland
☑4A Discharge to Surface Water
☐4B Ocean Discharge
☐4C Reuse/Recycle-Treated Effluent
☐4E Reuse/Sale of Wastewater
☐6J Subsurface Seepage
☐4D Underground Injection

Illinois Power Generating Company
1500 Eastport Plaza Drive
Collinsville, IL 62234

IEPA EXHIBIT SMT
No. 8

DYNEGY

June 30, 2014

Illinois Environmental Protection Agency
Bureau of Water
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue, East
Springfield, IL 62794-9276

RECEIVED
JUL 01 2014
IEPA
BOW/WPC/PERMIT SECTION

Attention: Mr. Darin LeCrone, P.E.
Manager, Industrial Unit

Re: Coffeen Power Station
NPDES Permit IL0000108
Special Condition No. 5

Mr. LeCrone,

Enclosed please find two copies of the report prepared by ASA Analysis and Communication, Inc. (Washingtonville, NY) regarding the thermal-related biological issues on Coffeen Lake and Special Condition No. 5 of the referenced NPDES permit. These were the issues discussed during the meeting at your office on May 15, 2014.

If you should have any questions regarding the enclosed reports, please contact me at 618-343-7761.

Sincerely,

Illinois Power Generating Company
by its agent the Dynegy Operating Company

Rick Diericx
Senior Director – Environmental Compliance

Enclosures

Lower Trophic Level Impacts of a Modified May and October Thermal Standard for Coffeen Lake

Prepared for

Illinois Power Generating Company

Coffeen Power Station

Prepared by

ASA Analysis and Communication, Inc.
5 Fairlawn Drive, Suite 205
Washingtonville, NY 10992

June 30, 2014

Background

On December 15, 2008 Ameren Energy Generating Company (Ameren), the then named owner/operator of Coffeen Power Station (Station),[1] filed a petition to the Illinois Pollution Control Board (IPCB) to modify the site-specific thermal standards for the Station for the months of May and October. Under the thermal standards for May and October existing at that time, thermal discharges from Coffeen Power Station could not result in water temperatures that exceeded:

- 89°F as a monthly average, and
- 94°F as a maximum for more than two percent of the hours during each of those months,

as measured at the boundary of a 26-acre mixing zone. The proposed revised standards for the months of May and October were as follows:

- 96°F as a monthly average, and
- 102°F as a maximum for more than two percent of the hours during each of those months.

In support of the petition, Ameren prepared and submitted a report (ASA 2008) that analyzed the results of extensive research previously conducted on the aquatic community of Coffeen Lake, particularly the sportfish populations. In the report, the potential effects of raising the May and October thermal standards were evaluated by (1) a retrospective assessment, which applied the results of studies on the status of the lake's fish populations to determine whether or how they have adapted to the recent thermal environment in the lake; and (2) a prospective assessment, which predicted how the lake's thermal environment during May and October might be altered under the proposed revised standards.

Following a public hearing, the IPCB issued a Final Opinion and Order on March 18, 2010 (PCB 09-38) granting Ameren the petitioned site-specific thermal standards specific to the months of May and October. On October 6, 2011 following a review of the proposed NPDES permit modification pursuant to 40 C.F.R. §123.44(d)(2), the U.S. Environmental Protection Agency (USEPA) transmitted a comment letter to the Illinois Environmental Protection Agency (IEPA). USEPA's letter stated that Ameren's studies provided "a comprehensive analysis of the biological community and the impacts for the Coffeen Power Station," and the enclosure to USEPA's letter (Comment #2) recognized that "the biological reports did a sufficient job in demonstrating that past thermal discharges did not appear to have an adverse impact on the entire community[.]" However, USEPA expressed concerns regarding the granting of thermal relief for the months of May and October. One of the concerns was the potential for adverse impacts to lower trophic levels due to the proposed alternate limitations, and specifically whether the increase in temperature could result in a change in spawning behavior and increased predation to "significant life stages" due to earlier spawning and increased growth.

[1] In December 2012, Ameren Energy Generating Company was indirectly acquired by Illinois Power Holdings, LLC and renamed Illinois Power Generating Company.

This report addresses that concern raised by USEPA and summarizes available underlying information on the potential for thermal impacts to lower trophic levels and predator-prey relationships in Coffeen Lake.

