Appendix B
Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

August 9, 2019

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-11.2
888 First St., NE
Washington, DC 20426

RE: Racine Hydroelectric Project (FERC #2570-032); Study Plan Determination - Proposed Mussel Survey

Dear Ms. Bose:

The U.S. Fish and Wildlife Service (Service) has reviewed the Federal Energy Regulatory Commission's (Commission) May 13, 2019 Study Plan Determination (SPD) for the Racine Hydroelectric Project (FERC #2570). As the Commission stated in its SPD, "[n]othing in this study plan determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies." The Service assumes that this statement also applies to the methods of an approved study. In its SPD, the Commission states that AEP Generation Resources (AEPGR) proposes to conduct the mussel survey in accordance with the West Virginia Mussel Survey Protocols (Protocols; West Virginia DNR, 2018). However, the survey as currently proposed by AEPGR does not adhere to the Protocols, and AEPGR has indicated that they are unwilling to carry out the study in conformance with the Protocols due to anticipated costs.

The Service has identified the reach of the Ohio River downstream of the Project (i.e., the R.C. Byrd Pool) as potentially supporting federally listed endangered freshwater mussels. Federally listed endangered freshwater mussel species are known to occur downstream of the R.C. Byrd Locks and Dam, and have also been documented downstream of the Willow Island Locks and Dam, which is two navigation pools upstream from the Racine Project. Therefore, there is a high probability for federally listed endangered mussels to occur downstream of the Racine Project. Based on the results of previous surveys (e.g., Lewis Environmental Consulting, 2015), suitable habitat for supporting federally listed endangered mussel species is present downstream of the Racine Project, within 1600 meters of the powerhouse discharge, and the trigger for requiring a Phase 2 mussel survey was met during the previous survey. The Protocols require a Phase 2 mussel survey within 1600 meters of the Project discharge, or within the extent of Project velocity effects based on hydraulic modeling if it exists.

In its Proposed Study Plan (PSP) comments, the Service stated that the originally proposed mussel survey extended 800 meters farther downstream than necessary and, in exchange for eliminating these transects, requested additional transects extending farther (180 meters) into the river from the right descending bank, with decreased spacing (25 meters in conformance with the Protocols). However, due to AEPGR's stated concerns regarding study costs, the Service and the West Virginia Division of Natural Resources (WVDNR) offered a compromise approach whereby transects would initially have a spacing of 50 meters, and additional transects would only be added upstream or downstream of transects where the mussel diversity or density trigger is met for requiring a Phase 2 survey. The requested approach was outlined in both the Service's and WVDNR's PSP comments which were filed on March 15, 2019 and March 22, 2019, respectively.

In response to the resource agency's PSP comments, AEPGR stated in their Revised Study Plan (RSP) that they would conduct a mussel survey in accordance with the Protocols; however, their description of methods and proposed transect spacing did not conform to the Protocols or the compromise methods offered by the resource agencies. In its SPD, the Commission staff concluded that AEPGR's proposed study would provide staff with the information necessary to describe the existing environment downstream of the Project. The Service respectfully disagrees with this conclusion. When the Commission prepares its environmental assessment, staff may be unable to make an informed effects determination with a high degree of certainty because the proposed methodology is insufficient for detecting federally listed endangered mussels that may be present. Commission staff further stated that because AEPGR's proposal to supplement its transect sampling with additional spot searches in areas of highest mussel densities and search until no new species are collected, it would be reasonable to conclude that the proposed study would document all mussel species present within the study reach. The Service also disagrees with this conclusion. AEPGR's proposed methodology includes 100-meter transect spacing in the area where previous surveys found the highest mussel concentrations. This spacing will not allow for detection of all areas of high mussel density and, therefore, will not result in an acceptable degree of certainty that all mussel species present within the study reach have been detected (i.e., mussel beds between transects may be completely overlooked).

When suitable habitat for a listed species is present and the project may affect listed species, the Service recommends species surveys to either refute the assumption of presence and the need for formal consultation, or to enable accurate, fact-specific analyses of effects and development of appropriate conservation measures. In some situations, rather than conduct habitat and/or species surveys, a project proponent and action agency may choose to assume presence of the species. Assuming presence, however, usually makes the effects analysis significantly more difficult and time consuming because the specific nature of the species' presence (e.g., number of individuals present) is crucial to the effects analysis and must still be determined using the best available information. Also, assuming presence can lead to the need for conservation measures that otherwise would not be needed if surveys were to be conducted and show that the species is either not present or not likely to be adversely affected by the proposed action.
The Service requests that the Commission reconsider its position regarding AEPGR's proposed mussel survey, and require a mussel survey in conformance with the compromise Phase 2

approach previously outlined by WVDNR and the Service, to ensure development of an accurate freshwater mussel community baseline for Project relicensing. The WVDNR has communicated to AEPGR that, in order for the State 401 Water Quality Certification (WQC) to be issued by the West Virginia Department of Environmental Protection, a mussel survey that meets the Protocols will be needed, and that an additional survey may be required at the time of submittal of the WQC application if AEPGR chooses to conduct a survey that does not adhere to the Protocols. In the absence of reliable information that is based on a mussel survey that meets the Phase 2 Protocols or the modified Phase 2 Protocols offered as a compromise by the Service and WVDNR, the Service may be unable to provide its concurrence with the Commission's endangered species effects determination for federally listed endangered mussels potentially occurring downstream of the Project.

Thank you for your consideration in this matter. If you have any questions regarding this matter, please contact Richard McCorkle of my staff at 814-206-7470.

Sincerely,

Sonja Jahrsdoerfer

Sonja Jahrsdoerfer
Project Leader

Cc: Jonathan Magalski, AEPGR
Jacob Harrell, WVDNR
Janet Clayton, WVDNR

References:

West Virginia Division of Natural Resources. 2018. West Virginia Mussel Survey Protocols. 24 pp. Available online: http://www.wvdnr.gov/Mussels/2018%20WV%20Mussel%20Survey%20Protocols.pdf

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

Via Electronic Filing

August 13, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Racine Hydroelectric Project (FERC No. 2570-032)
First Quarterly Study Progress Report

Dear Secretary Bose:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), hereby submits the First Quarterly Study Progress Report for the Racine Hydroelectric Project (Project) (FERC No. 2570) relicensing.

AEPGR has elected to utilize the Integrated Licensing Process (ILP) for the relicensing of the Project as defined in 18 Code of Federal Regulations (C.F.R.) Part 5. As proposed in AEPGR's April 12, 2019 Revised Study Plan (RSP) and approved in the Federal Energy Regulatory Commission's (Commission) May 13, 2019 Study Plan Determination (SPD), AEPGR is hereby filing the First Quarterly Study Progress Report for the Project. This progress report describes the activities performed since the SPD, as well as ILP activities generally expected to be conducted in quarter 3 (Q3) of 2019. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved RSP and the Commission's SPD.

1. Water Quality Study

- Continuous water temperature and dissolved oxygen loggers were deployed at three locations as described in the RSP (i.e., reservoir (intake area – a set of loggers at two different depths), tailrace, and approximately 0.8 miles downstream of the Project). These continuous data loggers began recording data on May 1, 2019. Per the May 13, 2019 SPD, an additional water quality monitoring location was required approximately 2,000 feet downstream of the Project on river left (as facing downstream). A set of loggers was deployed approximately 2,000 feet downstream of the Project dam adjacent to the Racine Lock structure on June 17, 2019. The additional downstream river left continuous data loggers began recording data on June 17, 2019.
- Monthly data download and discrete multi-parameter water quality sampling were conducted May through July 2019 at each of the three initial data logger locations, and in June and July 2019 for the additional location.
- Reservoir water quality profile data was collected at three locations May through July 2019.
- AEPGR anticipates that continuous data collection, monthly data downloads, discrete water quality sampling, and reservoir water quality profiles will continue in Q3 of 2019.

2. Recreation Study

- Weatherproof boxes containing hardcopies of recreation survey questionnaires were deployed at the tailrace fishing access site in May. The boxes are checked periodically for completed forms, however none have been completed to date.
- As a component of the Recreation Study, AEPGR field technicians performed a Recreation Facility Inventory and Condition Assessment of the facilities at the tailrace fishing access site. Data was collected regarding the types of existing recreation facilities available, type of vehicular access, condition of facilities, etc.
- An online Visitor Use Survey was launched in May 2019 and is available at the Project's public relicensing website (www.aephydro.com/HydroPlant/Racine). Signs were placed at multiple locations at the Project's tailrace fishing access site providing recreationists with the relevant information on how to access the online survey.
- Five trail cameras were installed at various locations (i.e., parking area entrance, parking area, fishing pier stairway, fishing pier, and picnic area) to document recreational usage of the Project's recreation facilities.
- Activities expected to occur in Q3 of 2019 include scheduling interviews with interested stakeholders to gather additional information regarding recreation in the Project area, continued monitoring of any completed online and on-site survey forms, and continued photo documentation of recreation in the Project area.

3. Cultural Resources Study

- AEPGR has conducted a background literature review of the Project's area of potential effects (APE).
- Fieldwork was completed during the second week of August.
- Activities expected to occur in Q3 of 2019 include review of data and report synthesis.

4. Mussel Survey

- AEPGR is continuing to consult with the U.S. Fish and Wildlife Service (USFWS) and the West Virginia Division of Natural Resources (WVDNR) regarding the methodology for the Mussel Survey.

5. Fisheries Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage

- AEPGR's consultant conducting this fieldwork has filed for and received a scientific collector's permit from the WVDNR.
- Per the May 13, 2019 SPD, AEPGR must conduct spring and fall fisheries surveys upstream and downstream of the Project when the water temperature is within optimal ranges specified by USFWS and WVDNR. By the time the SPD was issued, the water

temperature in the Ohio River had already exceeded the optimal temperature range for the spring survey and therefore, the field work was not able to be performed in accordance with the SPD for the spring fisheries work in 2019. AEPGR plans to conduct the spring fisheries survey in 2020 when the water temperature is within the specified range.

- The fall sampling event is expected to be conducted in Q3 of 2019.

6. Fish Entrainment and Impingement Study

- AEPGR is continuing to review Project operations and physical Project facilities that will be used in the evaluations for this study.
- AEPGR anticipates collecting intake velocity measurements upstream of the Project dam during Q3 of 2019 when the fall fisheries sampling will be conducted.

7. Eastern Spadefoot Toad Habitat Suitability Assessment

- AEPGR's consultant performing this study anticipates scheduling an initial site visit to view the Project area and several nighttime surveys at the Project in Q3 of 2019. Additional surveys will be conducted from April through June of 2020, during the peak period with the highest probability of finding eastern spadefoot toads.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Distribution List
Liz Parcell (AEP)
Rob Quiggle (HDR)

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Federal Agencies

Mr. John Eddins
Assistant Director
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001-2637

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 1st St NE
Washington, DC 20426

FEMA Region 3
615 Chestnut Street
One Independence Mall, Sixth Floor
Philadelphia, PA 19106-4404

FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, IL 60605

Mr. John Bullard
Regional Administrator
NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930-2276

Mr. Andrew Johnson
Water Quality Team Lead/Water Resources Engineering Section
US Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Ms. Belinda Weikle
Water Resources Engineering Section
U.S. Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Mr. Harold Peterson
Bureau of Indian Affairs
U.S. Department of the Interior
545 Marriott Dr, Suite 700
Nashville, TN 37214

Office of the Solicitor
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Mr. Lindy Nelson
Regional Environmental Officer, Office of Environmental Policy & Compliance
U.S. Department of the Interior,
Philadelphia Region
Custom House, Room 244
200 Chestnut Street
Philadelphia, PA 19106

Ms. Liz Pelloso
Wetland/Environmental Scientist - Region 5
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Barbara Rudnick
Region 3
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Ken Westlake
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Angela Boyer
Field Office Supervisor, Ohio Ecological Services Field Office
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Richard C. McCorkle
Fish and Wildlife Biologist, Pennsylvania Field Office
U.S. Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Mr. Marty Miller
Chief, Endangered Species - Northeast Region (Region 5)
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

Mr. John Schmidt
Acting Supervisor, West Virginia Field Office
U.S. Fish and Wildlife Service
694 Beverly Pike
Elkins, WV 26241

Ms. Alisa Shull
Chief, Endangered Species - Midwest Region (Region 3)
U.S. Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, MN 55437-1458

Mr. Jeremy S. White
West Virginia Water Science Center
U.S. Geological Survey
11 Dunbar Street
Charleston, WV 25301

Mr. Shaun M. Wicklein
Virginia Water Science Center
U.S. Geological Survey
1730 East Parham Road
Richmond, VA 23228

Ohio Office
U.S. Geological Survey
Ohio Water Science Center
6460 Busch Boulevard, Suite 100
Columbus, OH 43229-1737

Ohio Office
US Geological Survey
Field Office
1515 Brightwood Road SE
New Philadelphia, OH 44663

Hon. Bill Johnson
U.S. Congressman, 6th District
U.S. House of Representatives
1710 Longworth House Office Building
Washington, DC 20515

Mr. Michael Reynolds
Acting Director, Headquarters
U.S. National Park Service
1849 C Street, NW
Washington, DC 20240

Mr. Cameron Sholly
Regional Director, Midwest Region
U.S. National Park Service
601 Riverfront Drive
Omaha, NE 68102-4226

Hon. Sherrod Brown
U.S. Senate
713 Hart Senate Office Building
Washington, DC 20510

Hon. Rob Portman
U.S. Senate
448 Russell Senate Office Building
Washington, DC 20510

State Agencies

Ms. Audrey Blakeman
Geologist, Geological Survey Main Office
ODNR Division of Geological Survey
2045 Morse Road, Building C-1
Columbus, OH 43229-6693

Mr. Michael Bailey
Chief, Ohio State Parks & Watercraft
ODNR Division of State Parks & Watercraft
2045 Morse Road, Building C
Columbus, OH 43229-6693

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Ms. Mia Kannik
Program Manager, Ohio Dam Safety Program
ODNR Division of Water Resources
2045 Morse Road, Building B
Columbus, OH 43229-6693

Mr. Michael Greenlee
Fish Management Supervisor
ODNR Division of Wildlife
360 E. State Street
Athens, OH 45701

Mr. Steve Holland
Office of Coastal Management
Ohio Department of Natural Resources
105 West Shoreline Drive
Sandusky, OH 44870

Ms. Sarah Tebbe
State Headquarters
Ohio Department of Natural Resources
2045 Morse Road, Building G
Columbus, OH 43229

District 4, Southeast Ohio
Ohio Department of Natural Resources
360 E. State Street
Athens, OH 45701

Ohio Environmental Council
1145 Chesapeake Avenue, Suite 1
Columbus, OH 43212

Mr. Craig Butler
Ohio Environmental Protection Agency
2195 Front Street
Logan, OH 43138

Mr. Harry Kallipolitis
401 WQC/Storm Water Manager
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, OH 43215

Mr. Sam Dinkins
Technical Program Manager
Ohio River Valley Water Sanitation Commission (ORSANCO)
5735 Kellogg Avenue
Cincinnati, OH 45230

Ms. Krista Horrocks
Ohio History Center
State Historic Preservation Office
800 E. 17th Avenue
Columbus, OH 43211

Hon. Jay Edwards
District 94
The Ohio House of Representatives
77 S. High Street, 11th Floor
Columbus, OH 43215

Mr. Bob Peterson
Ohio Senate District 17
The Ohio Senate
Senate Building
1 Capitol Square, 1st Floor
Columbus, OH 43215

Mr. Kent Leonhardt
Commissioner
West Virginia Department of Agriculture
1900 Kanawha Boulevard E.
State Capitol, Room E-28
Charleston, WV 25305-0170

Mr. Brian Bridgewater
401 Certification Program Manager,
Division of Water and Waste Management
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Randall Reid-Smith
The Culture Center
West Virginia Division of Culture and History
1900 Kanawha Boulevard E.
Charleston, WV 25305

Mr. Danny Bennett
West Virginia Division of Natural Resources
738 Ward Road
Elkins, WV 26241

Mr. Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Ms. Barbara Sargent
Environmental Resources Specialist
West Virginia Division of Natural Resources
PO Box 67
Elkins, WV 26241-3235

Local Governments

Mr. Don Anderson
Mayor
City of Pomeroy
660 E. Main Street, #A
Pomeroy, OH 45769

Meigs County Commissioners
Meigs County
100 E. Second Street
Pomeroy, OH 45769

Mr. Steve Jenkins
Administrator
Meigs Soil and Water Conservation District
113 East Memorial Drive, Suite D
Pomeroy, OH 45769

Mr. Sam Anderson
Mayor
Town of Hartford
PO Box 96
Hartford, WV 25247

Ms. Roberta Hysell
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Greg Kaylor
Mayor
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Michael Gerlach
Mayor
Village of Middleport
659 Pearl Street
Middleport, OH 45760

Mr. J. Scott Hill
Mayor
Village of Racine
405 Main Street
PO Box 399
Racine, OH 45771

Tribes

Absentee Shawnee Tribe of Oklahoma
2025 South Gordon Cooper
Shawnee, OK 74801

Mr. Kim Penrod
Director, Cultural Resources/106 Archives, Library and Museum
Delaware Nation
31064 State Highway 281
PO Box 825
Anadarko, OK 73005

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Delaware Tribe of Indians
5100 Tuxedo Blvd.
Bartlesville, OK 74006

Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Eastern Shawnee Tribe of Oklahoma
PO Box 350
Seneca, MO 64865

Miami Tribe of Oklahoma
PO Box 1326
Miami, OK 74355

Dr. Andrea Hunter
Director, THPO
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Mr. James Munkres
Archaeologist
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Seneca-Cayuga Nation
23701 S. 655 Road
Grove, OK 74344

Shawnee Tribe
PO Box 189
29 S. Hwy 69A
Miami, OK 74355

Non-governmental Organizations

Mr. John Seebach
American Rivers
1104 14th St NW, Suite 1400
Washington, DC 20005

Mr. Kevin Richard Colburn
National Stewardship Director
American Whitewater
PO Box 1540
Cullowhee, NC 28779

Nature Conservancy
6375 Riverside Drive, Suite 100
Dublin, OH 43017

Mr. Richard Cogen
Executive Director
Ohio River Foundation
PO Box 42460
Cincinnati, OH 45242

Yayac, Maggie

Subject: FW: Racine Hydro Recreational Study

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH [mailto:Steve.Jenkins@oh.nacdnet.net]
Sent: Wednesday, August 14, 2019 4:21 AM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: RE: Racine Hydro Recreational Study

Good to hear Danielle, thank you.

