

Status of Hydropower Development on the Ohio River



Technical Committee Meeting
June 7-8, 2016
Agenda Item 6a



Policy on Dissolved Oxygen Monitoring Requirements For Ohio River Hydroelectric Power Generating Facilities

- Background

- Policy adopted by Commission in 1988.
- Primary concern was potential impact of hydropower development on dissolved oxygen (DO) concentrations.
- In 1987, the Federal Energy Regulatory Commission (FERC) issued an environmental impact study of hydropower development on the lower Allegheny and upper Ohio Rivers. Among the study findings was that some dams were “good aerators” and some were not. For the “**good aerator**” dams, it was proposed that FERC licenses require maintenance of a **6.5 mg/L DO** level while a **5.0 mg/L** level was recommended for the “**poor aerators**”.
- A hydro facility does not lower the DO level directly; rather it prevents the river from receiving an input of oxygen. It is that oxygen input that needs to be preserved at critical periods (i.e., low flow, high temperature periods when DO is typically lowest). The Technical Committee therefore recommended, and the Commission adopted, a policy based on the protection of the aeration capability of each dam.



ORSANCO Hydropower Policy

- Operating licenses for Ohio River hydropower facilities should contain provisions to assure that:
 1. Adequate studies are conducted prior to facility operation to define aeration characteristics of the dam.
 2. Continuous monitoring of dissolved oxygen is provided at representative locations above and below the facility as appropriate, with data available to ORSANCO through remote interrogations.
 3. Provisions are made in the facility design and operation to allow maintenance of the full aeration potential of the dam during critical conditions.
- Specific application of this policy shall be on a case-by-case basis.



ORSANCO's Pollution Control Standard Requirement for Dissolved Oxygen

Chapter 3 Section 2B: AQUATIC LIFE PROTECTION

To protect aquatic life, the following criteria shall be met outside the mixing zone:

DISSOLVED OXYGEN:

Average Daily DO - 5.0 mg/L

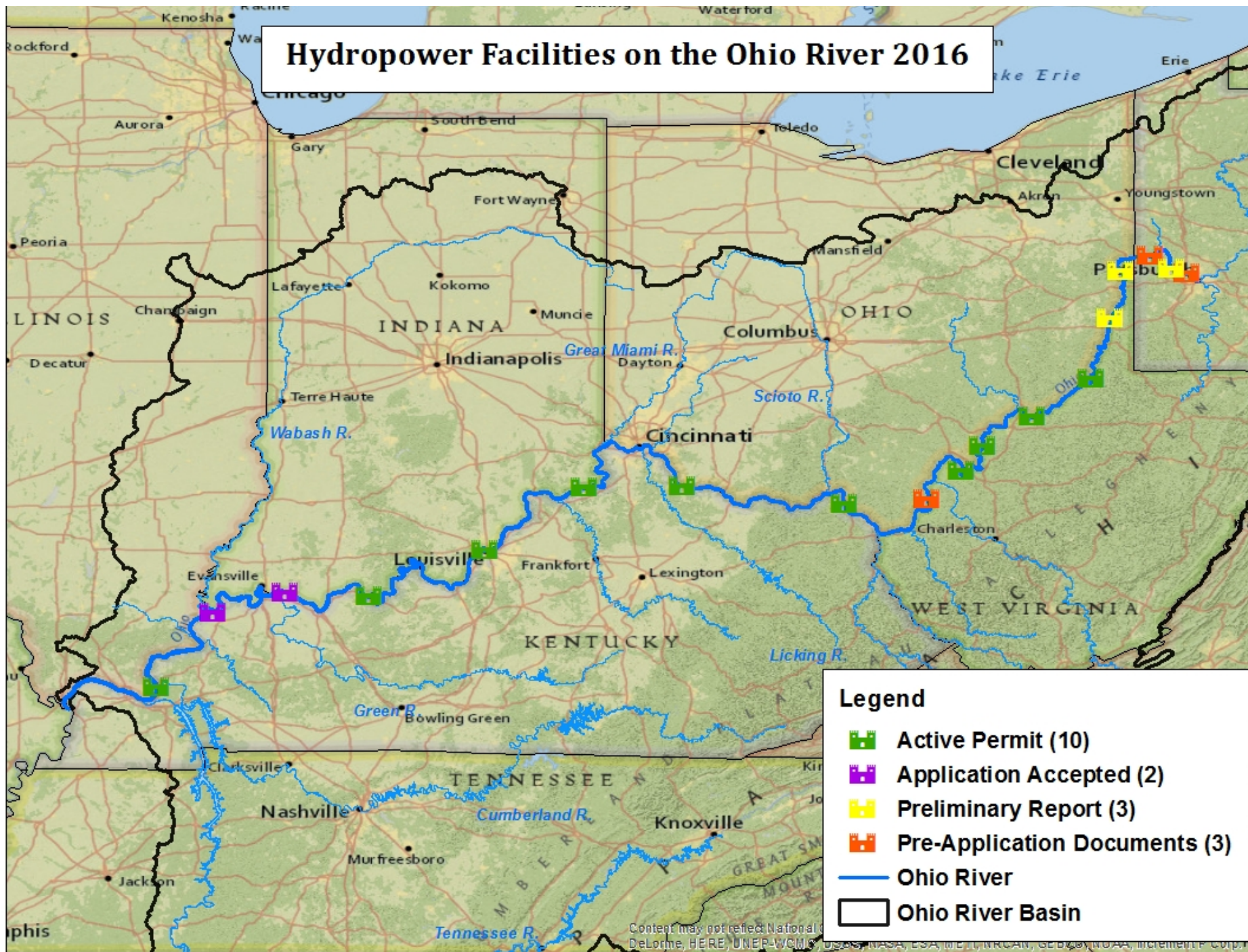
Minimum DO - 4.0 mg/L

Spawning Season (April 15-June 15) – 5.0 mg/L min

Current Data Collection

Hydro Facility	Upstream Site	Downstream Site	Data Method	Data Frequency
New Martinsville	X	X	Modem	Hourly
Willow Island	X	X	WQData	Hourly
Belleville	X	X	Email	Annually
Racine*			WQData	Hourly
Greenup	X	X	Modem	Hourly
Markland	X	X	USGS Site	Instantaneous
Meldahl	X	X	WQData	Hourly
Ohio Falls	X		Electronic	Monthly
Cannelton	X	X	WQData	Hourly
Smithland	X	X	WQData	Hourly
*Inside the Power House				

Hydropower Facilities on the Ohio River 2016





Hydropower Highlights

Currently there are hydropower electric developments at eighteen Lock and Dams on the Ohio River. Olmsted is the only site with no development submitted to FERC.

- Pre-Application Documents filed with FERC
 - Emsworth
 - Montgomery
 - R.C. Byrd
- Preliminary permit filed with FERC
 - Dashields
 - New Cumberland
 - Pike Island
- Application Filed with FERC
 - Newburgh
 - Uniontown



Hydropower Highlights, Cont'

- Active Hydropower Facilities
 - New Martinsville
 - Willow Island
 - Belleville
 - Racine
 - Greenup
 - Meldahl
 - Markland
 - Ohio Falls
 - Cannelton
 - Smithland

RMI	Project Name	Issue Date	Expiration Date	Authorized Capacity (KW)	Licensee	Waterway	ST	Docket Number	Status
6.2	EMSWORTH	3/14/14		24000	FFP MISSOURI 5, LLC	OHIO RIVER	PA	P-13757	Pre-Application Documents
13.3	DASHIELDS	12/16/13	11/30/16	5000	FFP PROJECT 133, LLC	OHIO RIVER	PA	P-14524	Preliminary Permit
31.7	MONTGOMERY	3/14/14		42000	SOLLIA 6 HYDROELECTRIC, LLC	OHIO RIVER	PA	P-13768	Pre-Application Documents
54.4	NEW CUMBERLAND	9/17/13	8/31/16	49800	FFP PROJECT 121 LLC	OHIO RIVER	WV	P-14504	Preliminary Permit
84.2	PIKE ISLAND	8/14/14	7/31/17	40000	PIKE ISLAND ENERGY, LLC	OHIO RIVER	OH	P-14590	Preliminary Permit
126.4	NEW MARTINSVILLE	6/4/84	5/31/34	35720	NEW MARTINSVILLE, CITY OF (WV)	OHIO RIVER	WV	P-3206	Active Permit
161.7	WILLOW ISLAND	9/27/89	8/31/39	35000	AMERICAN MUNICIPAL POWER, INC	OHIO RIVER	WV	P-6902	Active Permit
203.9	BELLEVILLE	9/27/89	8/31/39	42000	OMEGA JV5 (AMP-OH)	OHIO RIVER	WV	P-6939	Active Permit
237.5	RACINE	12/27/73	11/30/23	47500	OHIO POWER CO (NY)	OHIO RIVER	WV	P-2570	Active Permit
279.2	R.C. BYRD	3/28/11		50000	CITY OF WADSWORTH, OHIO	OHIO RIVER	OH	P-12796	Pre-Application Documents
341	GREENUP	3/29/76	2/28/26	70560	HAMILTON CITY OF (OH)	OHIO RIVER	OH	P-2614	Active Permit
436.2	MELDAHL	6/25/08	5/21/58	105000	AMERICAN MUNICIPAL POWER, INC	OHIO RIVER	KY	P-12667	Active Permit
531.5	MARKLAND	9/7/10	4/30/41	64800	DUKE ENERGY INDIANA, INC.	OHIO RIVER	IN	P-2211	Active Permit
606.8	OHIO FALLS	10/27/05	10/31/45	100656	LOUISVILLE GAS & ELECTRIC CO (KY)	OHIO RIVER	KY	P-289	Active Permit
720.7	CANNELTON	6/21/91	5/31/41	84000	AMERICAN MUNICIPAL POWER, INC	OHIO RIVER	KY	P-10228	Active Permit
776.1	NEWBURGH	4/29/11		65000	SYMBIOTICS, LLC	OHIO RIVER	KY/IN	P-12962	Application Accepted
846	UNIONTOWN	4/29/11		96000	SYMBIOTICS, LLC	OHIO RIVER	KY/IN	P-12958	Application Accepted
918.5	SMITHLAND	6/30/88	5/31/38	72000	AMERICAN MUNICIPAL POWER, INC	OHIO RIVER	KY	P-6641	Active Permit

Questions?