USEPA Guidance

USEPA Section 316(a) Draft Guidance (USEPA 1977) describes a decision train to be followed by both an NPDES applicant and regulatory agencies as to how to make 316(a) determinations. As part of the decision train, the guidance document describes an early screening procedure to evaluate the relative potential for thermal discharge impact on various components or trophic levels of an aquatic community based on the habitat zones they occupy, the importance of their role in ecosystem energy dynamics, or their life history characteristics. Vulnerability is defined as the potential for exposure to the thermal plume and resistance to impacts from exposure. For this procedure, the community is divided into six "biotic categories," which include phytoplankton, zooplankton, habitat formers, shellfish and macrophytes, fish, and other vertebrate wildlife. A vulnerability evaluation is conducted to develop "biotic category rationales" and to screen out biotic categories that have low potential for impacts. This evaluation allows further study to focus on representative important species (RIS), which are more likely to be exposed to the thermal plume and be sensitive to thermal impacts. The draft guidance further describes three types of 316(a) demonstrations from which an applicant may choose: a non-predictive demonstration of no prior appreciable harm (NPAH or Type I), a predictive demonstration of protection of representative important species (RIS) or Type II demonstration, or a low potential impact demonstration (Type III).

The original owner/operator of Coffeen Power Station, Central Illinois Public Service Company (CIPS), prepared a thermal demonstration on May 31, 1977 and filed a petition to the IPCB to establish site-specific thermal standards for Coffeen Lake. In response to this filing, on April 27, 1978 IPCB gave CIPS its requested site-specific discharge limits on an interim basis, with the condition that it present additional evidence that it has not caused, nor can reasonably be expected to cause significant ecological harm to Coffeen Lake. Pursuant to this, CIPS hired the Illinois Natural History Survey (INHS) to perform a study of whether the lake is capable of supporting a viable fishery, the only remaining major issue to resolve. The 3-year long INHS study was conducted during 1978-1981 and addressed the biotic categories recommended by USEPA guidance, including lower trophic levels such as phytoplankton/periphyton, zooplankton, and benthic macroinvertebrates, in addition to fish (Tranquilli and Larimore 1981). Trophic relationships were investigated through food habit studies, and the overall effects of the thermal discharge on trophic relationships were expressed in terms of fish growth, condition, and reproduction. Subsequent to the completion of the INHS investigation in 1981, the IPCB on March 19, 1982 granted thermal limitations requested by CIPS in a February 5, 1982 amended petition, which became the site-specific thermal standards existing prior to the December 2008 petition by Ameren for modified limits for the months of May and October.

According to USEPA 316(a) guidance, the INHS studies conformed to a Type I NPAH demonstration. Such a demonstration of no prior appreciable harm to the lake community provided the strongest evidence possible, superior to a Type II predictive assessment, which typically is required for new or planned facilities. The NPAH assessment approach was made possible because Coffeen Unit 1 had been operating for 13 years, and Unit 2 for 6 years, prior to the investigation, thus allowing for any thermal impacts on the community to be observable. The INHS investigation compared community components occurring within and beyond the direct influence of the thermal plume, and further compared the community to those found both in other cooling lakes (e.g., Lake Sangchris) and non-cooling lakes (e.g., Lake Shelbyville).[2]

INHS Study Findings

The phytoplankton and periphyton of Coffeen Lake were characterized seasonally and spatially in terms of species composition, abundance or standing crop, primary production, chlorophyll a concentration, and periphyton colonization rates (Coutant 1981). This study found a diversity of species in Coffeen Lake at all sampling stations, from within the plume area to the northwestern arm of the lake, the latter of which served as a control for thermal effects. The overall abundance of phytoplankton and chlorophyll a concentrations was within the range of values found in lakes Shelbyville and Sangchris, which either received no or less thermal loading per lake volume. Phytoplankton primary production rates in the heated area of Coffeen Lake were not significantly different from values in other areas of the lake. While there were differences in the relative abundance of flagellate and diatom phytoplankton between the heated discharge area and other areas, these differences were attributed to the influence of the water depths from which they were drawn; i.e., phytoplankton largely populating the thermal discharge area were drawn into the Station's intake at a greater depth (11 m), well below the euphotic zone and where populations of all species are sparse, before being discharged to the heated area sampled. The growth and production of periphyton were reduced in the heated discharge area, but Coutant (1981) suggested that could have been influenced by factors other than temperature such as current or some other growth limiting or inhibiting factor present in this area.