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

From: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Sent: Tuesday, August 13, 2019 5:10 PM
To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: Racine Hydro Recreational Study

Hi Steve,

I actually just checked our records and I do see that there have been a few hardcopy surveys completed, so that was an incorrect statement in the progress report and will be updated in the next progress report. I apologize for the confusion.

You are definitely on our list of people that we would like to interview in Q3 and we will get in touch with you soon regarding potential dates/times for an interview.

Thanks for your feedback and we will be in touch with you soon!

Danielle Hanson
M 315.729.4745

hdrinc.com/follow-us

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH [mailto:Steve.Jenkins@oh.nacdnet.net]
Sent: Tuesday, August 13, 2019 1:57 PM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: Racine Hydro Recreational Study

Hi Danielle,

I read through the progress report with much interest, but am a little concerned about one item in the report. I fish at the Racine Dam quite frequently and did complete a hard copy recreational survey and placed it in the box at the top of the steps. Not sure why it was not collected unless someone took it out and threw it in the nearby trash can. I will complete another one and leave it in the box and will fill out the online version as well.

I have met with and talked to Jon Magalski several times about the improvements needed for the fishing access. I am one of numerous local “regulars” that fish at Racine Hydro and we all agree there needs to be some much needed improvements made since this will probably be our only opportunity to get them done for the next 40-50 years.

I am requesting and looking forward to being interviewed in Q3 as part of the Recreational Study. If you are the responsible person, please let me know when the interview process starts so I can schedule a date and time.

Thank you!

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

Telephone Memo

To: Public Files

From: Aaron Liberty, Federal Energy Regulatory Commission

Docket: P-2570-032

Project: Racine Hydroelectric Project

Date: August 13, 2019

Subject: U.S. Fish and Wildlife Service's August 9, 2019 Letter

On the morning of August 13, 2019, Mr. Aaron Liberty of FERC's Division of Hydropower Licensing called Mr. Richard McCorkle of the U.S Fish and Wildlife's (FWS) Pennsylvania Field Office in State College, PA. The purpose of the call was to discuss a letter FWS filed with the Commission on August 9, 2019. In this letter, FWS requested that the Commission reconsider the study plan determination's approved methodology for AEP Generation Resources, Inc.'s (AEP Generation) proposed mussel survey at the Racine Hydroelectric Project (project).

Mr. Liberty first inquired as to whether Mr. McCorkle was familiar with the Integrated Licensing Process (ILP), specifically the formal dispute resolution process of the ILP. Mr. McCorkle responded that he was familiar with the ILP and the dispute resolution process. Mr. Liberty stated that the formal dispute resolution process was the appropriate avenue to raise disputes with respect to studies pertaining directly to FWS' authority under section 18 of the Federal Power Act. However, Mr. Liberty informed Mr. McCorkle that the deadline to file for formal dispute resolution had passed and that current Commission policy is to refrain from considering modifications to the study plan determination after this deadline has passed. Mr. McCorkle stated that FWS was hesitant to file for dispute resolution for fear it would delay the process moving forward. Mr. McCorkle also stated that portions of the study plan determination were confusing, as further detailed in their August 9, 2019 letter. Mr. Liberty reminded Mr. McCorkle that the ILP does provide an opportunity to consider the need for study modifications or new studies at the Initial Study Report phase of the ILP and that the mussel survey methodology could be revisited at that time.

Mr. Liberty also noted that there appears to be some confusion in the record regarding which state water quality certifying agency (i.e., Ohio Environmental Protection Agency or West Virginia Department of Environmental Protection) has authority under section

401(a) of the Clean Water Act (CWA) to issue a water quality certification for the project. Mr. Liberty explained that under the CWA, only the state where the discharge from a project will originate has the authority to act on a water quality certification request. Because the point of discharge for the Racine Hydroelectric Project lies completely in the State of Ohio, Mr. Liberty explained that Ohio is the only state from which certification would be required under section 401(a) of the CWA. Mr. Liberty noted that this issue was explained in the revised scoping document issued for the project on December 12, 2018. Mr. McCorkle stated he would contact the West Virginia Department of Environmental Protection to explain this issue. Mr. Liberty added that any further questions regarding this issue could be directed to him.

On the afternoon of August 13, 2019, Mr. McCorkle called Mr. Liberty to remind him of AEP Generation's letter filed with the Commission on May 28, 2019. Mr. McCorkle stated that FWS understood this letter to mean that AEP Generation was committing to the amended mussel survey methodology put forth by FWS and West Virginia DNR as a compromise to their previously requested methodology. Mr. McCorkle stated that this commitment from AEP Generation to conduct the amended survey methodology further contributed to their decision to not file for formal dispute resolution. Mr. Liberty encouraged FWS to reach out to AEP Generation to get clarification on the specific methodology AEP Generation was committing to in their May 28, 2019 letter.

Yayac, Maggie

Subject: FW: [EXTERNAL] recreation study plan

From: Tornes, Angela <angie_tornes@nps.gov>
Sent: Thursday, August 22, 2019 5:55 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] recreation study plan

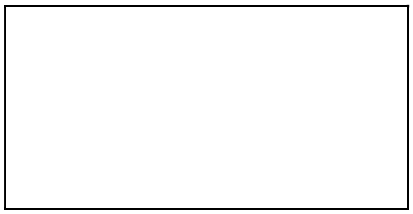
Hello Jonathan,

I've reviewed the recreation section of your Racine quarterly study report which I found very useful. I'd appreciate your sending a copy of the proposed/approved recreation study plan as well as learning the impetus behind it: does AEP routinely conduct such studies or were specific elements requested by others?

Thank you. I'll look forward to hearing from you.

Angie Tornes **National Park Service**
Rivers,Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager
Hydropower Assistance Program, Midwest Region Manager

(414) 297.3605 **desk** (414) 944.3957 **fax**
626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202
RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

August 22, 2019

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-11.2
888 First St., NE
Washington, DC 20426

RE: Racine Hydroelectric Project (FERC No. 2570-032) Study Plan Determination; Applicant's Proposed Fisheries Study Plan, American Eel Surveys

Dear Secretary Bose:

The U.S. Fish and Wildlife Service (Service) has received proposed sampling methods from American Electric Power's (Applicant) consultants, EnviroScience and HDR, outlining their proposed methods for American eel (*Anguilla rostrata*) surveys in the vicinity of the Racine Hydroelectric Project (Project). The proposed methods (attached) do not reflect the Service's most recent recommendations, nor will they achieve the objectives outlined in the Federal Energy Regulatory Commission's (FERC) Study Plan Determination (SPD). Specifically, one of the FERC staff's stated objectives is characterizing "the relative abundance and distribution of American eels downstream of the project to determine the timing, magnitude, and duration of upstream eel migration periods at the Racine Locks and Dam." This objective cannot be achieved during only 3 days of sampling per season (spring and summer), as proposed by the Applicant, which is why the Service's most recent (July 1, 2019) recommendations (attached) were focused on installing temporary eel ramps in strategic locations. The eel ramps would include collection tanks which would be monitored at least a few days per week, and daily during hot weather. The timing of American eel upstream migration varies and occurs in pulses related to a variety of factors (e.g., flows, water temperature, lunar phase). Therefore, continuous monitoring is needed for the duration of the upstream migration season (late spring/summer to late summer/early fall).

The Service also provided preliminary recommendations on June 13, 2019 (attached), and recommended an iterative process for developing American eel survey methodologies, allowing time for input from experts with experience in appropriate methods for monitoring eels. It appears that the Applicant and their consultants may have been more focused on these preliminary recommendations than they were on the Service's final recommendations, provided on July 1, 2019.

The Applicant includes a map figure in their sampling methods showing locations for nine eel pots, but there is no mention of the use of eel pots in the description of proposed sampling methods. The Service recommended against the use of eel pots (see attached recommendations) because they require bait, and it is known that eels do not feed during migration and, therefore, are not attracted to bait and do not enter pots during migration in freshwater rivers. The proposed methods also include the use of fyke nets. The Service discussed this possible approach with the Applicant's consultant, but ultimately did not recommend this approach. American eel experts tested fyke nets where eels are relatively abundant, in the Potomac and Shenandoah Rivers, and determined that they were not effective for capturing eels. The Applicant intends to use the fyke net approach at four locations, including two locations during fall surveys (i.e., for downstream-migrating silver eels). It is the Service's opinion that none of the proposed methodologies for downstream-migrating silver eels will yield useful information. Therefore, as stated in our July 1 recommendations to the Applicant's consultant, the Service is not recommending any surveys for downstream-migrating eels, and we ask that the planned effort for this aspect of the study be reallocated to a more robust and expanded effort toward achieving the stated monitoring objectives for upstream-migrating eels.

Regarding the use of electrofishing, we note that FERC disagreed with the Service's position that this approach also is not effective. While electrofishing has been found to be effective for capturing eels in small streams, it is considered by American eel experts to be ineffective in large rivers, which is why the Service did not recommend this approach. While the Ohio River Valley Water Sanitation Commission (ORSANCO) navigation pool electrofishing efforts do occasionally document one or more eels, ORSANCO biologists have stated in communications to the Service that this approach on a river the size of the Ohio is not effective, and that eels are generally underrepresented (i.e., numbers of eels caught using this approach do not reflect their actual relative abundance). Daytime trawl surveys are even less likely to yield meaningful data for determining relative abundance and distribution, or timing, magnitude and duration of migration as stated in the study objectives, as eels tend to be inactive during the day, often partially burying themselves in the river substrate.

Regarding locations of traps (i.e., ramps to collection tanks), the Applicant's consultant previously stated that traps "will be placed near the base of the dam…" (see attached June 11 email correspondence). Siting ramps near the base of the dam is appropriate and is the Service's preferred approach, as this is where upstream migrating eels are likely to congregate. However, the Applicant's recently proposed methods do not propose any monitoring near the base of the dam, within the U.S. Army Corps of Engineers' restricted zone. We understand the Applicant's reluctance to conduct surveys within the restricted zone; however, eel ramps to collection tanks would not be installed within the river. Only the entrance to the ramp would be in the river. A ramp could be attached to the side of the powerhouse (e.g., in the area of the trash sluice) or placed on the river bank near the base of the dam on the east side of the powerhouse, with a collection tank located where it could be easily monitored on a daily basis, without needing to access the river. Initial setup of the ramp may require temporary access to the river, and an attraction flow and water supply to the collection tank will be needed. The Service has experience with this approach and would be happy to provide technical assistance.

If the Applicant proceeds with American eel surveys using the proposed methods, the Service will not consider negative results to be reflective of the actual status (i.e., absence or low relative abundance) of the species at the Project. Furthermore, in order to determine relative abundance, and timing, magnitude and duration of American eel upstream migration at the project, continuous monitoring should be conducted from late spring/early summer through late summer/early fall. In the recommendations the Service provided to the Applicant's consultant on July 1, 2019, the Service defined the monitoring season as June through at least July, and preferably including August. However, we have since reviewed the timing of migration on other rivers and have determined that eels may be captured during upstream migration as early as May 1 and as late as mid-September. Most of the 2019 upstream migration season has already been missed; therefore, a monitoring approach which meets the stated objectives should be implemented starting in May 2020 or when water temperature reaches 15 degrees Celsius, and extending through the summer and early fall, until water temperature falls below 10 degrees Celsius.

We would like to point out a typo in our recommendations regarding timing of downstream migrating silver eels. The Service stated in its July 1 recommendations to the Applicant's consultant that "we are not recommending any eel-specific surveys during the fall, winter or spring, when water temperature is below 10 degrees Celsius." We intended to say "…or when water temperature is below 10 degrees Celsius."

The timing of issuance of the SPD (May 13, 2019) was less than ideal, and did not allow an appropriate amount of time for discussions between the Applicant (and its consultants) and the resource agencies toward development of acceptable survey methodologies that could be finalized in time for the 2019 summer field season. The Service requests that FERC provide its determination as to whether or not the Applicant's proposed American Eel Sampling Methods will achieve the aforementioned objectives outlined by FERC staff in their SPD, and facilitate a discussion between the Service and the Applicant in order to reach agreement on appropriate methods to achieve those objectives. We also ask for FERC's support in postponing American eel monitoring until May 2020, to allow time for the Applicant and the resource agencies to reach agreement on appropriate methodologies.

Thank you for your consideration in this matter. If you have any questions regarding this matter, please contact Richard McCorkle of my staff at 814-206-7470.

Sincerely,

Sonja Jahrsdoerfer

Sonja Jahrsdoerfer
Project Leader

Attachments

Cc: Jacob Harrell, WVDNR
Jeff Hansbarger, WVDNR
Michael Greenlee, OHDNR

RACINE HYDROELECTRIC PROJECT (FERC NO. 2570-032)

AMERICAN EEL SAMPLING METHODS

Prepared by:
EnviroScience
Stow, Ohio
and
HDR
Syracuse, New York

AUGUST 2019

RACINE HYDROELECTRIC PROJECT (FERC NO. 2570-032)
AMERICAN EEL SAMPLING METHODS

TABLE OF CONTENTS

Section 1
Introduction

AEP Generation Resources, Inc. (AEPGR) has filed their Proposed and Revised Study Plans with the Federal Energy Regulatory Commission (FERC) as part of AEPGR's relicensing of the existing 47.5 megawatt (MW) Racine Hydroelectric Project (FERC No. 2570-032), hereinafter known as the Racine Project or Project. The Project includes a single development located on the Ohio River at Ohio River Mile (OHRM) 237.5 near the Town of Racine in Meigs County, Ohio. The Project is located at the U.S. Army Corps of Engineers' (USACE) Racine Locks and Dam and is operated in a run of river mode.

During the study planning process, AEPGR provided the opportunity for comments on the presented study plans. Comments relative to the Fisheries Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage were received from FERC, West Virginia Division of Natural Resources (WVDNR), and U.S. Fish and Wildlife Service (USFWS). These requests were re-affirmed in the FERC Study Plan Determination letter issued on May 13, 2019. The following methods have been developed to standardize the procedures for executing the American Eel Sampling portion of the Fisheries Survey.

Section 2
Survey Area

Surveys will be conducted in the Ohio River in proximity to the Racine Project seasonally at the following general locations:

Spring/Summer Sampling

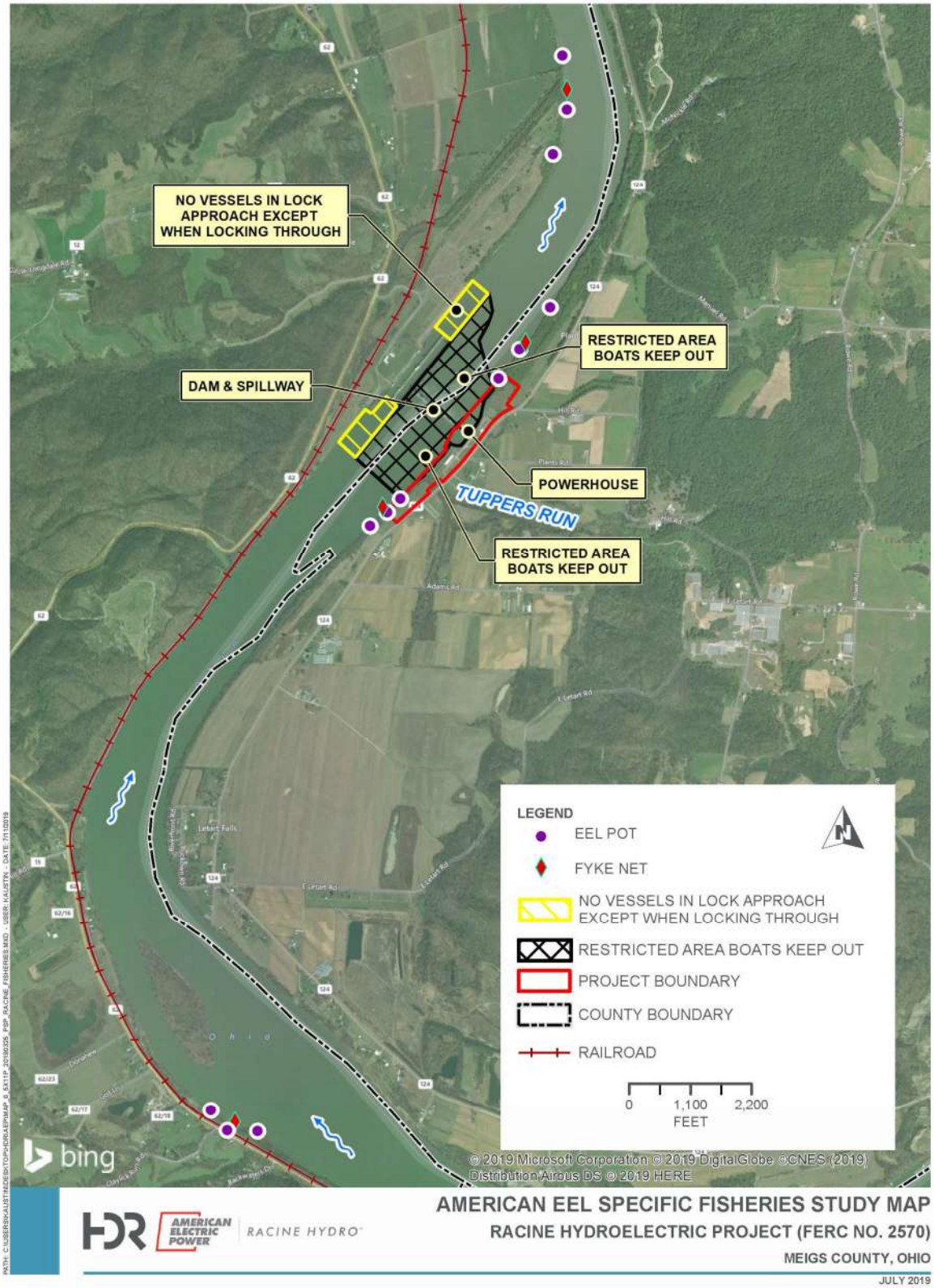
- Immediately downstream of the Restricted Area on the right descending bank.
- Approximately 2,000 feet downstream of the Racine Locks on the left descending bank.