The zooplankton community of Coffeen Lake similarly was characterized seasonally and spatially in terms of species composition and diversity, abundance, and biomass standing crop (Waite 1981). The overall structure of the zooplankton community closely resembled the structure of the zooplankton communities reported for L. Sangchris (the cooling lake) and L. Shelbyville (the non-cooling lake). In the two years of sampling, the species richness was similar among the five sampling stations during the first year but not the second year, when species richness was greater in the shallower area north of the railroad causeway and out of the cooling loop, between the discharge and intake. This difference was attributed, at least partially, to the morphology of the lake basin, in which this shallower area would allow development of more littoral taxa not present in the deeper areas within the cooling loop. There was little evidence that the longitudinal thermal gradient in the lake either restricted or enhanced the distribution of taxa to certain areas in the lake. Sampling stations with high water temperatures during the warm months of summer sustained high diversities of species. Seasonal pulses in

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[2] Lake Sangchris was created in 1964-1966 as a cooling water source for the coal-fired Kincaid Station, and Lake Shelbyville was formed by damming the Kaskaskia River in 1970 for flood control. Both are located in central Illinois.

numbers of zooplankters (high in spring/summer and low in late winter) resembled those of Lake Shelbyville, the unheated reservoir. Waite (1981) concluded that the zooplankton community of Coffeen Lake was productive and viable despite the atypical thermal regimes, entrainment through the cooling water intake, or unusual water chemistry.

The benthic macroinvertebrate community of Coffeen Lake was characterized seasonally and spatially in terms of species composition, species diversity, and density at four locations around the lake (Warren et al. 1981). Water temperature, dissolved oxygen (DO) concentrations, and lake morphometry influenced the benthic community composition. Oligochaete worms predominated at the sampling station nearest to the discharge where water temperature was greatest (95°F maximum summer in the channel and 104°F maximum summer in shallow coves), but in this area the bottom was covered with silicate slag originating from the power plant, likely also influencing the community composition. Chironomid midge fly larvae, the phantom midge *Chaoborus punctipennis,* or the burrowing mayfly larvae *Hexagenia limbata* were numerically dominant at other locations. The lowest density, biomass, number of species, and species diversity occurred at the deepest location (#2) near the dam where vertical thermal stratification led to decreased DO concentrations; predation by carnivorous taxa also may have depressed densities there. Comparison of the benthic community in Coffeen Lake to Lake Sangchris was hampered by the differences in lake morphometry, where Coffeen Lake is deeper and Lake Sangchris is shallower and has more extensive littoral areas. Total densities of Chironomidae in lakes Coffeen, Sangchris, and Shelbyville were comparable, however, biomass in Lake Shelbyville was greater. This difference was attributed to the much lower densities of the genus *Chironomus* in Coffeen Lake, which Warren et al. (1981) attributed to predation or the lack of food, and not to thermal factors.

These INHS studies were conducted in 1978-1981 and the phytoplankton/periphyton, zooplankton, and benthic macroinvertebrate communities may have changed somewhat since then. However, it is unlikely that the trophic dynamics would be altered appreciably. At the time of these studies, Coffeen Lake was characterized as being eutrophic, according to the results of the USEPA National Eutrophication Survey conducted in 1973 with the cooperation of IEPA (CIPS 1977). More recently, Coffeen Lake was listed under §303(d) of the Clean Water Act as being impaired for aesthetic quality by excess algae resulting from excess phosphorous loading, for which a TMDL was prepared and approved (IEPA 2007). The consistency of the characterization of the lake being eutrophic suggests that the aquatic community in recent years likely has not changed dramatically.

The 1978-1981 INHS investigations also included food habit studies for bluegill (Newman 1981) and largemouth bass (Newman and Perry 1981). These studies are significant because they provide insight into the upper levels of the food web and indicate predator's food preferences for the prey species available in Coffeen Lake.

Bluegills were found to be opportunistic feeders, feeding on the most abundant and accessible food resources (Newman 1981a). They exploited both aquatic food resources and terrestrial arthropods, the latter originating from overhanging forest vegetation along the shoreline. Gastropods, along with plant material, dominated the food items in bluegill stomachs in the heated area of the lake, and chironomids and other aquatic insects were prevalent food items in the unheated "ambient" area, reflecting their relative availability and abundance in the two areas. There were seasonal differences in bluegill food habits. In the spring, fish eggs became the dominant food in both areas. In the fall, terrestrial arthropods were the predominant food items throughout the lake, when the diversity of ingested food items was greater in the heated areas than in the unheated areas. Newman (1981a) at that time speculated that intraspecific and interspecific competition for food and space, along with other factors, may have been responsible for stunting the growth of bluegills in Coffeen Lake.

Young-of-the-year (YOY) largemouth bass were insectivorous during the month of June but thereafter were piscivorous (Newman and Perry 1981). Piscivory commenced early in life at a total length of approximately 70 mm. Principal food items in June were microcrustaceans, chironomids and other aquatic arthropods. Shad (*Dorosoma* sp.) was the preferred prey species despite the greater abundance of *Lepomis* sunfish larvae, especially in the near-shore areas. Newman and Perry (1981) concluded that food competition between young largemouth bass and bluegill in Coffeen Lake would be minimal, and that the observed rapid growth of bass indicated that feeding dynamics would not be limiting the success of the largemouth bass population in Coffeen Lake.

SIUC and EIU Studies

Southern Illinois University-Carbondale (SIUC) conducted studies in Coffeen Lake from 1997 through 2006 (Heidinger et al. 2000, 2001, 2002; Brooks 2004, 2005; Brooks and Heidinger 2006, 2007). The studies were initiated as a condition of an approved 5-year variance for the site-specific thermal standards for May and October arising from a petition by CIPS in early 1997 and approved by the IPCB on June 5, 1997. The studies were designed and conducted specifically to monitor the fishery for any impact from the variance. The results of these studies were used as the basis for the report (ASA 2008) supporting the 2008 petition to again modify the site-specific thermal standards for the months of May and October. The decision to monitor the fishery was the result of concern for the fish species alone that supported the recreational fishery on the lake. It might be inferred that the observed status of the sportfish populations (specifically largemouth bass, bluegill and channel catfish) would accurately reflect the status of lower trophic levels in the lake and the trophic dynamics that support these populations, in that this approach would integrate all aspects of the thermal environment, including their effects on the various trophic levels in the lake. The applicable standard is the protection and propagation of a balanced, indigenous population [community] of shellfish, fish and wildlife in and on the body of water.

In 2010, Eastern Illinois University (EIU) was retained by Ameren to conduct additional studies on Coffeen Lake as result of a Memorandum of Understanding (MOU) with the Illinois Department of Natural Resources (IDNR). Among the objectives of the studies was to evaluate changes in density, age and size structure, condition, growth, and mortality of six targeted sportfish species in Coffeen Lake following the 2010 modification of thermal standards for May and October (Colombo and Porreca 2013a,b). The three key species (largemouth bass, bluegill, and channel catfish) from the SIUC studies were retained, but three species were added as targeted species: redear sunfish, white crappie, and black crappie. Lower trophic levels were not included directly in the studies, under the continued assumption that their wellness would be reflected by the status of these targeted fish species. The fish populations were sampled primarily by boat electrofishing, supplemented by fyke nets, gill nets, and a Lowrance HDS-10 side-scanning sonar. Thus, these most recent studies, conducted by EIU, provide 2-3 years of data for a demonstration of the realized effects of the higher May and October thermal standards approved in 2010 by the IPCB.

The overall conclusion from the EIU studies supported that of earlier investigations in that the sportfish of Coffeen Lake demonstrate behavioral thermoregulation, i.e., they congregate in cooler waters during warm months and in the warmer waters of the thermal discharge during the winter (Colombo and Porreca 2013a). Other findings included that, following adoption of the higher thermal standards in 2010, largemouth bass have remained in excellent condition, with a relative weight (W_r)[3] of 94.8-98.6 (average 96.1), indicating a healthy population. Crappie species also are in excellent condition (average W_r of 95.1 white crappie and 93.8 for black crappie) and, like largemouth bass, exhibit relatively fast growth. However, crappie are largely restricted to the ambient temperature reach outside the thermal plume. Mortality rates are high for largemouth bass and crappie, likely due to greater angling mortality for these two species, which support very active recreational fisheries in Coffeen Lake.

Bluegill, redear sunfish, and channel catfish are abundant and are in average condition (average W_r of 85.9 for bluegill, 86.6 redear sunfish, and 89.2 for channel catfish), which Colombo and Porreca (2013a) concluded as indicating that food supply does not appear to be influencing condition. Interestingly, no significant difference in bluegill density was found among all five sampling reaches in the lake, including reaches inside and outside the influence of the thermal plume. Colombo and Porreca (2013a) suggested that sunfish species, despite having high densities, have poor size structure (more small fish than large fish) due to thermal impacts in the lake causing scarce food resources during winter months. Although the water temperature during winter is suitable for macroinvertebrate prey for the sunfish, the biomass of macroinvertebrates could be reduced due to reduced plankton abundance throughout the lake, a common seasonal occurrence in temperate regions. Both sunfish species were short-lived (range age 0 to age 4) and high annual mortality rates (0.77-0.80 for bluegill and 0.60-0.84 for redear sunfish). Despite the relatively fast growth rates, the two species do not reach large body size because of the short life span. This phenomenon was characterized as being the common condition for panfish in thermal cooling lakes in Illinois (Colombo and Porreca 2013a).