Fall Sampling

- Immediately upstream of the Restricted Area on the right descending bank.
- At the mouth of Tombleson Run.

No surveys will take place within the USACE restricted areas due to safety concerns and unknown and unpredictable conditions caused by changes in generation discharge and dam operations. All surveys will take place outside of the upstream and downstream restricted areas as shown on Figure 2-1. Specific survey sites will be determined in the field, based on habitat distributions within given sampling zones. Each habitat type identified within each of the above areas will be surveyed according to Section 3 below.

FIGURE 2-1
AMERICAN EEL SURVEY AREAS AT THE RACINE PROJECT



Section 3
Methodology

A total of three seasonal surveys will be conducted for American Eel. These include a spring and summer survey in the downstream areas and a fall survey in the upstream area. Each sampling area will be sampled for three consecutive days during each seasonal survey event.

During the initial spring survey, specific survey sites will be determined based on habitat conditions observed by field personnel. Repeat-surveying, both within and between seasons, will take place at these locations to minimize variation in survey effort between survey events.

American Eel and by-catch fish collection and surveying will be performed in accordance with West Virginia Department of Natural Resources permit No. 2019.317; permitting the collection of fishes (including American Eel) from the Ohio River in the vicinity of the Project. All conditions of permit will be strictly adhered to.

3.1 Sampling Methods

Fyke Nets will be the primary sampling gears used in this survey. Boat Electrofishing and Missouri Trawls will be used for the general fisheries survey and may produce catches of American Eel which will be used to supplement the American Eel data set.

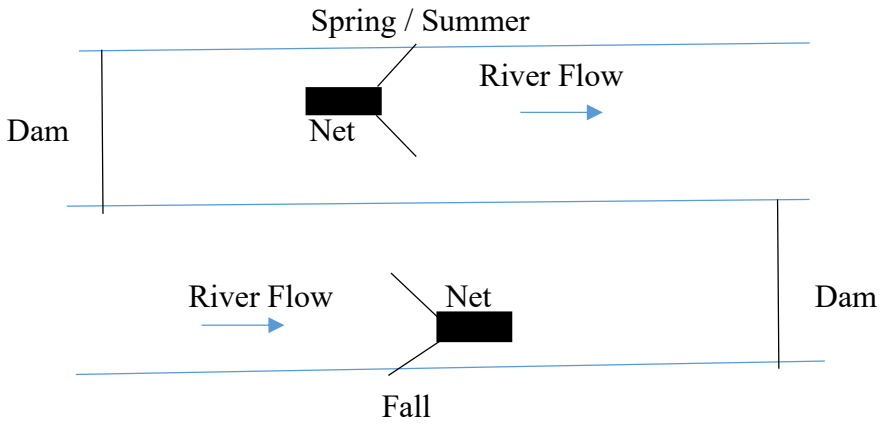
Methods for each of the sampling gears utilized for this survey are provided below.

3.1.1 Fyke Nets

Two fyke nets will be strategically placed at the bank, in likely eel migration paths during each of the survey events. The nets will be monitored for three nights during each sampling event. Each fyke net will consist of a net body and will also have two wings of 50 feet each feeding the net from each side (See Figure 3-1). The exact dimensions of the fyke net setup will be adjusted based on site-specific conditions. One net wing will extend from the shore at a slight angle downstream, while the other wing will extend at a slight downstream angle riverward. Upstream

migrating eels following the shore will be channeled into the trap at the end. The shore wing will end in the bank and set so the top is not submerged. The river side wing will also be set so that the top of the net is not submerged. Nets will be marked with a buoy so as to be identifiable by boat traffic. Additionally, flow attraction will be added through pump or electric propeller and will be used on each sampling event. The time, net position and artificial flow will be documented on the collection data sheet.

Figure 3-1. Racine Fyke Net Deployment Schematic



3.1.2 Boat Electrofishing

Boat electrofishing will be used as an ancillary surveying method for American Eel as part of the general fisheries collections and completed in the spring and fall. A 17-foot, aluminum Tracker Jon Boat (or equivalent) equipped with a Smith-Root 5.0 Gas Powered Pulsator (GPP) Portable Electrofisher (or equivalent) will be used. This boat will be equipped with a single steel ball suspended from the bow, serving as the anode, while the boat hull serves as the cathode. The three-person crew will consist of two bow netters and the boat captain. Fish will be netted with ¼-inch Duraframe dipnets attached to 8-foot fiberglass handles. Areas will be sampled primarily in an upstream to downstream direction to allow the boat to drift with stunned fish. This will increase the efficiency of capture for the sampling gear. Global Positioning System (GPS) points and GPS tracks of boat electrofishing routes will be recorded to identify specific sampling sites within each sampling zone. An Eagle FishElite 500C fish finder (or equivalent) with a GPS unit

will be used to track boat routes. Boat electrofishing efforts will be recorded in seconds per effort.

3.1.3 Mini-Missouri Trawl

Trawl netting will be used as an ancillary surveying method for American Eel as part of the general fisheries collections in the spring and fall. A small 8-foot modified Missouri trawl (trawl) with otter boards, a chain across the bottom opening, and floats across the top of the mouth, will be used to survey benthic habitats. The design has a coarse mesh in front of the fine mesh; this design protects the fine mesh net from damage and may entwine some specimens.

AEPGR will conduct daytime trawl net sampling at three locations within the study reach, two areas downstream from the Racine Locks and Dam, and one upstream. Two trawl events will be completed concurrent with the electrofishing survey during the Fall Event (2019) and Spring Event (2020). Specific sampling dates will be determined based on factors including (but not limited to) river flows, weather conditions, water temperatures, and safety of field staff and the general public. Surveys will be conducted using an 8-foot mini-Missouri trawl net for sampling small-bodied benthic fish (Herzog et al. 2009), or equivalent netting.

The length of time for each trawl will not exceed one minute so as to avoid potential impacts to mussel communities. The time for a trawling survey begins when the tow ropes become taut. For safety reasons, trawling surveys will not be conducted when the surface flows exceed 1m/sec. Tow ropes will be at least 100 m in length. Transects located on the right or left descending banks will be sampled within 30 m of the edge of the nearest bank. The time of each haul, approximate distance traveled, approximate distance from the closest bank, and the average depth of each haul will also be recorded.

3.2 Specimen Processing and Data Collection

All fish captured, regardless of sampling method, will be immediately placed into an aerated holding tank until processing. American Eel will be separated from other species of by-catch.

By-catch will be identified to the lowest possible taxon, counted and recorded. American Eel will be anesthetized using a prepared solution of clove oil with ethanol (94%): 9 parts ethanol + 1 part clove oil. This solution will be maintained in a dark bottle, preferably also in the dark. Clove oil will be mixed with alcohol before use due to its insolubility in cold (<15°C) water. This concentration should immobilize eels for approximately three minutes.

While eels are anesthetized, length will be measured to the nearest millimeter, weight will be measured to the nearest 0.1 grams and the anterior of the dorsal fin will be clipped with a standard hole-punch. A photo of each eel will be taken prior to placing the eel in a bucket of fresh water for recovery from the anesthetic. Eels will be marked with a hole-punch at each capture to identify an eel caught multiple times.

3.3 Water Quality

At each of the survey locations, water quality conditions will be measured *in situ*. A YSI EXO2 (or equivalent), calibrated to the manufacturer's instructions, will be used to record water quality measurements, including pH, dissolved oxygen (DO), temperature, and specific conductivity. These water quality samples are in addition to the water quality samples being collected for the specific water quality study. Turbidity of the impoundment will be determined by standard Secchi Disk. Sampling date, time, duration, location, and general observations of physical habitat characteristics—such as bottom substrate, cover type, and station depth—will also be recorded as available.

Section 4
Schedule

AEPGR will complete three seasonal American Eel surveys. Two events will be completed during 2019 and the third will be completed during 2020. These events are anticipated to occur during the summer of 2019 ("Summer Event" estimated July 29 to August 30), the "Fall Event" of 2019 [estimated September 21 to October 9], and the "Spring Event" of 2020 (estimated May 4 to May 22), as conditions allow.

This schedule will be adhered to as practical, but may be adjusted based on Project flows, gate operations, lockages, equipment, staffing, and scheduling needs.

Section 5
Data Analysis and Reporting

5.1 Data Management

As outlined in the Revised Study Plan (RSP), AEPGR will provide the results of this survey in a final survey report. The report will summarize the analysis of existing fisheries data and incorporate the specific American Eel data, as well as describe the overall results of fish sampling conducted in support of Project relicensing, including occurrence, composition, relative abundances, game species condition, distribution, and habitat use. The report will include details of all sampling efforts, in situ water quality conditions, and general habitat characteristics from each sampling site. AEPGR will include tabular data summarizing length, weight, and size class for fish collected at each sampling location. AEPGR anticipates that the Fisheries Survey study report will include the following elements:

- Project information and background
- Study area
- Methodology
- Study results
- Analysis and discussion
- Any agency correspondence and/or consultation
- Literature cited

APPENDIX A

AMERICAN EEL SURVEY FIELD DATA FORM

Field Team Names:					
Date:					
Weather Conditions:					
Temperature:	**At Start:**	**At End:**			
Moon Phase: waxing/waning, gibbous/crescent, first, full, new, last		**Stage @ USGS Gage/Powerhouse ;** Riverflows.net app			
Project Operations: (circle if in use)	Min Flow Valve Open @ Dam	Unit No. 3 (Min Flow Unit)	Unit No. 1	Unit No. 2	Spill over dam

Eel Pot No.	**Eel Pot Location**	**Date/Time**		**Total No. Captured**	**No. Recaptured (w marks)**	**Length (mm)**	**Weight (grams)**	**Lifestage(s)**
		Deploy	**Demob**					
1								
2								
3								
4								
5								
6								
7								
8								
9								

Notes:

McCorkle, Richard <richard_mccorkle@fws.gov>

Re: [EXTERNAL] AEP Racine Eel Surveys

1 message

McCorkle, Richard <richard_mccorkle@fws.gov> Mon, Jul 1, 2019 at 4:37 PM
To: Dave Czayka <dczayka@enviroscienceinc.com>
Cc: Jonathan M Magalski <jmmagalski@aep.com>, "Quiggle, Robert" <Robert.Quiggle@hdrinc.com>, Greg Zimmerman <gzimmerman@enviroscienceinc.com>, Jacob Harrell <Jacob.D.Harrell@wv.gov>, Michael.Greenlee@dnr.state.oh.us, John McCloskey <john_mccloskey@fws.gov>, "Hansbarger, Jeff L" <Jeff.L.Hansbarger@wv.gov>

Dave,

Sorry for the delay in getting back to you, but it took a while to get input from some key people. I don't want to discourage EnviroScience from implementing whatever methods you feel may be appropriate and worthwhile for trying to document eels, but the consensus from the experts and resource agency representatives I consulted with is that electrofishing for eels is unlikely to yield any results on such a big river. Regarding your proposed use or traps, as I previously stated, the consensus is that baited eel pots will not work, as baited pots are not effective in freshwater rivers. So the only trap approach that we recommend is the use of one or more temporary ramps leading to collection tanks. Of course this would be for documenting any yellow eels trying to move upstream. For the downstream migrating silver eels, unfortunately the consensus was that there is no specific methodology that is likely to work in a river the size of the Ohio. As you know, the occasional eel is captured/documented during the ORSANCO electrofishing surveys, so there is some potential for that when you are doing the general fisheries electrofishing surveys. Trawl surveys during the day are unlikely to document any eels, as eels tend to be inactive during the day, often partially burying themselves in the river substrate.

In summary, the ramp(s) leading to collection tank(s) approach is the only method worth trying, and only for unpstream migrating yellow eels. Please see the attached, revised recommendations reflecting this. They include updated details on the ramp approach from our engineers. I've also attached some photos of some ramps and related components to help you better visualize the approach, in case you haven't seen it. I would recommend the milieu ramp substrate or something similar, considering the probable size of yellow eels that would approach the Racine dam.

As I stated previously, the resource agencies would be interested in reviewing/discussing methods/plans as you get close to finalizing them, and I would be happy to try to answer questions or discuss further with you.

Rick

On Tue, Jun 11, 2019 at 2:59 PM Dave Czayka <dczayka@enviroscienceinc.com> wrote:

> Rick,
>
> It was nice speaking with you today on eel surveys as part of the Racine FERC relicensing. As a follow to our discussion , we will plan on electrofish and trap sampling on the downstream side of the dam for the spring and summer events and will focus upstream for the fall event. Traps will be placed near the base of the dam within a desired flow and structure requirements. If you could get back with me on preferred flow regimes and any baits that you would like us to use would be appreciated.
>
> Thanks,
>
> Dave
>
> **David Czayka**

Manager of Southeast Operations / Biologist

EnviroScience
Excellence In Any Environment

EnviroScienceInc.com—***Check out our new website & photo galleries!***

Office: (800) 940-4025 / **Cell:** (330) 606-5822 / **24h Emergency:** (888) 866-8540

1722 General George Patton Drive B100, Brentwood, TN 37027

--
Richard C. McCorkle
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
814-206-7470

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value."

- President Theodore Roosevelt

---

10 attachments

2ramps_2substrates_2tanks.JPG
107K

milieu_substrate.JPG
219K

spray_bar_screened_drain_collection_tank.JPG
94K

manifold_for_garden_hose_water_supply.JPG
236K

ramp_attraction_flow.JPG
118K

eel_ramps_enkamat_milieu_substrates.JPG
146K

ramp_support.JPG
142K

eel_ramp_photo.JPG
241K

P6071328.JPG
3904K

Eel_survey_recommendations.docx
196K

Recommendations for American Eel Survey Methodology at Racine Locks & Dam Hydroelectric Project

Upstream-Migrating Yellow Eels:

Baited Pots: The consensus is that eels do not enter baited pots in freshwater rivers (as they do in estuaries). Therefore, we do not recommend the use of baited eel pots.

Eel Traps (i.e., ramps to collection buckets/tanks): For the summer (June through at least July, and preferably including August), surveys for any upstream migrating yellow eels should utilize a ramp to a collection bucket or tank. This requires construction of one or more temporary eel ramps leading to collection buckets or tanks. If a collection bucket is used, it should be checked daily. If a larger tank is used, it should be checked at least every few days, or daily during hot weather.

The ramp or ramps should be constructed of rust-resistant metal (typically aluminum; e.g., cable trays often used) or UV-stable plastic; wood may be used for temporary ramps; cover ramp to minimize predation, but entrance should be open below high water level to allow entry at the water surface (examples/photos available).

Locate ramps in relatively quiescent areas below the dam (e.g., ungated section, or west side of powerhouse), or in similar areas where eels may congregate (e.g., locations where leakage and rock outcrops can concentrate eels attempting to move upstream). Below is an overhead view of the site showing a suggested location for a ramp.