Channel catfish were significantly more abundant within the "cooling loop" near the dam (Colombo and Porreca 2013a), preferring the greater depths and warmer temperatures there. Channel catfish was the longest-lived sportfish species with fish up to 8 years of age and a fairly normal length frequency distribution.

[3] Relative weight is an index of condition calculated by dividing the weight of the fish by a length-specific standard weight for the species.

Lower Trophic Level Impacts of Modified May and October Standard

Although impacts from the modified May/October thermal standards on lower trophic levels in Coffeen Lake have not been studied directly, the relative magnitude of any impacts can be inferred from data gathered in 1978-1981 on the composition and dynamics of these trophic levels under continuous Station operation, and from the status of the consumer species in the lake subsequent to the standard modification in 2010.

To review, the revisions to thermal standards for Coffeen Lake were limited to the months of May and October, two transition months between winter and summer thermal conditions. As such, the revised standards more realistically reflect a natural thermal environment, where temperature increases or decreases occur more gradually than the abrupt change of up to 8°F (Figure 1) inherent in the previous site-specific standards (ASA 2008). The more gradual increase in temperature allows organisms to easily acclimate to the higher temperatures. Also as shown in Figure 1, there usually is not a full month of temperatures at the maximum limit so that any influence of higher temperatures would be lessened, especially in May. As an ameliorating influence, at any time there is a thermal gradient in the lake either horizontally or vertically (with depth) where a mobile organism can reach a thermal refuge from sustained temperatures that it would not otherwise tolerate.

The INHS studies in 1978-1981 collected seasonal data on lower trophic levels, including during peak summer temperatures that would be expected to exceed May and October water temperatures under the modified thermal standards. Despite these peak temperatures, phytoplankton, zooplankton, and benthic macroinvertebrates maintained normal diverse communities within Coffeen Lake overall, and thus maintained a food base for higher trophic levels such as the sportfish species studied by SIUC and EIU. While trophic dynamics in an artificial cooling reservoir such as Coffeen Lake could be complicated, further detailed study of the lower trophic levels in Coffeen Lake should not be necessary, since there already is valuable information available.

The food web in Coffeen Lake appears to be typical of other Midwestern reservoirs, as are the predator-prey relationships. The predator fish species (e.g., largemouth bass and bluegill) are generalist, opportunistic species that demonstrate prey switching should one or more preferred species be limited in abundance and availability, i.e., require too much energy expenditure to find and capture. This is a feeding tactic commonly observed in aquatic communities and is a benefit of the complexity of food webs in such communities (Murdoch 1969). Food habit studies of bluegill by Newman (1981a) and of largemouth bass by Newman and Perry (1981) demonstrated the potential for prey switching by having a diversity of prey items consumed, depending on location.

Higher temperatures in May and October under the modified standards should have minimal effects on lower trophic communities and the food chain, as demonstrated by the 2010-2012 EIU studies of species at the top of the food chain (Colombo and Porreca 2013a). They concluded that there was no evidence that increased thermal loading from the modified thermal standards for May and October had a detrimental impact on the sportfish populations in Coffeen

Lake and that based on age data, observed recruitment of these species indicated continued successful reproduction and survival. The condition of largemouth bass and crappie was excellent, and average or better for the other target species, indicating that food was not limited during the post-modification period of study. In fact, they state that even for bluegill and redear sunfish (species in average condition), food was abundant in Coffeen Lake. Colombo and Porreca (2013a,b) observed that high abundances and small lengths of the sunfish species would usually indicate stunting, but their age and growth data do not support these populations as being stunted. They concluded that sunfish have ample food

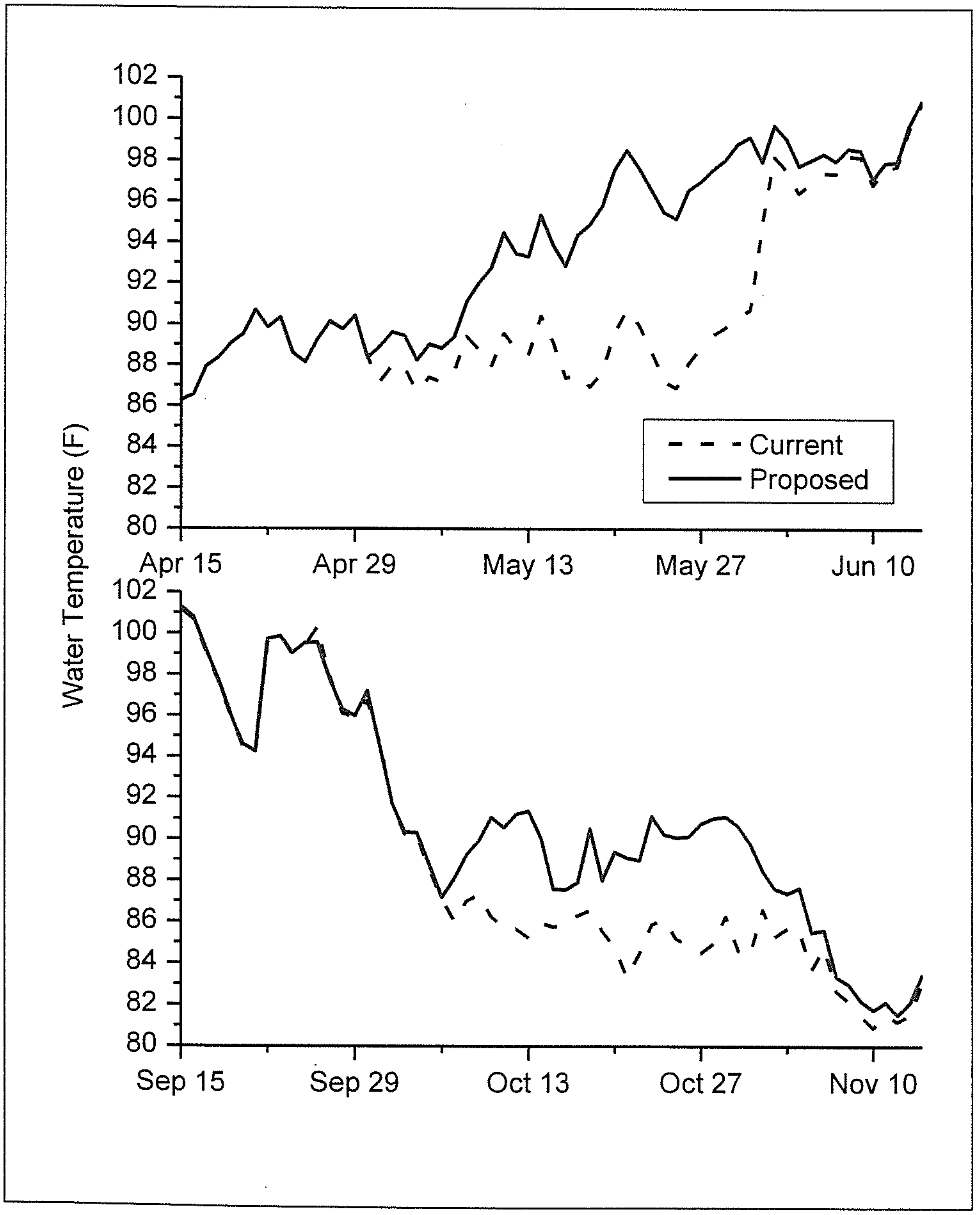

Figure 1. Predicted Mean Daily Near-Surface Water Temperatures at the Mixing Zone Boundary under Current and Proposed Thermal Standards for May and October using 1987 Meteorological Conditions

availability and habitat, and are in better condition than that of stunted populations, contrary to the earlier opinion of Newman (1981a).

USEPA 's specific concern was whether the increase in May temperatures could result in a change in spawning behavior or increased predation to "significant life stages" due to earlier spawning and increased growth. The most relevant information is available for largemouth bass and its prey species in Coffeen Lake. Tranquilli and Perry (1981) found that largemouth bass reached gonad maturation and began spawning in mid or late March in the heated discharge area of the lake, with most intense spawning from mid to late April. Spawning in the unheated "ambient" area did not begin until late April and extended into mid-May, i.e., approximately 3-4 weeks later than in the heated area. Length frequency distributions of YOY largemouth bass in the fall of 1979 indicated two size modes, possibly resulting from differences in spawning time and/or the length of the growing season within the heated and unheated areas of the lake Tranquilli and Perry (1981). The multiplicity of spawned cohorts help stabilize recruitment in a population in an unstable environment, but in Coffeen Lake may give an advantage to earlier spawned YOY, which are afforded a longer growing season.