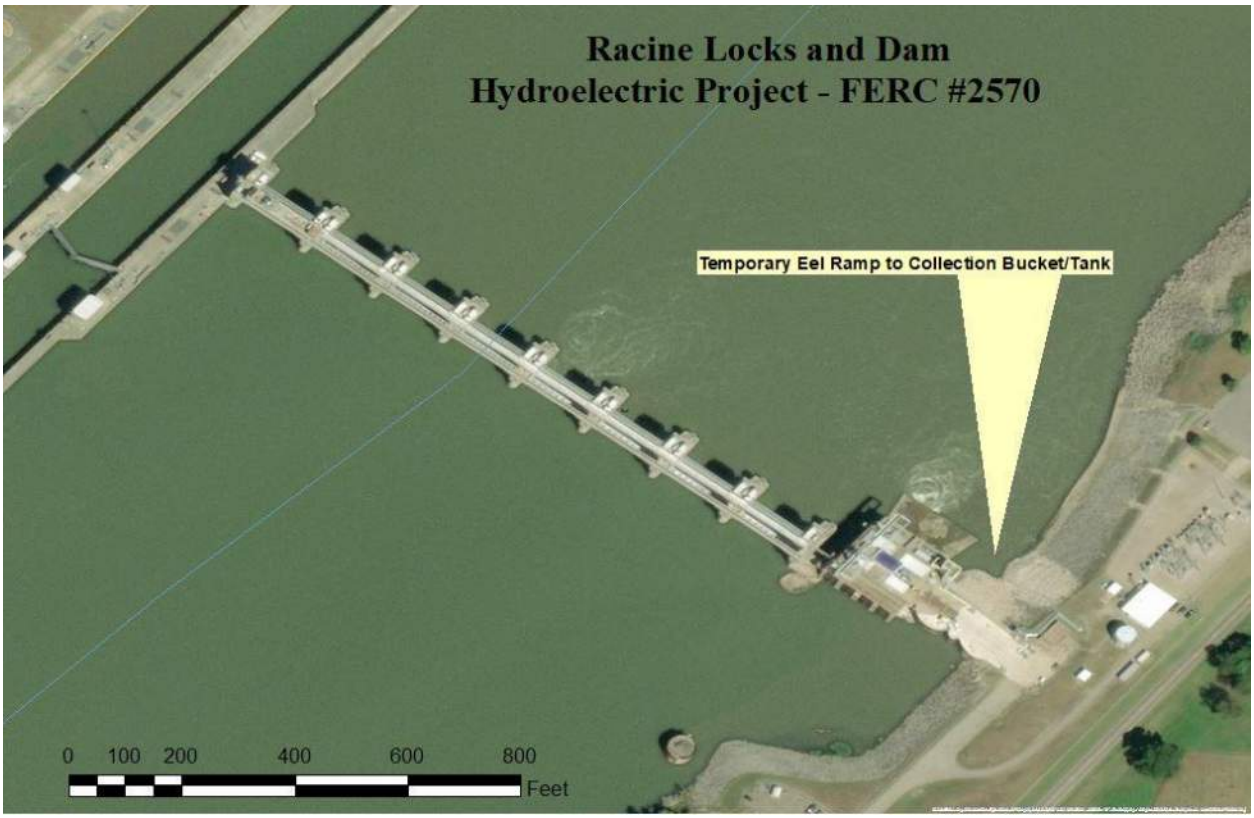


Figure 1. Recommended general location for a ramp-type eel trap.

Although eels are poor swimmers and avoid high velocity flows, attraction flow to the ramp should be greater than surrounding flow velocities; USFWS Engineering recommends 50 gallons per minute (gpm) flow for an 8-inch wide ramp on larger rivers, and 5 additional gpm for each additional inch in ramp width (USFWS 2019). An excerpt from the USFWS Fish Passage Engineering Design Criteria is provided below for additional details (e.g., ramp substrate). This information has been recently updated compared to what was previously provided. We recommend a ramp substrate allowing for eel size variability, but assuming eels in the range of ≥ 300 mm in length.

We also recommend that this be an iterative process, where you develop your proposed methodologies and provide an opportunity for USFWS, WVDNR and OHDNR to review and comment.

Electrofishing: This approach is known to miss eels as they are generally at the bottom of the water column and at the base of the dam. No eel-specific electrofishing surveys are recommended at this time, although the resource agencies are interested in any eels documented during the electrofishing surveys that are planned for characterizing the overall fish community.

Trawl surveys: Trawl surveys also tend to miss eels, especially when conducted during the daytime, when eels tend to be inactive and may be partially buried in the river substrate. Therefore, no eel-specific trawl surveys are recommended.

Nighttime red-light surveys: Nighttime red-light surveys (e.g., using red-light headlamps) along the face of the dam and edge of the river below powerhouse are unlikely to yield any positive results, given expected low densities of eels and probable turbid conditions at the site. Therefore, this survey approach is not recommended at this time.

Downstream Migrating Silver Eels:

Due to the size of the river and depth of the impoundment, the resource agencies have concluded that surveys targeting downstream-migrating silver eels are unlikely to be successful. Therefore, we are not recommending any eel-specific surveys during the fall, winter or spring, when water temperature is below 10 degrees Celsius. However, we are interested in any silver eels documented during the other planned general fisheries surveys.

Excerpt from USFWS Fish Passage Engineering Design Criteria (USFWS 2019; [Please note that some of the criteria below are not applicable to the recommended, non-volitional, trap-type ramp]):

Eel Ramps

As shown in Figure 2, conventional eel ramps consist of linear metal, plastic or wooden channels lined with climbing substrate and equipped with an attraction water delivery system.

Eels utilize the wetted substrate to propel themselves up the ramp. USFWS Engineering recommends the following design guidelines for volitional ramps:

- Capacity: maximum capacity of 5,000 eels/day per inch of ramp width; assumes mean eel size of 150 millimeter (mm) total length (TL);

width	8	10	12	14	16	18	*inches*
capacity	40,000	50,000	60,000	70,000	80,000	90,000	*eels/day*

- Entrance: The following specifications apply to the lowermost end of the eel ramp:
    - the entrance should match the surface upon which it rests; this may necessitate shaping the entrance lip to meet an irregular bedrock surface, or providing a level sill upon which the entrance invert may rest;
    - the climbing substrate should run down through the entrance to the minimum tailwater elevation (i.e., tailwater at the minimum design flow);
    - the entrance should be uncovered up to the maximum tailwater elevation (i.e., tailwater at the maximum design flow);
    - if appropriate, the entrance should be equipped with fencing, netting or other material to guard against predation by birds and carnivorous mammals.
- Exit: The following specifications apply to the upstream terminal end of the eel ramp:
    - *Elevation*: the ramp should accommodate fluctuations in headpond levels; exit should terminate above the maximum headpond elevation (i.e., impoundment elevation at the maximum design flow) ;
    - *Location*: the exit should be situated away from turbine intakes, gates, and spillways and other structures that may entrain eels;
- Ramp: The following specifications apply to the sloped ramp channel:
    - *Height*: 4 in. to 6 in. high;
    - *Width*: typically, 8 in. to 18 in. wide; wider ramps may be used provided they adhere to other criteria (e.g., depth of flow);
    - *Length*: dependent on slope; uninterrupted runs (i.e., without resting/turning pool) of sloped ramp should not exceed 10 vertical feet; total sloped length preferably less than 100 feet;
    - *Slope*: slopes must be 45 degrees or less;

- *Depth of Water*: ramp should remain wetted across the surface at all times; depth is dependent on ramp width, flow, slope and influenced by substrate; 1/16 in. to 1/8 in. of water should be maintained across a flat ramp;

- Resting Section: The following specifications apply to the resting area in the ramp. Turns in the ramp layout may serve as resting pools if they are designed to this same standard:

  - *Placement*: a minimum of one horizontal resting section (resting pool) per 10 vertical feet of ramp;

  - *Width*: equal to ramp width;

  - *Length*: equal to the pool width, or longer;

  - *Depth of Water*: at least 1 inch of water should be maintained in resting pools; to accommodate depth, the resting pools floors may need to be deeper than ramp sections to which they are connected.

Climbing Substrate

Ramps are equipped with roughened channel-bottom liners resembling gravel, geotextiles, fibrous material, bristles, studs, or other media that enhance the climbing ability of eels (Knights and White, 1998). Climbing substrates may be purpose-designed for eel passes (e.g., FISHPASS, Milieu, Inc., Berry and Escott Engineering) or manufactured materials intended for other purposes (Anwar, 2017, page 4). Based on a review of existing materials, the following describes the general trend between media type, size and spacing:

- Geotextile mats, netting, and other fibrous materials may be appropriate for glass eels and elvers in the 50 to 150 mm range;

- Bristle and brush substrates have the widest range of applicability with some dependence on bristle spacing; bristle spacing of 12 to 18 mm for eels in the 50 to 150 mm range, while spacing 18 to 24 mm for eels of 150 to 300 mm in length;

- Stud or type-type media with spacing of 30 to 80 mm is often appropriate for yellow eels of 150 mm in length or larger; increased spacing correlates to larger eel size;

- At sites with eels of varying size, a ramp may be outfitted with two or more longitudinally arranged substrate types.

Regardless, the substrate should be carefully matched to the size of eels at a specific site to avoid size-selectivity of the ramp. USFWS Engineering recommends that the site selection of substrates be made in close consultation with USFWS biologists.

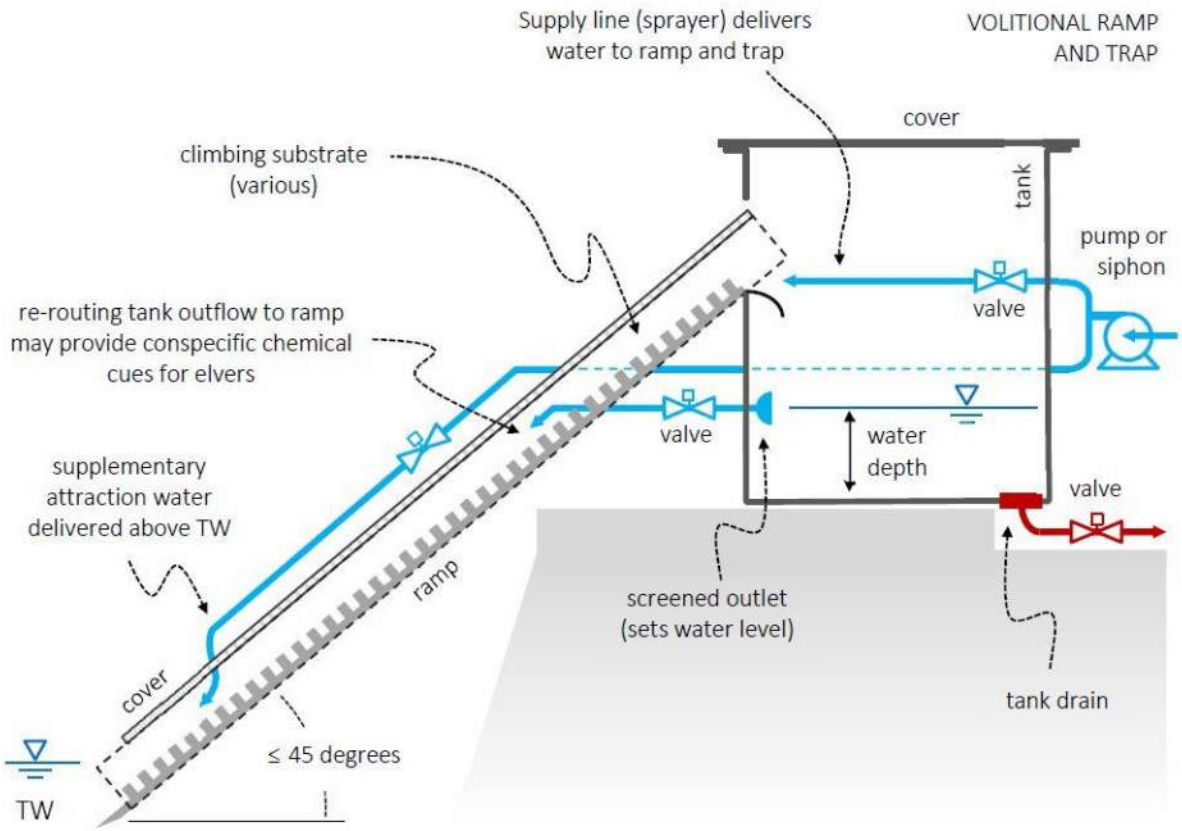


Figure 2. Illustration of an eel ramp leading to a collection tank.

Location

Typically, USFWS Engineering consults with USFWS biologists, state biologists, and other federal agency biologists to determine the best location of the eel ramp. Suitable locations may be found at spillways, dam abutments, or other locations where leakage and rock outcrops can concentrate eels attempting to move upstream. Locations in deep water or at spillways may also pass upstream migrating eels. If possible, installing temporary eel ramps in a variety of locations along the barrier is recommended in order to determine which of the locations attract the most eels. Nighttime surveys for migrating eels below dams can also be effective at identifying areas where eels are congregating. Locating eelways in or near technical fishways may benefit from conspecific chemical cues (i.e., odors).

Attraction Velocity

Eelways do not require the moderate-to-high attraction velocities characteristic of technical fishways. Eels do not possess the swimming capacity of salmon, shad and other anadromous species and high velocity attraction jets may actually inhibit eel passage. Ideally, the attraction velocity should be greater than the surrounding water velocity, but sufficiently limited to ensure smaller eels can successfully enter the ramp. To the degree possible, the attraction velocity should be unaffected by competing flows.

Eel Traps

Volitional ramps may terminate in a trap at larger dams and/or at sites where enumerating migrants is required as part of a monitoring plan. Generally, a barrier higher than 15-20 feet may require a trap or lift. USFWS Engineering endorses the following design guidelines for traps:

- Tank volume: approximately 350 eels per gallon (2,625 eels per ft3 or 92 eel per liter); minimum tank size is 15 gallons (2 ft3);
- Trap depth: minimum of 1 foot depth maintained in the tank at all times;
- Tank flow: minimum 1 gpm of fresh water (i.e., from source river); 0.5 gpm per additional ft3 of box volume (minimum 2 ft3 volume); adequate flow to maintain sufficient oxygen for maximum capacity and ambient water temperatures;

Literature Cited:

Anwar, Z. 2017. Effect of substrate roughness, slope, and body size on climbing behavior and performance of juvenile American eels (Anguilla rostrata), Master's Thesis. University of Massachusetts Amherst.

Knights, B. and White, E.M. 1998. Enhancing immigration and recruitment of eels: the use of passes and associated trapping systems. Fisheries Management and Ecology 5:459-471

USFWS (U.S. Fish and Wildlife Service). 2019. Fish Passage Engineering Design Criteria. USFWS, Northeast Region R5, Hadley, Massachusetts.

McCorkle, Richard <richard_mccorkle@fws.gov>

Re: [EXTERNAL] AEP Racine Eel Surveys

1 message

McCorkle, Richard <richard_mccorkle@fws.gov> Thu, Jun 13, 2019 at 4:34 PM
To: Dave Czayka <dczayka@enviroscienceinc.com>
Cc: Jonathan M Magalski <jmmagalski@aep.com>, "Quiggle, Robert" <Robert.Quiggle@hdrinc.com>, Greg Zimmerman <gzimmerman@enviroscienceinc.com>, Jacob Harrell <Jacob.D.Harrell@wv.gov>, Michael.Greenlee@dnr.state.oh.us

Dave,

I'm still waiting for input from some of my colleagues, but I do have some recommendations.

The consensus is that eels do not enter baited pots in freshwater rivers (as they do in estuaries). So it probably does not make sense to deploy baited eel pots. Nevertheless, attached is a draft document I put together that includes this approach, along with a list of baits, in case you want to try it. However, I would not want EnviroScience to expend time and money on this approach in lieu of more appropriate monitoring approaches for this particular situation.

For the spring and summer surveys for any upstream migrating yellow eels:

Electrofishing – this approach is known to miss eels as they are generally at the bottom of the water column and at the base of the dam. It is recommended that EF surveys include areas immediately below the dam, which will require permission from the U.S. Army Corps of Engineers (Corps) to enter the restricted zone (see attached). For permission, you would speak with Mr. Andrew Johnson, Wildlife Biologist with the Corps' Huntington District, and Mr. Travis Daugherty, Ranger for the Corps' Ohio River Navigation Project. Jon Magalski has already discussed this issue with these folks regarding water quality monitoring. I don't know if it's AEP's responsibility to get permission, or if you can seek it separately. If the latter, let me know and I can provide contact information - or Jon can probably provide it. Also focus on shallow areas along the shoreline.

Trawl surveys – same issue as above (i.e., may miss eels that are congregating at base of dam). Focus on shallow areas along shoreline.

Nighttime red-light surveys (e.g., using red-light headlamps) along face of dam and edge of river below powerhouse, spillway and locks (may not be effective in turbid conditions).

Strategically-placed fyke net with attraction flow. This approach is probably more appropriate for monitoring for downstream migrating silver eels in the fall. If this approach is tried for upstream migrating yellow eels, the fyke net should be placed as close to the dam or powerhouse as possible, in a quiescent area (i.e., not too close to powerhouse discharge or dam gate), and ideally would have added attraction flow (e.g., pump with tube providing small attraction flow).

Ramp to a collection bucket or tank. This is the preferred approach and is what I envisioned when we talked about "traps" (as opposed to eel pots), but requires construction of one or more temporary eel ramps leading to collection buckets or tanks (illustration included at the end of attached recommendations document).
- Ramps should be constructed of rust-resistant metal (typically aluminum; e.g., cable trays often used) or UV-stable plastic; wood may be used for temporary ramps; cover ramp to minimize predation, but entrance should be open below high water level to allow entry at the water surface (examples/photos available)
- Locate ramp in relatively quiescent area below dam (e.g., ungated section), or in similar areas where eels may congregate (e.g., locations where leakage and rock outcrops can concentrate eels attempting to move upstream)
- Although eels are poor swimmers and avoid high velocity flows, attraction flow to ramp should be greater than surrounding flow velocities; USFWS Engineering recommends 50 gallons per minute (gpm) flow for an 8-inch wide ramp on larger rivers, and 5 additional gpm for each additional inch in ramp width (USFWS 2019)

- See excerpt from USFWS Fish Passage Engineering Design Criteria (attached) for additional details (e.g., ramp substrate)

We can discuss the fall (downstream migrating silver eels) survey approaches later, but I've also included some initial thoughts on this in the attached draft recommendations document.