The food habit study by Newman and Perry (1981) showed YOY largemouth bass in June are insectivorous but by July are piscivorous, with the primary, identifiable prey being *Dorosoma* larvae (likely gizzard shad). Newman (1981b) found that gizzard shad larvae were initially collected on April 23 in the heated area of Coffeen Lake, and approximately one week later in the unheated area, thus demonstrating only a limited influence of the thermal discharge on the timing of spawning for gizzard shad. Larval gizzard shad were present throughout May and June in ichthyoplankton collections (Newman 1981b), but based on food habit studies (Newman and Perry 1981) must also have been present in July. Thus, the occurrence of gizzard shad larvae would coincide with the beginning of piscivory for largemouth bass YOY, and in fact, earlier spawning in the discharge area may prove to be advantageous for young largemouth bass by extending the period of their co-occurrence.

Sunfish (*Lepomis* sp.) have a protracted spawning season, thus their eggs and larvae should be available as alternate prey items for the largemouth bass YOY. *Lepomis* larvae, like gizzard shad, were first collected on April 23 in the heated discharge area of Coffeen Lake, but not until May 21 in the unheated area (Newman 1981b). Peak larval abundance occurred during June. A second period of spawning occurred later in the summer, with larvae being captured in samples from late July until at least late August.

Warmer discharge temperatures in May would be occurring after much of largemouth bass spawning occurs and when they are larvae or begin to feed on insects and other invertebrates. At the same time, gizzard shad and *Lepomis* sunfish would be spawning, or would have spawned and their larvae would be developing, depending on their location within the lake. Warmer temperatures in May potentially would promote higher metabolism, increased feeding, and faster growth for YOY largemouth bass, assuming a sufficient food supply. The warmer temperatures also could accelerate spawning of gizzard shad and *Lepomis* sp. and bring their eggs and larvae into synch with the food demands of the young largemouth bass. The actual mechanisms of this predator-prey relationship are unknown at this time, but more important are the observable results. The studies by Colombo and Porecca (2013a,b) have demonstrated that spawning and recruitment of young largemouth bass have been successful annually since the implementation of the modified May and October standards, as also for the other five fish predator species they targeted.

Conclusions

Information on the likely effects on lower trophic levels from raising the site-specific thermal standards for May and October is available from extensive studies conducted on Coffeen Lake since the late 1970s and as recently as 2012. While data directly on the lower trophic levels themselves are not recent, they provide much more information than typically is available for 316(a) demonstrations. Furthermore, Coffeen Lake has remained a eutrophic water body since the earlier studies, and it is unlikely that the trophic dynamics would be altered appreciably over that period.

Higher temperatures in May and October under the modified standards should have minimal effects on lower trophic communities and the food chain. The most recent studies (2010-2012) have concluded that there is no evidence that increased thermal loading from the modified thermal standards for May and October has had a detrimental impact on the sportfish populations in Coffeen Lake. Recruitment of recent year classes observed by these studies on sportfish species have indicated successful reproduction and survival, and rapid growth rates have been maintained, implying that the lower trophic levels in Coffeen Lake have continued to supply an ample food base for these top predators. Since the implementation of the modified thermal standards for May and October, the diversity of thermal habitats has remained for both the lower and upper trophic levels of the Coffeen Lake community, resulting in an exemplary recreational fishery.

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LeCrone, Darin

IEPA EXHIBIT No. 9

From:	Koch, Brian
Sent:	Thursday, July 24, 2014 2:15 PM
To:	LeCrone, Darin; Twait, Scott; Sofat, Sanjay; Flowers, Stephanie; Tsai, Shu-Mei
Subject:	RE: Coffeen 316(a)

An artificial lake made to retain heat is going to have an aquatic life community entirely dependent on that heat. Only when largemouth bass health declines would someone argue that an artificial lake is not in good condition.

From: LeCrone, Darin
Sent: Thursday, July 24, 2014 2:02 PM
To: Twait, Scott; Koch, Brian; Sofat, Sanjay; Flowers, Stephanie; Tsai, Shu-Mei
Subject: RE: Coffeen 316(a)

What is "Indigenous" for an "artificial cooling lake"? To me that has always been a tough question. What are the indigenous species in a manmade lake that is stocked and managed as a sport fishery?