I also recommend that this be an iterative process, where you develop your proposed methodologies and provide an opportunity for USFWS, WVDNR and OHDNR to review and comment (Jacob Harrell and Mike Greenlee copied). That will give me more time to gather input from others. I wanted to get something to you now so you can start developing your plan and because I will be in the field a good chunk of next week.

Looking forward to further discussions and fine-tuning of methodologies.

Rick

On Tue, Jun 11, 2019 at 2:59 PM Dave Czayka <dczayka@enviroscienceinc.com> wrote:

> Rick,
>
> It was nice speaking with you today on eel surveys as part of the Racine FERC relicensing. As a follow to our discussion , we will plan on electrofish and trap sampling on the downstream side of the dam for the spring and summer events and will focus upstream for the fall event. Traps will be placed near the base of the dam within a desired flow and structure requirements. If you could get back with me on preferred flow regimes and any baits that you would like us to use would be appreciated.
>
> Thanks,
>
> Dave
>
> **David Czayka**
>
> Manager of Southeast Operations / Biologist
>
> EnviroScience
> Excellence In Any Environment
>
> **EnviroScienceInc.com**—***Check out our new website & photo galleries!***
>
> **Office:** (800) 940-4025 / **Cell:** (330) 606-5822 / **24h Emergency:** (888) 866-8540
>
> 1722 General George Patton Drive B100, Brentwood, TN 37027

--
Richard C. McCorkle

Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
814-206-7470

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased and not impaired in value."

- President Theodore Roosevelt

---

2 attachments

Racine Water Quality New Downstream Monitoring Location.pdf
561K

Recommendations for Conducting American Eel Surveys at Hydroelectric Dams.docx
62K

Recommendations for Conducting American Eel Surveys at Hydroelectric Dams

Upstream migrating elvers and/or yellow eels (surveys downstream of dam):

- Ramp to a collection bucket or tank
    - Ramps should be constructed of rust-resistant metal (typically aluminum; e.g., cable trays often used) or UV-stable plastic; wood may be used for temporary ramps; cover ramp to minimize predation but entrance should be open below high water level to allow entry at the water surface (examples/photos available)
    - Locate ramp in relatively quiescent area below dam (e.g., ungated section), or in similar areas where eels may congregate (e.g., locations where leakage and rock outcrops can concentrate eels attempting to move upstream)
    - Although eels are poor swimmers and avoid high velocity flows, attraction flow to ramp should be greater than surrounding flow velocities; USFWS Engineering recommends 50 gpm flow for an 8-inch wide ramp on larger rivers, and 5 additional gpm for each additional inch in ramp width (USFWS 2019)
    - See excerpt from USFWS Fish Passage Engineering Design Criteria (attached)

- Nighttime red-light surveys (e.g., using red-light headlamps) along face of dam and edge of river below powerhouse, spillway and locks (may not be effective in turbid conditions)

- Strategically-placed fyke net with attraction flow (probably more appropriate for monitoring for downstream migrating silver eels).

- Baited eel pots (similar to minnow traps): expert feedback thus far is that baited pots are not worth trying in freshwater river situations – the consensus is that eels do not enter baited pots in freshwater rivers. However, if one were to test the use of eel pots in a freshwater river situation, the following are possible baits listed, somewhat, in order of highest to lowest efficacy (most would need to be deployed in a nylon sock or mesh bag; fish needs to be fresh): crushed gravid female horseshoe crab, crushed male horseshoe crab, crushed blue crab or other crustaceans (e.g., Asian shore crab compared favorably to horseshoe crab in trials), crushed clams or mussels, chopped fish (e.g., bluegill, mackeral), canned catfood (oily) or sardines (in olive oil) with holes poked in it, worms/night crawlers (either in nylon sack or strung on a line across middle of pot), chicken legs/skin, smoked salmon, pork fat with some meat remaining, chicken liver, bread. Kepley Biosystems, Inc. has also been developing an artificial substitute bait (instead of horseshoe crab), but it has not been tested commercially yet (https://kepleybiosystems.com/). Pots should be set in the evening around dusk, not in the morning, and should be checked in the early morning before sunrise (eels begin to escape after sunrise). Although this approach is considered ineffective in freshwater rivers, if tested, strategic placement of pots inside USACE locks may be worth trying (would require permission from USACE).

- Electrofishing – this approach is known to miss eels as they are generally at the bottom of the water column. Also, when surveying near a dam, eels tend to be missed because they are congregating immediately below the dam where most elecrofishing efforts do not survey. It is recommended that EF surveys include areas immediately below dams, which may require special permission (does require permission/coordination at USACE dams). Also focus on shallow areas along shoreline.

- Trawl surveys – same issue as above (i.e., may miss eels that are congregating at base of dam). Focus on shallow areas along shoreline.

Downstream Migrating Silver Eels (surveys upstream of dam):

- Fyke net – should be placed in area of predominant downstream flow (e.g., on side of river near powerhouse intake).

- Electrofishing – not likely to be effective in a deep impoundment on a wide river, but focus effort along the shoreline on the side of the river where the powerhouse intake is located.

- Trawl survey – same as above – focus effort on powerhouse intake side of river

Literature Cited:

USFWS (U.S. Fish and Wildlife Service). 2019. Fish Passage Engineering Design Criteria. USFWS, Northeast Region R5, Hadley, Massachusetts.

Attachment 1

Excerpt from USFWS Fish Passage Engineering Design Criteria (USFWS 2019)

Types of Upstream Eel Passes

Technical upstream fishways, such as fish ladders and fish lifts, are often ineffective at passing juvenile eels and specialized passage structures for this species are needed (Atlantic States Marine Fisheries Commission, 2013, page 1). While eels may move through technical fishways, they generally do not do so in large numbers. Therefore, Engineering does not regard technical fishways (i.e., conventional fish ladders and fish lift) as preferred methods of passing eels.

Eel passes or eelways are specialized structures that provide a path over the dam for elvers and juvenile eels. An eel ramp is the most common technology and may terminate in a trap or provide volitional passage into the headpond. Other variants include the eel lift, the Delaware-style eel pass, the laterally sloped ramp, and the helical ramp.

Eel Ramps

Generally, eel ramps consist of linear metal, plastic or wooden channels lined with climbing substrate and equipped with an attraction water delivery system. Eels utilize the wetted substrate to propel themselves up the ramp. Engineering recommends the following design guidelines for volitional ramps:

- Capacity: maximum capacity of 5,000 eels/day per inch of ramp width; assumes mean eel size of 150 millimeter (mm) total length (TL);

width	8	10	12	14	16	18	*inches*
capacity	40,000	50,000	60,000	70,000	80,000	90,000	*eels/day*

- Construction Materials: ramps, pools, and supporting structural elements should be built of: a) rust-resistant metal (typically aluminum) or UV-stable plastic for permanent facilities; b) wood may be used for temporary ramps;

- Cover: to minimize predation, a fully secured, opaque cover on the entire unsubmerged length of ramp (and resting sections) is recommended; the cover should remain open at entrance below high water level to allow entry at the water surface;

- Entrance: the following specifications apply to the lowermost end of the eel ramp:

    - the entrance should match the surface upon which it rests; this may necessitate shaping the entrance lip to meet an irregular bedrock surface, or providing a level sill upon which the entrance invert may rest;

    - the climbing substrate should run down through the entrance to the minimum tailwater elevation (i.e., tailwater at the minimum design flow);

    - the entrance should be uncovered up to the maximum tailwater elevation (i.e., tailwater at the maximum design flow);

- Exit: the following specifications apply to the upstream terminal end of the eel ramp:

    - *Elevation*: the ramp should accommodate fluctuations in headpond levels; exit should terminate above the maximum headpond elevation (i.e., impoundment elevation at the maximum design flow) ;

    - *Location*: the exit should be situated away from turbine intakes, gates, and spillways and other structures that may entrain eels;

- Ramp: the following specifications apply to the sloped ramp channel:

    - *Height*: 4 in. to 6 in. high;

- *Width*: typically, 8 in. to 18 in. wide; wider ramps may be used provided they adhere to other criteria (e.g., depth of flow);
- *Length*: dependent on slope; uninterrupted runs (i.e., without resting/turning pool) of sloped ramp should not exceed 10 vertical feet; total sloped length preferably less than 100 feet;
- *Slope*: slopes must be 45 degrees or less;
- *Depth of Water*: ramp should remain wetted across the surface at all times; depth is dependent on ramp width, flow, slope and influenced by substrate; 1/16 in. to 1/8 in. of water should be maintained across a flat ramp;

- Resting Section: the following specifications apply to the resting area in the ramp. Turns in the ramp layout may serve as resting pools if they are designed to this same standard:
  - *Placement*: a minimum of one horizontal resting section (resting pool) per 10 vertical feet of ramp;
  - *Width*: equal to ramp width;
  - *Length*: equal to the pool width, or longer;
  - *Depth of Water*: at least 1 inch of water should be maintained in resting pools; to accommodate depth, the resting pools floors may need to be deeper than ramp sections to which they are connected.

Climbing Substrate

Ramps are equipped with roughened channel-bottom liners resembling gravel, geotextiles, fibrous material, bristles, studs, or other media that enhance the climbing ability of eels (Knights and White, 1998). Climbing substrates may be purpose-designed for eel passes (e.g., FISHPASS, Milieu, Inc., Berry and Escott Engineering) or manufactured materials intended for other purposes (Anwar, 2017, page 4). Based on a review of existing materials, the following describes the general trend between media type, size and spacing:

- Geotextile mats, netting, and other fibrous materials may be appropriate for glass eels and elvers in the 50 to 150 mm range;
- Bristle and brush substrates have the widest range of applicability with some dependence on bristle spacing; bristle spacing of 12 to 18 mm for eels in the 50 to 150 mm range, while spacing 18 to 24 mm for eels of 150 to 300 mm in length;
- Stud or type-type media with spacing of 30 to 80 mm is often appropriate for yellow eels of 150 mm in length or larger; increased spacing correlates to larger eel size;

- At sites with eels of varying size, a ramp may be outfitted with two or more longitudinally arranged substrate types.

Regardless, the substrate should be carefully matched to the size of eels at a specific site to avoid size-selectivity of the pass (NMFA, 2011b, Page 56). Engineering recommends that the site selection of substrates be made in close consultation with Service biologists.

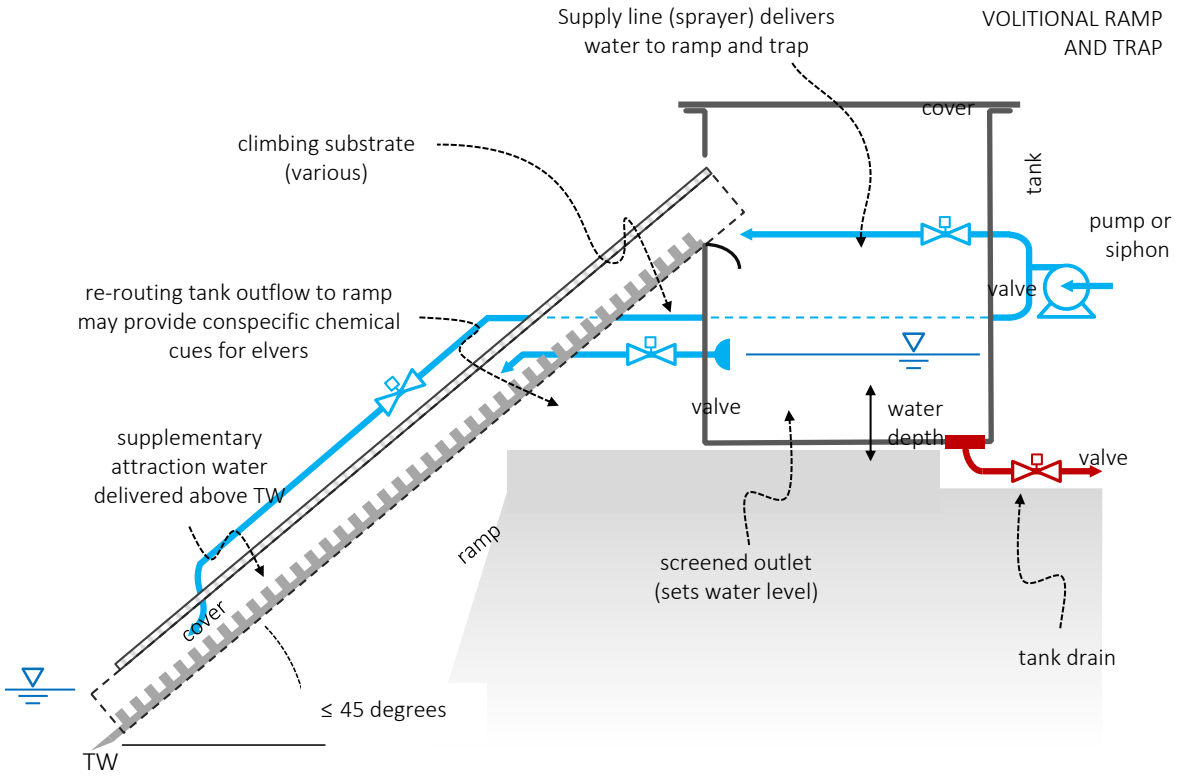
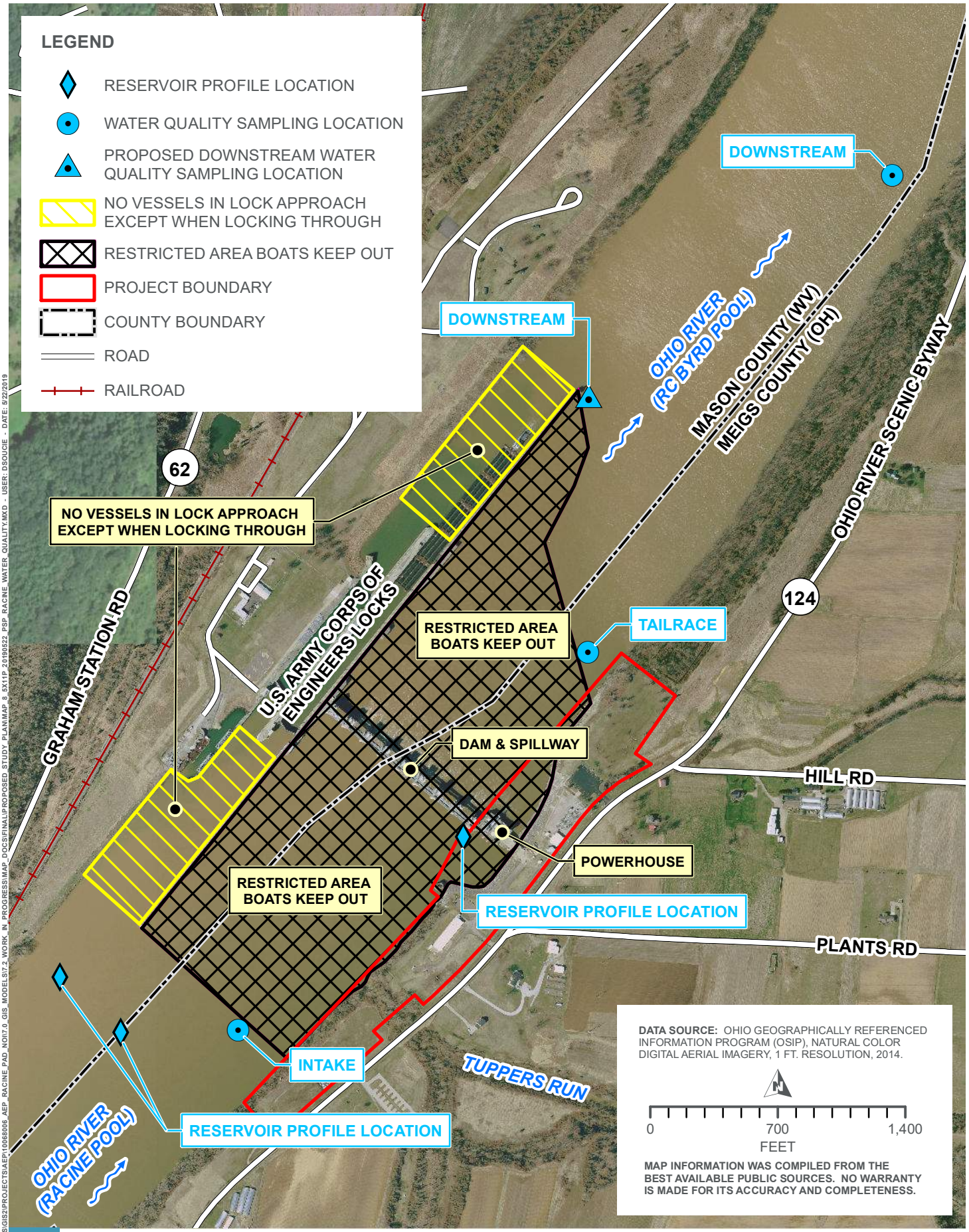


Figure 1: Conventional arrangement of an eel ramp and trap assembly



PATH: I:\PWME-INFS01\GIS\GIS2\PROJECTS\AEP\10068006_AEP_RACINE_PAD_NOI\7.0_GIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\FINAL\PROPOSED_STUDY_PLAN\MAP_8_8X11P_20190822_PSP_RACINE_WATER_QUALITY.MXD - USER: DSOUCIE - DATE: 8/22/2019

WATER QUALITY STUDY MAP

RACINE HYDROELECTRIC PROJECT (FERC NO. 2570)

MEIGS COUNTY, OHIO

MAY 2019

Yayac, Maggie

Subject: FW: [EXTERNAL] recreation study plan

From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Friday, August 23, 2019 1:07 PM
To: Tornes, Angela <angie_tornes@nps.gov>
Subject: RE: [EXTERNAL] recreation study plan

Hi Angela,

Thank you for reaching out to me. The final and FERC approved recreational study plan can be found in the Revised Study Plan document at the link below. This plan was developed based on our consultants experience in other relicensing proceedings, FERC's comments and expectations, and other stakeholder comments. Recreation studies are more or less a given in any hydro relicensing.

I hope this helps. Please let me know if you have any additional questions. Thanks again, have a nice weekend….Jon

http://aephydro.com/HydroPlant/Racine

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY™

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Tornes, Angela <angie_tornes@nps.gov>
Sent: Thursday, August 22, 2019 5:55 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] recreation study plan

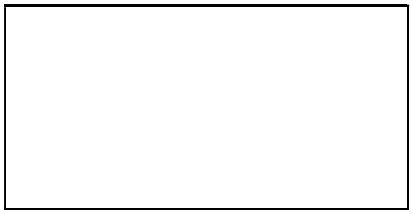
Hello Jonathan,

I've reviewed the recreation section of your Racine quarterly study report which I found very useful. I'd appreciate your sending a copy of the proposed/approved recreation study plan as well as learning the impetus behind it: does AEP routinely conduct such studies or were specific elements requested by others?

Thank you. I'll look forward to hearing from you.

Angie Tornes **National Park Service**
Rivers,Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager
Hydropower Assistance Program, Midwest Region Manager

(414) 297.3605 **desk** (414) 944.3957 **fax**
626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202
RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro



DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
District 1
P.O. Box 99
1110 Railroad Street
Farmington, West Virginia 26571-0099
Telephone (304) 825-6787
Fax (304) 825-6270

Jim Justice
Governor

Stephen S. McDaniel
Director

August 20, 2019

Electronic File

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Racine Hydroelectric Project (FERC no. P-2570) American Eel Sampling Methods

Dear Secretary Bose:

Thank you for allowing the West Virginia Division of Natural Resources, Wildlife Resources Section (WRS) the opportunity to provide comments with regards to the referenced American Eel (*Anguila rostrata*) Sampling Methods (AESM) as provided to our agency by EnviroScience on behalf of AEP Generation Resources, Inc. (AEPGR) as per their required suite of relicensing studies for the Racine Hydroelectric Project (Project), FERC No. 2570. According to the Study Plan Determination submitted by the Federal Energy Commission (FERC) the stated objectives of the American eel survey is to determine the relative abundance and distribution of upstream migrating eels at the Project. The AESM was provided to WRS on August 15, 2019. The WRS, after careful review of the AESM, has considerable concerns over the AESM as presented in achieving the stated objectives and offers the following comments for your consideration:

Section 2 – Survey Area

Descriptions of the survey area includes the sampling of downstream migrating eels. Such sampling is not a defined objective of the American eel survey as described within FERC's Study Plan Determination. It had previously been relayed to EnviroScience that the focus of the American eel sampling should be on upstream migrating eels as oppose to the downstream migrating eels, in part due to the inherently difficult task of obtaining an adequate sample of downstream migrating eels and also due to the objectives within the Study Plan Determination. The WRS would thus recommend that efforts to sample the downstream migrating eel communities by the methodology proposed be abandoned and reallocated to a more robust and expanded effort for the upstream migrating eels.

Figure 2-1: American Eel Survey Areas at the Racine Project

The map of survey area locations provided for in the AESM includes eel pot locations. The use of eel pots is not mentioned anywhere within the methodology and thus contributes to a level of confusion concerning the overall plan and direction of this proposed American eel sampling study. Further, it was previously relayed to EnviroScience that eel pots are generally ineffective measures at capturing eels within freshwater environments. Eel pots are better suited for estuarine or saltwater conditions.

Section 3 – Methodology

The WRS does not consider a sampling period of three consecutive days to be an adequate sampling period in obtaining an accurate representation of American eels within the system. The movement of eels is largely dependent on a variety of factors (temperature, discharge, lunar phase), and if those particular conditions aren't meant during the period of time when the sampling is to occur, then very likely the sample will under-represent the species. To meet the goals and objectives of the proposed American eel study, a more robust and broader period of time should be sampled. This would better be accomplished through a differing methodology than the one proposed within the AESM. As proposed, sampling would occur through the use of two fyke nets. Fyke nets have demonstrated in studies to be a sufficient sampling device for American eels, though those studies have primarily been relegated to conditions unfamiliar to the Racine Project area (estuary conditions, river mouths). It is the experience of the WRS and generally accepted amongst American eel experts, that fyke nets are ineffective when sampling large river bodies, such as the Ohio River, where tidal influence is not observed. This was expressed to EnviroScience in previous exchanges. A more adequate and preferred sampling method would be utilizing one or more eel ramps to a collection device, as was presented to EnviroScience by the resource agencies. Such an eel ramp could be temporarily affixed to either the bank or the powerhouse structure in an area with relatively calm water. These ramps could be deployed for long periods of time coinciding with the likely migration of American eels.

The collection device could be easily checked on a daily basis by either EnviroScience or staff members of AEPGR.

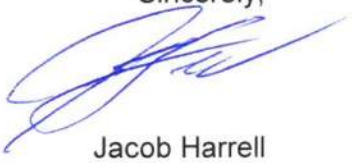
Section 4 – Schedule

AEPGR, through EnviroScience, has proposed an expediated schedule for the American eel surveys which leaves very little time for review by the WRS or other resource agencies. This schedule would include three sampling events with the first sampling event occurring within the next one to two weeks. At a minimum, thirty days of pre-notification should be awarded to the resource agencies to allow for a complete review of the proposed study in determining if the methodology has merit. Upon review of relevant research papers and extensive consultation with experts on the subjects of eels, the WRS has concluded that EnviroScience has not prepared an adequate study proposal that would sufficiently meet the goals and objectives of the required American eel survey as directed by FERC in its Study Plan Determination. Therefore, the WRS requests that the sampling be postponed until consensus between the resource agencies and AEPGR/EnviroScience can be met concerning the methodology to be employed.

The WRS has significant concerns regarding the American eel study as proposed within the AESM and does not consider the AESM adequate in achieving the stated goals of such survey. The WRS strongly suggests that the use of fyke nets be abandoned and replaced by the preferred methodology of eel ramps to a collection device. The study period should be extended to cover the entire migrating season for American eels with a primary focus on upstream migrating eels. Further, the WRS requests that the American eel study to be postponed until May 2020 to allow for more thoughtful discussion on the effort and to allow for a more complete sampling period. The WRS appreciates any support by FERC with regards to this matter.

Thank you again for allowing the WRS the opportunity to provide comments and for your consideration in this matter. If you have questions regarding this letter please contact me by telephone at (304)825-6787, or by email at Jacob.D.Harrell@wv.gov.

Sincerely,



Jacob Harrell
Hydropower Coordination Biologist

Cc: Jonathan Magalski, AEP Generation Resources
Rick MacCorkle, USFWS
John McClosky, USFWS
Michael Greenlee, ODNR

Jeff Hansbarger, WVDNR
Danny Bennett, WVDNR

Yayac, Maggie

Subject: FW: Progress Report

From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Friday, August 30, 2019 12:57 PM
To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: Progress Report

Hi Steve,

Please accept my apology for responding to you so late. I did follow up on this and there have been some hard copy surveys retrieved from the box onsite, it just didn't make the progress report. That said, the numbers have been low.

We will be in touch in the near future to coordinate the interviews that have been discussed in the past. Stay tuned. Have a great weekend, weather looks nice so I hope you manage to get a few lines wet….Jon

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Sent: Tuesday, August 13, 2019 4:40 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] Progress Report

Hi Jon,

I read through the progress report with much interest. The report stated no recreational surveys had been completed or received, but I filled one out the first day I saw them and put it in the box at the top of the steps. Not sure why it would not have been collected unless someone took it out and threw it in the trash can. I will fill out another one the next time I go there.

I know one other guy took a survey, but I'm not sure he ever completed it. I will ask him next time I see him.

Is there any reason to fill out more than one if the same info will be put on it each time?

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769

(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

Yayac, Maggie

Subject: FW: Racine Hydro Recreational Study

From: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Sent: Friday, August 30, 2019 3:46 PM
To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: Racine Hydro Recreational Study

Hi Steve,

I just wanted to follow up with you regarding the stakeholder interviews that we will be conducting as part of the Recreation Study for the Racine Project. In addition to yourself, are there other individuals or organizations that you would recommend that would be beneficial for us to interview as well? Any information or input you are able to provide is greatly appreciated.

Thank you and have a great holiday weekend!

Danielle Hanson
M 315.729.4745

hdrinc.com/follow-us

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH [mailto:Steve.Jenkins@oh.nacdnet.net]
Sent: Wednesday, August 14, 2019 4:21 AM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: RE: Racine Hydro Recreational Study

Good to hear Danielle, thank you.

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

From: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Sent: Tuesday, August 13, 2019 5:10 PM
To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: Racine Hydro Recreational Study

Hi Steve,

I actually just checked our records and I do see that there have been a few hardcopy surveys completed, so that was an incorrect statement in the progress report and will be updated in the next progress report. I apologize for the confusion.

You are definitely on our list of people that we would like to interview in Q3 and we will get in touch with you soon regarding potential dates/times for an interview.

Thanks for your feedback and we will be in touch with you soon!

Danielle Hanson
M 315.729.4745

hdrinc.com/follow-us

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH [mailto:Steve.Jenkins@oh.nacdnet.net]
Sent: Tuesday, August 13, 2019 1:57 PM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: Racine Hydro Recreational Study

Hi Danielle,

I read through the progress report with much interest, but am a little concerned about one item in the report. I fish at the Racine Dam quite frequently and did complete a hard copy recreational survey and placed it in the box at the top of the steps. Not sure why it was not collected unless someone took it out and threw it in the nearby trash can. I will complete another one and leave it in the box and will fill out the online version as well.

I have met with and talked to Jon Magalski several times about the improvements needed for the fishing access. I am one of numerous local "regulars" that fish at Racine Hydro and we all agree there needs to be some much needed improvements made since this will probably be our only opportunity to get them done for the next 40-50 years.

I am requesting and looking forward to being interviewed in Q3 as part of the Recreational Study. If you are the responsible person, please let me know when the interview process starts so I can schedule a date and time.

Thank you!

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

Yayac, Maggie

Subject: FW: Racine Hydro Recreational Study

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Sent: Tuesday, September 3, 2019 8:15 AM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Cc: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] RE: Racine Hydro Recreational Study

Hi Danielle and Jon,

Hope you both had a good holiday weekend. It's good to hear from you.

There are 4 or 5 guys that I regularly fish with at Racine when the hydro is running. Over the last year I have talked to most of them and we all pretty much agree on the improvements we think need to be made that would greatly enhance the fishing access and make it much safer to fish there. I can give you their names, and probably some phone numbers, when the time comes to schedule interviews, if you would like.

Some of them are retired and could/would probably be willing to be interviewed. There are some that work and probably would not be able to schedule a daytime interview, if daytime is the projected time of scheduling interviews.

You can let me know when the interview time gets near. In the meantime, if the hydro gets up and running, I can probably talk to some, or all of them, about their willingness to be interviewed. I haven't been fishing at the hydro for quite a while due to it being shut down, and neither have any of the guys that regularly fish there. The fishing just isn't very good when the hydro is not running. So I haven't really talked to most of them for a while, but I do have a few of their phone numbers.

I haven't checked for a couple weeks to see if the hydro is running. Is it? If not, any idea when it is scheduled to be back up and running full time?

Thanks,

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

From: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Sent: Friday, August 30, 2019 3:46 PM

To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: Racine Hydro Recreational Study

Hi Steve,

I just wanted to follow up with you regarding the stakeholder interviews that we will be conducting as part of the Recreation Study for the Racine Project. In addition to yourself, are there other individuals or organizations that you would recommend that would be beneficial for us to interview as well? Any information or input you are able to provide is greatly appreciated.

Thank you and have a great holiday weekend!

Danielle Hanson
M 315.729.4745

hdrinc.com/follow-us

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH [mailto:Steve.Jenkins@oh.nacdnet.net]
Sent: Wednesday, August 14, 2019 4:21 AM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: RE: Racine Hydro Recreational Study

Good to hear Danielle, thank you.

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

From: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Sent: Tuesday, August 13, 2019 5:10 PM
To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: Racine Hydro Recreational Study

Hi Steve,

I actually just checked our records and I do see that there have been a few hardcopy surveys completed, so that was an incorrect statement in the progress report and will be updated in the next progress report. I apologize for the confusion.

You are definitely on our list of people that we would like to interview in Q3 and we will get in touch with you soon regarding potential dates/times for an interview.

Thanks for your feedback and we will be in touch with you soon!

Danielle Hanson
M 315.729.4745

hdrinc.com/follow-us

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH [mailto:Steve.Jenkins@oh.nacdnet.net]
Sent: Tuesday, August 13, 2019 1:57 PM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: Racine Hydro Recreational Study

Hi Danielle,

I read through the progress report with much interest, but am a little concerned about one item in the report. I fish at the Racine Dam quite frequently and did complete a hard copy recreational survey and placed it in the box at the top of the steps. Not sure why it was not collected unless someone took it out and threw it in the nearby trash can. I will complete another one and leave it in the box and will fill out the online version as well.

I have met with and talked to Jon Magalski several times about the improvements needed for the fishing access. I am one of numerous local “regulars” that fish at Racine Hydro and we all agree there needs to be some much needed improvements made since this will probably be our only opportunity to get them done for the next 40-50 years.

I am requesting and looking forward to being interviewed in Q3 as part of the Recreational Study. If you are the responsible person, please let me know when the interview process starts so I can schedule a date and time.

Thank you!

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

AEP Generation Resources, Inc. Project No. 2570-032

NOTICE OF TELECONFERENCE

(September 10, 2019)

a. Project Name and Number: Racine Hydroelectric Project No. 2570

b. Applicant: AEP Generation Resources, Inc.

c. Date and Time of Teleconference: September 26, 2019, 1:00 P.M. Eastern Standard Time

d. FERC Contact: Aaron Liberty at (202) 502-6862, aaron.liberty@ferc.gov

e. Purpose of Meeting: Federal Energy Regulatory Commission (Commission) staff will participate in a teleconference with AEP Generation Resources, Inc. (AEP Generation Resources), the U.S. Fish and Wildlife Service (FWS), and the West Virginia Division of Natural Resources (West Virginia DNR) to discuss the American eel surveys that are required to be conducted at the Racine Hydroelectric Project. FWS and West Virginia DNR filed separate letters with the Commission on August 22 and August 23, 2019, respectively, detailing their concerns associated with these surveys. Specifically, the resource agencies state that AEP Generation Resource's proposed methodologies for these surveys would not achieve the goals and the objectives of the Commission's approved study plan, and request a teleconference to discuss study methodologies.

f. All local, state, and federal agencies, Indian tribes, and other interested parties are invited to attend by phone. Please call Aaron Liberty at (202) 502-6862, or email aaron.liberty@ferc.gov by September 25, 2019, to RSVP and to receive specific instructions on how to participate.

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Teleconference Memo

To: Public Files

From: Aaron Liberty

Date: September 27, 2019

Dockets: P-2570-032

Project: Racine Hydroelectric Project

Subject: Teleconference to discuss the American eel surveys for the Racine Hydroelectric Project No. 2570

On September 26, 2019, Federal Energy Regulatory Commission (Commission) staff participated in a teleconference with representatives from AEP Generation Resources, Inc. (AEP Generation Resources) and its consultants, HDR and EnviroScience; the U.S. Fish and Wildlife Service (FWS); and the West Virginia Division of Natural Resources (West Virginia DNR) to discuss the American eel surveys required for the Racine Hydroelectric Project (project). FWS and West Virginia DNR had previously raised concerns in separate letters filed on August 22 and August 23, 2019, respectively, that the sampling methods for the American eel surveys were not adequate to accomplish the goals and objectives of the study.

Following introductions and background information on the relicensing process for the project, Commission staff explained that the intent of staff's recommendations in study plan determination (issued May 13, 2019) was to provide guidance on several acceptable sampling methods that could potentially be used to meet the goals and the objectives of the American eel study. Commission staff further explained that staff's recommendations in the study plan determination were written in this manner to allow AEP Generation Resources and the resource agencies to refine the specific sampling methods through consultation.

HDR and EnviroScience then explained the consultation efforts that had taken place with the resources agencies and provided a status update on the overall progress of the fisheries sampling. HDR and EnviroScience explained that fisheries sampling has not begun; however, fall fisheries sampling (electrofishing and trawl sampling) is scheduled to begin in October 2019 and would continue during next year's spring and summer sampling events. AEP Generation Resources also explained its proposed American eel sampling methods included spring, summer, and fall electrofishing, trawl sampling, and fyke nets.