Darin E. LeCrone, P.E.
Manager, Industrial Unit
Division of Water Pollution Control
Illinois Environmental Protection Agency

217/782-0610

From: Twait, Scott
Sent: Thursday, July 24, 2014 2:00 PM
To: Koch, Brian; LeCrone, Darin; Sofat, Sanjay; Flowers, Stephanie; Tsai, Shu-Mei
Subject: RE: Coffeen 316(a)

I think Darin is correct that it needs to be a "Balanced Indigenous Population" for them to take advantage of the 316(a) relief. In this case, "Indigenous", needs to be thought about. What is "Indigenous" for an "artificial cooling lake"?

Scott

From: Koch, Brian
Sent: Thursday, July 24, 2014 1:43 PM
To: LeCrone, Darin; Twait, Scott; Sofat, Sanjay; Flowers, Stephanie; Tsai, Shu-Mei
Subject: RE: Coffeen 316(a)

That is the part I've struggled with. Even in the Board Order, the Board references the original rulemaking and essentially states that the lake is unnatural compared to other Illinois lakes (see below).

"The Board finds that ASA's conclusions are consistent with the Board findings in the original rulemaking for thermal standards in cooling lakes:

I don't either.

Darin E. LeCrone, P.E.
Manager, Industrial Unit
Division of Water Pollution Control
Illinois Environmental Protection Agency

217/782-0610

From: Twait, Scott
Sent: Wednesday, July 23, 2014 12:14 PM
To: Sofat, Sanjay; Flowers, Stephanie; Koch, Brian; LeCrone, Darin; Tsai, Shu-Mei
Subject: RE: Coffeen 316(a)

I don't see a problem.

Scott

From: Sofat, Sanjay
Sent: Wednesday, July 23, 2014 12:10 PM
To: Flowers, Stephanie; Koch, Brian; Twait, Scott; LeCrone, Darin; Tsai, Shu-Mei
Subject: RE: Coffeen 316(a)

So is there a problem with mentioning just the most recent Board order and not the older ones?

From: Flowers, Stephanie
Sent: Wednesday, July 23, 2014 11:43 AM
To: Koch, Brian; Twait, Scott; LeCrone, Darin; Tsai, Shu-Mei; Sofat, Sanjay
Subject: RE: Coffeen 316(a)

The Board Order in PCB-09-38 does incorporate site specific thermal relief for all of the year not just May and October. See language from Order below.

ORDER

1. The thermal discharge to Coffeen Lake from Ameren Energy Generating Company's Coffeen Power Station, located in Montgomery County, shall not result in a temperature, measured at the outside edge of the mixing zone in Coffeen Lake, which:

A. Exceeds 105 degrees Fahrenheit as a monthly average, from June through September, and a 112 degrees Fahrenheit as a maximum for more than three percent of the hours during that same period.

B. Exceeds 89 degrees Fahrenheit as a monthly average, from November through April, and 94 degrees Fahrenheit as a maximum for more than two percent of the hours during that same period.44

IEPA EXHIBIT
No. 10

LeCrone, Darin

From: LeCrone, Darin
Sent: Tuesday, September 09, 2014 9:33 AM
To: Tsai, Shu-Mei
Cc: Keller, Al
Subject: RE: Coffeen

As we discussed in the last meeting, we need to have them try and add something to their submittal discussing the lower trophic level species. I think this is the last thing we need to be able to pass judgment on the renewal of their 316(a) variance. We need to make sure they have addressed the points concerning renewal of a variance in 35 IAC 106 Subpart K.

Darin E. LeCrone, P.E.
Manager, Industrial Unit
Division of Water Pollution Control
Illinois Environmental Protection Agency

217/782-0610

From: Tsai, Shu-Mei
Sent: Tuesday, September 09, 2014 9:20 AM
To: LeCrone, Darin
Subject: RE: Coffeen

Do we have to give a Special Condition Language for the thermal issue (I mean include trophic issues)? I talked Brian about lower trophic level impacts report, but he didn't know what should he with that. Please advise.

From: LeCrone, Darin
Sent: Tuesday, September 09, 2014 9:13 AM
To: Tsai, Shu-Mei
Subject: Coffeen

How is this one coming along? It is WAY behind schedule. If you still need to contact them about the 316(a) issue, do so. This needs to be on notice by the end of the month.

Darin E. LeCrone, P.E.
Manager, Industrial Unit
Division of Water Pollution Control
Illinois Environmental Protection Agency

217/782-0610