The discussion continued with FWS summarizing their concerns with regard to the proposed study methodologies, including the use of electrofishing, trawl sampling, and

fyke nets. FWS stated that their preferred methodology would entail the use of strategically placed temporary eel ramps. FWS further stated that because upstream eel migration occurs in pulses, the use of temporary eel ramps would be the most effective methodology to use because it would allow for continuous sampling over an extended period of time. WV DNR agreed with FWS' concerns and recommendations.

AEP Generation Resources then explained several concerns associated with the use of temporary eel ramps at the project, including logistical, cost, and vandalism concerns.

Commission staff acknowledged that the resource agencies raised some valid concerns in their respective letters. Commission staff then reminded the meeting participants that ultimately, the methodologies used for the American eel study would need to satisfy the goals and objectives of the approved study, and provide a sufficient level of information to develop potential license requirements.

FWS reiterated its opinion that temporary eel ramps would be the most effective methodology and questioned whether the use of eel ramps at the project would be cost prohibitive considering the overall costs of the relicensing and the quality of the data that would be collected with eel ramps; however, FWS acknowledged eel ramp monitoring would be labor intensive. FWS suggested it may be able to assist with designing temporary eel ramps at the project. FWS also stated that other methods such as electrofishing and fyke nets may be adequate and did not object to their use at the project, provided certain considerations were taken into account (e.g., any electrofishing for eels should occur at night); however, FWS stated it was not confident such methods would accomplish the goals and objectives of the study. WV DNR also expressed concern with the proposed level of effort for the American eel surveys and stated a more rigorous level of effort was likely necessary.

The teleconference concluded with AEP Generation Resources and the resource agencies agreeing to regroup in the next few weeks to continue the discussion and to try and find a mutually agreeable solution. Commission staff asked to be kept informed of the progress of any future discussions. Commission staff also stated that if no progress was made in reaching an agreement over study methods in the coming weeks, Commission staff could consider advancing the filing deadline for the Initial Study Report (i.e., due May 12, 2020). Commission staff explained this would allow for the Director of Energy Projects to resolve any outstanding disagreements determined to be necessary in light of the project record, prior to the commencement of the 2020 study season.

DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
District 1
P.O. Box 99
1110 Railroad Street
Farmington, West Virginia 26571-0099
Telephone (304) 825-6787
Fax (304) 825-6270

Jim Justice
Governor

Stephen S. McDaniel
Director

October 2, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Racine Hydroelectric Project (FERC no. P-2570); Concerning Ohio River Jurisdiction

Dear Secretary Bose:

Comments made by staff members of the Federal Energy Regulatory Commission (FERC) with regards to the Racine Hydroelectric Project (Racine Project), have indicated FERC's position on jurisdiction of the Ohio River with relation to the Racine Project as being within the boundary of Ohio (see August 13, 2019 Telephone memo between Aaron Liberty and Richard McCorkle; see also the revised scoping document for Racine dated December 12, 2018). This has direct implications to interpreting Section 401 of the Clean Water Act and thus significant implications to the role the State of West Virginia may have in protecting, conserving and managing the Ohio River. For the purposes of clarifying jurisdiction of the Ohio River and to enforce the position of the West Virginia Division of Natural Resources, Wildlife Resources Section (WRS), the following is offered to your offices for consideration:

In establishment of the border between West Virginia and Ohio, the West Virginia State Constitution states that the border be described as extending to the western bank of the Ohio River. It further concludes that "the jurisdiction of this state also extends over all the rivers which are boundary lines between this state and any other state, to the opposite shore, where there is no statute or compact to the contrary." Therefore, it should stand to reason that West Virginia has jurisdiction of the waters within the Ohio River.

The issue of jurisdiction, though, is not merely solved by interpretation of the West Virginia State Constitution. Ohio has similarly laid claim to jurisdiction of the Ohio River, as indicated by a 1915 OH State Attorney General opinion which stated that "it is clearly settled that the state of Ohio has both civil and criminal jurisdiction over the waters of the Ohio River beyond the territorial limits of the state of Ohio, technically speaking, to-wit the western or northwestern low water mark of said river."

It would appear then, that both states have sought claim to the Ohio River. This matter of conflicting rights to jurisdiction has previously been presented to the courts, most notably in the 1920 case between Dickow v. Cincinnati. Within that case, the courts ruled "that while the state of Kentucky owns the bed of the Ohio River to the low water mark on the northwestern shore, its jurisdiction on the waters of the Ohio River is concurrent only with that of the states on the northwestern shore of the river. Ohio has the same authority and control on the waters of the Ohio opposite its shore as Kentucky has, and can legislate on the subject of civil and criminal rights and duties on its waters, and execute such laws thereon to the same extent as Kentucky can." Because West Virginia and Kentucky share a common history with respect to the use of the Ohio River and with respect to the formation of the state of Ohio, the 1920 court decision is also applicable in describing the relationship between Ohio and West Virginia concerning jurisdiction of the Ohio River.

The 1904 US Supreme Court Case of Wedding v. Meyler further underscores this narrative. In that case, Justice Holmes, in establishing his opinion, quotes the 1789 Virginia Compact in stating "that the use and navigation of the river Ohio, so far as the territory of the proposed state, or the territory which shall remain within the limits of this commonwealth, lies thereon, shall be free and common to the citizens of the United States, and the respective jurisdictions of this commonwealth and of the proposed state on the river as aforesaid shall be concurrent only with the states which may possess the opposite shores of the said river." Justice Holmes further interprets this compact as granting concurrent jurisdiction to the states formed on the opposite shores of the Ohio River. Justice Holmes continues by stating that "the several jurisdictions of two states respectively over adjoining portions of a river separated by a boundary line is no more concurrent than is a similar jurisdiction over adjoining counties or strips of land. Concurrent jurisdiction, properly so-called, on rivers, is familiar to our legislation, and means the jurisdiction of two powers over one and the same place." And finally, in clarification of some of his previous points, Justice Holmes asserts that "the concurrent jurisdiction given is jurisdiction 'on' the river, and does not extend to permanent structures attached to the river bed and within the boundary of one or the other state." This final consideration is particularly important because of the strong association of the structure of the Racine Project with that of the US Army Corps of Engineers Lock and Dam structure at that location. The two structures are inextricable with one another, thus placing a large portion of the Racine Project on the bed of the Ohio River wherein the State of West Virginia has immutable jurisdiction.

It can thus be assumed, by the reasons outlined above, that both states, West Virginia and Ohio, have concurrent jurisdiction over the Ohio River in such a manner as each state has equal jurisdiction to the waters and equal rights in asserting legal authority over the waters. Such concurrent jurisdiction grants each state the authority to issue a state 401 Water Quality Certification. Section 401 of the Clean Water Act describes the "state whereby the discharge originates, or will originate," as having the authority to

issue a Water Quality Certification. In this particular case, with concurrent jurisdiction established, the discharge from the Racine Project originates in both states. It can then be interpreted that both states have the legal authority under the Clean Water Act to issue a certification.

The WRS has every intention to continue to pursue the measures necessary to protect and manage its resources. These measures include coordinating with WVDEP in considering action on the state 401 Water Quality Certification. It would be the authority of the state to either grant, deny, or waive this certification. The WRS will continue to collaborate, coordinate and cooperate with their colleagues within the state of Ohio in addressing the impacts from the Racine Project and any other project along the Ohio River within the concurrent jurisdiction of both states.

Any questions or comments concerning this letter can be directed to me at Jacob.D.Harrell@wv.gov, or by phone at (304)637-0245

Sincerely,

Jacob Harrell
Hydropower Coordination Biologist

Yayac, Maggie

Subject: FW: [EXTERNAL] recreation study plan

From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Monday, November 11, 2019 7:19 AM
To: Tornes, Angela <angie_tornes@nps.gov>
Cc: Elizabeth B Parcell <ebparcell@aep.com>; Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: RE: [EXTERNAL] recreation study plan

Good morning Angie,

The studies are on-going and we are scheduled to have the Initial Study Report completed / filed mid-May (May 12 is the actual due date). Once filed, it will be posted to our website. Would you mind sending me a note to provide you a hard copy at that time? Being 6 months away, I know I'll forget or my reminder will get lost. In the meantime, please let me know if you have any questions. Thank you…Jon

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY™

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Tornes, Angela <angie_tornes@nps.gov>
Sent: Friday, November 8, 2019 4:32 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: Re: [EXTERNAL] recreation study plan

Hi Jon,

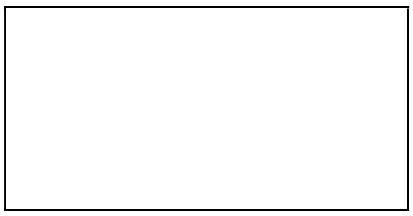
Please disregard my voicemail request to send your study plan since I was able to find it online. I would appreciate a copy of your surveys, both hard copy and online if you're able to share, for my reference library.

Thanks much.

- Angie ....·´¯`·.....><((((*> ...·´¯`·.....><((((*> ...·´¯`·.....><((((*>

Angie Tornes National Park Service-Department of Interior Regions 3, 4, and 5
Rivers,Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager
Hydropower Assistance Program, Midwest Region Manager

(414) 297.3605 **desk** (414) 944.3957 **fax**
626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202
RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro



On Fri, Aug 23, 2019 at 3:06 PM Jonathan M Magalski <jmmagalski@aep.com> wrote:

Hi Angela,

Thank you for reaching out to me. The final and FERC approved recreational study plan can be found in the Revised Study Plan document at the link below. This plan was developed based on our consultants experience in other relicensing proceedings, FERC's comments and expectations, and other stakeholder comments. Recreation studies are more or less a given in any hydro relicensing.

I hope this helps. Please let me know if you have any additional questions. Thanks again, have a nice weekend….Jon

http://aephydro.com/HydroPlant/Racine

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Tornes, Angela <angie_tornes@nps.gov>
Sent: Thursday, August 22, 2019 5:55 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] recreation study plan

Hello Jonathan,

I've reviewed the recreation section of your Racine quarterly study report which I found very useful. I'd appreciate your sending a copy of the proposed/approved recreation study plan as well as learning the impetus behind it: does AEP routinely conduct such studies or were specific elements requested by others?

Thank you. I'll look forward to hearing from you.

Angie Tornes **National Park Service**

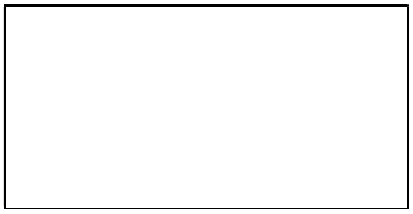
Rivers,Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager

Hydropower Assistance Program, Midwest Region Manager

(414) 297.3605 **desk** (414) 944.3957 **fax**

626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202

RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro



Yayac, Maggie

Subject: FW: [EXTERNAL] recreation study plan

On Mon, Nov 11, 2019 at 8:19 AM Jonathan M Magalski <jmmagalski@aep.com> wrote:

> Good morning Angie,
>
> The studies are on-going and we are scheduled to have the Initial Study Report completed / filed mid-May (May 12 is the actual due date). Once filed, it will be posted to our website. Would you mind sending me a note to provide you a hard copy at that time? Being 6 months away, I know I'll forget or my reminder will get lost. In the meantime, please let me know if you have any questions. Thank you…Jon
>
> AMERICAN ELECTRIC POWER
> BOUNDLESS ENERGY
> **JONATHAN M MAGALSKI** | **ENVIRONMENTAL SPEC CONSULT**
> JMMAGALSKI@AEP.COM | D:614.716.2240
> 1 RIVERSIDE PLAZA, COLUMBUS, OH 43215
>
> **From:** Tornes, Angela <angie_tornes@nps.gov>
> **Sent:** Friday, November 8, 2019 4:32 PM
> **To:** Jonathan M Magalski <jmmagalski@aep.com>
> **Subject:** Re: [EXTERNAL] recreation study plan
>
>
>
> Hi Jon,
>
> Please disregard my voicemail request to send your study plan since I was able to find it online. I would appreciate a copy of your surveys, both hard copy and online if you're able to share, for my reference library.
>
> Thanks much.
>
> **- Angie** ...·´¯·.....><(((*> ...·´¯·.....><(((*> ...·´¯·.....><(((*>

Angie Tornes National Park Service-Department of Interior Regions 3, 4, and 5

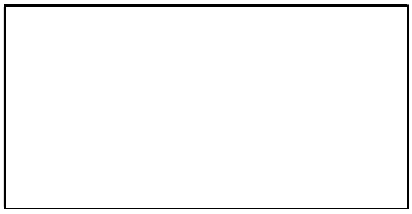
Rivers,Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager

Hydropower Assistance Program, Midwest Region Manager

(414) 297.3605 **desk** (414) 944.3957 **fax**

626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202

RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro



On Fri, Aug 23, 2019 at 3:06 PM Jonathan M Magalski <jmmagalski@aep.com> wrote:

> Hi Angela,
>
> Thank you for reaching out to me. The final and FERC approved recreational study plan can be found in the Revised Study Plan document at the link below. This plan was developed based on our consultants experience in other relicensing proceedings, FERC's comments and expectations, and other stakeholder comments. Recreation studies are more or less a given in any hydro relicensing.
>
> I hope this helps. Please let me know if you have any additional questions. Thanks again, have a nice weekend….Jon
>
> http://aephydro.com/HydroPlant/Racine

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Tornes, Angela <angie_tornes@nps.gov>
Sent: Thursday, August 22, 2019 5:55 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] recreation study plan

Hello Jonathan,

I've reviewed the recreation section of your Racine quarterly study report which I found very useful. I'd appreciate your sending a copy of the proposed/approved recreation study plan as well as learning the impetus behind it: does AEP routinely conduct such studies or were specific elements requested by others?

Thank you. I'll look forward to hearing from you.

Angie Tornes **National Park Service**

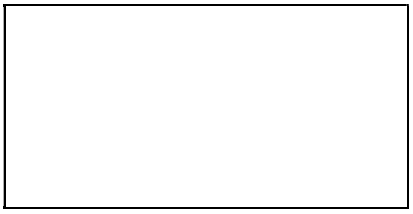
Rivers,Trails, and Conservation Assistance (RTCA) Program, Wisconsin Field Office Manager

Hydropower Assistance Program, Midwest Region Manager

(414) 297.3605 **desk** (414) 944.3957 **fax**

626 E. Wisconsin Ave., Suite 400, Milwaukee, WI 53202

RTCA: http:\\www.nps.gov/rtca Hydropower Assistance: http://nps.gov/hydro



American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

Via Electronic Filing

November 13, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Racine Hydroelectric Project (FERC No. 2570-032)
Second Quarterly Study Progress Report

Dear Secretary Bose:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), hereby submits the Second Quarterly Study Progress Report for the Racine Hydroelectric Project (Project) (FERC No. 2570) relicensing.

AEPGR has elected to utilize the Integrated Licensing Process (ILP) for the relicensing of the Project as defined in 18 Code of Federal Regulations (C.F.R.) Part 5. As proposed in AEPGR's April 12, 2019 Revised Study Plan (RSP) and approved in the Federal Energy Regulatory Commission's (Commission) May 13, 2019 Study Plan Determination (SPD), AEPGR is hereby filing the Second Quarterly Study Progress Report for the Project. This progress report describes the activities performed since the SPD, as well as ILP activities generally expected to be conducted in quarter 4 (Q4) of 2019. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved RSP and the Commission's SPD.

1. Water Quality Study

- Continuous water temperature and dissolved oxygen loggers were deployed at three locations as described in the RSP (i.e., reservoir (intake area – a set of loggers at two different depths), tailrace, and approximately 0.8 miles downstream of the Project). These continuous data loggers began recording data on May 1, 2019. Per the May 13, 2019 SPD, an additional water quality monitoring location was required approximately 2,000 feet downstream of the Project on river left (as facing downstream). A set of loggers was deployed approximately 2,000 feet downstream of the Project dam adjacent to the Racine Lock structure on June 17, 2019. The additional downstream river left continuous data loggers began recording data on June 17, 2019. The water quality monitoring period ended on October 31, 2019 and all of the data loggers have been removed from the river.
- Monthly data download and discrete multi-parameter water quality sampling were conducted May through October 2019 at each of the three initial data logger locations, and June through October 2019 for the additional location. All monthly water quality data collections have been completed.
- Reservoir water quality profile data was collected at three locations May through October

2019. All reservoir water quality profile data has been collected for this study.

- AEPGR's consultant has begun compiling and analyzing the water quality data collected for incorporation into the Initial Study Report (ISR).

2. Recreation Study

- Weatherproof boxes containing hardcopies of recreation survey questionnaires were deployed at the tailrace fishing access site in May 2019 and will remain in place until May 2020. A total of 17 hardcopy surveys have been completed to date.
- An online Visitor Use Survey was launched in May 2019 and is available at the Project's public relicensing website (www.aephydro.com/HydroPlant/Racine). Signs have been placed at multiple locations at the Project's tailrace fishing access site providing recreationists with the relevant information on how to access the online survey. Only one online survey has been completed to date. The online survey will remain open through May 2020.
- Five trail cameras were installed at various locations (i.e., parking area entrance, parking area, fishing pier stairway, fishing pier, and picnic area) in May 2019 to document recreational usage of the Project's recreation facilities. These cameras are periodically downloaded and will remain in place until May 2020.
- Activities expected to occur in Q4 of 2019 include scheduling interviews with interested stakeholders to gather additional information regarding recreation in the Project area, continued monitoring of any completed online and on-site survey forms, and continued photo documentation of recreation in the Project area.

3. Cultural Resources Study

- Background literature review and fieldwork has been completed for this study and the data collected is currently being compiled and analyzed for incorporation into the ISR.

4. Mussel Survey

- AEPGR consulted with the U.S. Fish and Wildlife Service (USFWS) and the West Virginia Division of Natural Resources (WVDNR) regarding the methodology for the Mussel Survey. Based on discussions and further consideration, AEPGR expanded the scope of the Mussel Survey to meet the requests of the resource agencies. The Mussel Survey was completed according to WVDNR's sampling protocols in September. No federally listed mussel species were collected during the survey. The data collected during this study is currently being compiled and analyzed for incorporation into the ISR.

5. Fisheries Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage

- Per the May 13, 2019 SPD, AEPGR must conduct spring and fall fisheries surveys upstream and downstream of the Project when the water temperature is within optimal

ranges specified by USFWS and WVDNR. By the time the SPD was issued, the water temperature in the Ohio River had already exceeded the optimal temperature range for the spring survey and therefore, the field work was not able to be performed in accordance with the SPD for the spring fisheries work in 2019. AEPGR plans to conduct the spring fisheries survey in 2020 when the water temperature is within the specified range.

- AEPGR's consultant has been coordinating with resource agencies regarding the timeframe to conduct the fall fisheries sampling event based on water temperatures in the Ohio River. Due to water temperatures outside the optimal range specified by resource agencies, the fall fisheries sampling was not able to be conducted in Q3 of 2019. Temperature ranges in the Ohio River have reached the appropriate range for sampling and the fall fisheries sampling is currently being conducted.
- AEPGR has been consulting with the USFWS and WVDNR to determine the appropriate sampling methods for American eel. On September 26, 2019, AEPGR participated in a conference call with FERC, USFWS, and WVDNR to further discuss potential eel sampling methods. AEPGR has received additional eel survey options for consideration and is currently reviewing those options. AEPGR will continue to coordinate with resource agencies regarding eel sampling methods. AEPGR anticipates that eel sampling will begin in the spring of 2020.

6. Fish Entrainment and Impingement Study

- AEPGR is continuing to review Project operations and physical Project facilities that will be used in the evaluations for this study.

7. Eastern Spadefoot Toad Habitat Suitability Assessment

- AEPGR's consultant performing this study conducted an initial site visit to view the Project area in September. Additional surveys are expected to occur from April through June of 2020, during the peak period with the highest probability of finding eastern spadefoot toads.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Distribution List

Liz Parcell (AEP)
Rob Quiggle (HDR)

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Federal Agencies

Mr. John Eddins
Assistant Director
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001-2637

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 1st St NE
Washington, DC 20426

FEMA Region 3
615 Chestnut Street
One Independence Mall, Sixth Floor
Philadelphia, PA 19106-4404

FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, IL 60605

Mr. John Bullard
Regional Administrator
NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930-2276

Mr. Andrew Johnson
Water Quality Team Lead/Water Resources Engineering Section
US Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Ms. Belinda Weikle
Water Resources Engineering Section
U.S. Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Mr. Harold Peterson
Bureau of Indian Affairs
U.S. Department of the Interior
545 Marriott Dr, Suite 700
Nashville, TN 37214

Office of the Solicitor
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Mr. Lindy Nelson
Regional Environmental Officer, Office of Environmental Policy & Compliance
U.S. Department of the Interior,
Philadelphia Region
Custom House, Room 244
200 Chestnut Street
Philadelphia, PA 19106

Ms. Liz Pelloso
Wetland/Environmental Scientist - Region 5
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Barbara Rudnick
Region 3
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Ken Westlake
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Angela Boyer
Field Office Supervisor, Ohio Ecological Services Field Office
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Richard C. McCorkle
Fish and Wildlife Biologist, Pennsylvania Field Office
U.S. Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Mr. Marty Miller
Chief, Endangered Species - Northeast Region (Region 5)
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

Mr. John Schmidt
Acting Supervisor, West Virginia Field Office
U.S. Fish and Wildlife Service
694 Beverly Pike
Elkins, WV 26241

Ms. Alisa Shull
Chief, Endangered Species - Midwest Region (Region 3)
U.S. Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, MN 55437-1458

Mr. Jeremy S. White
West Virginia Water Science Center
U.S. Geological Survey
11 Dunbar Street
Charleston, WV 25301

Mr. Shaun M. Wicklein
Virginia Water Science Center
U.S. Geological Survey
1730 East Parham Road
Richmond, VA 23228

Ohio Office
U.S. Geological Survey
Ohio Water Science Center
6460 Busch Boulevard, Suite 100
Columbus, OH 43229-1737

Ohio Office
US Geological Survey
Field Office
1515 Brightwood Road SE
New Philadelphia, OH 44663

Hon. Bill Johnson
U.S. Congressman, 6th District
U.S. House of Representatives
1710 Longworth House Office Building
Washington, DC 20515

Mr. Michael Reynolds
Acting Director, Headquarters
U.S. National Park Service
1849 C Street, NW
Washington, DC 20240

Mr. Cameron Sholly
Regional Director, Midwest Region
U.S. National Park Service
601 Riverfront Drive
Omaha, NE 68102-4226

Hon. Sherrod Brown
U.S. Senate
713 Hart Senate Office Building
Washington, DC 20510

Hon. Rob Portman
U.S. Senate
448 Russell Senate Office Building
Washington, DC 20510

State Agencies

Ms. Audrey Blakeman
Geologist, Geological Survey Main Office
ODNR Division of Geological Survey
2045 Morse Road, Building C-1
Columbus, OH 43229-6693

Mr. Michael Bailey
Chief, Ohio State Parks & Watercraft
ODNR Division of State Parks & Watercraft
2045 Morse Road, Building C
Columbus, OH 43229-6693

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Ms. Mia Kannik
Program Manager, Ohio Dam Safety Program
ODNR Division of Water Resources
2045 Morse Road, Building B
Columbus, OH 43229-6693

Mr. Michael Greenlee
Fish Management Supervisor
ODNR Division of Wildlife
360 E. State Street
Athens, OH 45701

Mr. Steve Holland
Office of Coastal Management
Ohio Department of Natural Resources
105 West Shoreline Drive
Sandusky, OH 44870

Ms. Sarah Tebbe
State Headquarters
Ohio Department of Natural Resources
2045 Morse Road, Building G
Columbus, OH 43229

District 4, Southeast Ohio
Ohio Department of Natural Resources
360 E. State Street
Athens, OH 45701

Ohio Environmental Council
1145 Chesapeake Avenue, Suite 1
Columbus, OH 43212

Mr. Craig Butler
Ohio Environmental Protection Agency
2195 Front Street
Logan, OH 43138

Mr. Harry Kallipolitis
401 WQC/Storm Water Manager
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, OH 43215

Mr. Sam Dinkins
Technical Program Manager
Ohio River Valley Water Sanitation Commission (ORSANCO)
5735 Kellogg Avenue
Cincinnati, OH 45230

Ms. Krista Horrocks
Ohio History Center
State Historic Preservation Office
800 E. 17th Avenue
Columbus, OH 43211

Hon. Jay Edwards
District 94
The Ohio House of Representatives
77 S. High Street, 11th Floor
Columbus, OH 43215

Mr. Bob Peterson
Ohio Senate District 17
The Ohio Senate
Senate Building
1 Capitol Square, 1st Floor
Columbus, OH 43215

Mr. Kent Leonhardt
Commissioner
West Virginia Department of Agriculture
1900 Kanawha Boulevard E.
State Capitol, Room E-28
Charleston, WV 25305-0170

Mr. Brian Bridgewater
401 Certification Program Manager,
Division of Water and Waste Management
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Randall Reid-Smith
The Culture Center
West Virginia Division of Culture and History
1900 Kanawha Boulevard E.
Charleston, WV 25305

Mr. Danny Bennett
West Virginia Division of Natural Resources
738 Ward Road
Elkins, WV 26241

Mr. Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Ms. Barbara Sargent
Environmental Resources Specialist
West Virginia Division of Natural Resources
PO Box 67
Elkins, WV 26241-3235

Local Governments

Mr. Don Anderson
Mayor
City of Pomeroy
660 E. Main Street, #A
Pomeroy, OH 45769

Meigs County Commissioners
Meigs County
100 E. Second Street
Pomeroy, OH 45769

Mr. Steve Jenkins
Administrator
Meigs Soil and Water Conservation District
113 East Memorial Drive, Suite D
Pomeroy, OH 45769

Mr. Sam Anderson
Mayor
Town of Hartford
PO Box 96
Hartford, WV 25247

Ms. Roberta Hysell
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Greg Kaylor
Mayor
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Michael Gerlach
Mayor
Village of Middleport
659 Pearl Street
Middleport, OH 45760

Mr. J. Scott Hill
Mayor
Village of Racine
405 Main Street
PO Box 399
Racine, OH 45771

Tribes

Absentee Shawnee Tribe of Oklahoma
2025 South Gordon Cooper
Shawnee, OK 74801

Mr. Kim Penrod
Director, Cultural Resources/106 Archives, Library and Museum
Delaware Nation
31064 State Highway 281
PO Box 825
Anadarko, OK 73005

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Delaware Tribe of Indians
5100 Tuxedo Blvd.
Bartlesville, OK 74006

Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Eastern Shawnee Tribe of Oklahoma
PO Box 350
Seneca, MO 64865

Miami Tribe of Oklahoma
PO Box 1326
Miami, OK 74355

Dr. Andrea Hunter
Director, THPO
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Mr. James Munkres
Archaeologist
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Seneca-Cayuga Nation
23701 S. 655 Road
Grove, OK 74344

Shawnee Tribe
PO Box 189
29 S. Hwy 69A
Miami, OK 74355

Non-governmental Organizations

Mr. John Seebach
American Rivers
1104 14th St NW, Suite 1400
Washington, DC 20005

Mr. Kevin Richard Colburn
National Stewardship Director
American Whitewater
PO Box 1540
Cullowhee, NC 28779

Nature Conservancy
6375 Riverside Drive, Suite 100
Dublin, OH 43017

Mr. Richard Cogen
Executive Director
Ohio River Foundation
PO Box 42460
Cincinnati, OH 45242

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

December 9, 2019

Rick McCorkle
U.S. Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Subject: Racine Hydroelectric Project (FERC No. 2570)
Response to Agencies' Comments on American Eel Sampling Methodology

Dear Mr. McCorkle and Mr. Harrell:

On May 13, 2019, the Federal Energy Regulatory Commission (FERC or Commission) issued a Study Plan Determination (SPD) for AEP Generation Resources Inc.'s (AEPGR) Racine Hydroelectric Project (FERC No. 2570) (Project) located along the Ohio River in Meigs County, Ohio. The SPD describes the studies that AEPGR has been directed to conduct in support of a new FERC license for the Project.

FERC's SPD requires AEPGR to conduct targeted surveys for upstream migrating American Eels (*Anguilla rostrata*) as a component of the Fisheries Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage Study. The SPD lists several options for targeted eel surveys (i.e., electrofishing, eel traps, eel pots, and/or eel ramps) and does not specify the preferred methodologies to be used.

Since the SPD, AEPGR has been in consultation with the U.S. Fish and Wildlife Service (USFWS) and West Virginia Division of Natural Resources (WVDNR) regarding eel sampling methods. On August 15, 2019, AEPGR's consultant sent a plan describing the proposed American Eel sampling methods to the USFWS, WVDNR, and Ohio Department of Natural Resources. AEPGR proposed to use a combination of sampling methods to survey for American Eels including, fyke nets (with attraction flow), boat electrofishing, and mini-Missouri trawl netting[1].

The USFWS and WVDNR filed comments with FERC on AEPGR's proposed sampling methods, on August 22 and August 23, 2019, respectively. In their comments, the USFWS and WVDNR stated that AEPGR's proposed methodologies would be ineffective at sampling American Eels and recommended that AEPGR install temporary eel ramps at the Project. On September 26, 2019, AEPGR participated in a conference call with FERC, the USFWS, and WVDNR to further discuss

[1] In the plan, eel pot locations were inadvertently included on the sampling location map as AEPGR was not proposing to use eel pots as a sampling method at that time.

potential eel sampling methods. On October 18, 2019, AEPGR received recommendations from the USFWS on several potential sampling methodologies. AEPGR has reviewed these recommendations, the USFWS and WVDNR's comments, and reviewed Project drawings and photographs. Based on the comments and recommendations provided by the USFWS and WVDNR, AEPGR intends to install a temporary eel ramp to address the resource agencies' concerns regarding effective sampling in lieu of the eel sampling methodologies previously proposed in AEP's eel sampling plan that was sent to the resource agencies and described above.

AEPGR will work with its consultants and engineers to determine the specific location and design of the temporary eel ramp to be constructed downstream of the Racine Project's powerhouse. Due to the configuration of the Project and periodic high flows associated with the Ohio River, design options and locations are limited. AEPGR anticipates that the eel ramp would be operated from approximately May 2020 (or when the water temperature reaches 15 degrees Celsius [°C]) through summer/early fall 2020 (until water temperature falls below 10°C), in accordance with the water temperatures specified in the USFWS's August 22, 2019 comment letter. AEPGR will coordinate with and provide the USFWS and WVDNR a copy of the final design and implementation schedule prior to installing the eel ramp.

If there are any questions regarding this filing, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Distribution List
Liz Parcell (AEP)
Rob Quiggle (HDR)

Yayac, Maggie

Subject: FW: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

-----Original Message-----
From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Tuesday, December 10, 2019 10:23 AM
To: Richter, Audrey M CIV USARMY CELRH (USA) <Audrey.M.Richter@usace.army.mil>
Cc: Weikle, Belinda M CIV USARMY CELRH (USA) <Belinda.M.Weikle@usace.army.mil>; Stone Smith, Lesli Faye CIV USARMY CELRH (USA) <Lesli.F.StoneSmith@usace.army.mil>
Subject: [Non-DoD Source] RE: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

Hi Audrey,

Thank you for the reminder regarding the potential need for a Corps permit. We are in the process of setting up a contract with our consultants to design and construct the eel ramp. The ramp itself will extend below the OHWM in the tailrace somewhere between the powerhouse and riprap bank. Once we have a preliminary design, I will be in touch to discuss the need for a permit or other Corps authorization. Much appreciate, have a great Holiday if I don't talk with you before then.....Jon

JONATHAN M MAGALSKI | ENVIRONMENTAL SPEC CONSULT JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

-----Original Message-----
From: Richter, Audrey M CIV USARMY CELRH (USA) <Audrey.M.Richter@usace.army.mil>
Sent: Tuesday, December 10, 2019 8:46 AM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: Weikle, Belinda M CIV USARMY CELRH (USA) <Belinda.M.Weikle@usace.army.mil>; Stone Smith, Lesli Faye CIV USARMY CELRH (USA) <Lesli.F.StoneSmith@usace.army.mil>
Subject: [EXTERNAL] FW: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

Good morning, Jonathan,

I am writing in response to your December 9, 2019 letter concerning the American Eel ramp associated with the Racine Hydropower project. Depending on the location of the proposed ramp, and the construction methods (i.e., a discharge of fill material into the river), installation of the eel ramp may require Department of the Army authorization under Section 10 and/or Section 404. It may be helpful to schedule a call to discuss the details of the ramp.

Thanks again for your quick turnaround last week to help me gain access to the Racine project site.

Audrey

Audrey Richter
Regulatory Project Manager

U.S. Army Corps of Engineers
Huntington District- Regulatory Division
Phone: 716-879-4469
Email: Audrey.M.Richter@usace.army.mil

-----Original Message-----
From: Weikle, Belinda M CIV USARMY CELRH (USA)
Sent: Monday, December 9, 2019 4:53 PM
To: Rutherford, Rebecca A CIV USARMY CELRH (USA) <Rebecca.A.Rutherford@usace.army.mil>; Stephens, Ashley L CIV USARMY CELRH (US) <Ashley.L.Stephens@usace.army.mil>; Johnson, Andrew N CIV USARMY CELRH (USA) <Andrew.N.Johnson@usace.army.mil>; Richter, Audrey M CIV USARMY CELRH (USA) <Audrey.M.Richter@usace.army.mil>
Cc: Foster, Steven W CIV USARMY CELRH (USA) <Steven.W.Foster@usace.army.mil>; Stone Smith, Lesli Faye CIV USARMY CELRH (USA) <Lesli.F.StoneSmith@usace.army.mil>
Subject: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Team,

Attached is AEP's response to the U.S. Fish and Wildlife's questions regarding the Study Plan Determination (SPD) eel sampling for the upcoming Racine hydropower relicensing activity.

Let me know if you have questions.

Thanks,

Belinda M. Weikle, M.S.C.E., P.E.
U.S. Army Corps of Engineers
Huntington District
Water Resources
502 Eighth Street
Huntington, WV 25701
304-399-5808 Office Phone
304-730-2259 Cell Phone
304-399-5085 Fax
Belinda.M.Weikle@usace.army.mil

CLASSIFICATION: UNCLASSIFIED

Yayac, Maggie

Subject: FW: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

From: Richter, Audrey M CIV USARMY CELRH (USA) <Audrey.M.Richter@usace.army.mil>
Sent: Tuesday, December 10, 2019 8:46 AM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: Weikle, Belinda M CIV USARMY CELRH (USA) <Belinda.M.Weikle@usace.army.mil>; Stone Smith, Lesli Faye CIV USARMY CELRH (USA) <Lesli.F.StoneSmith@usace.army.mil>
Subject: [EXTERNAL] FW: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

Good morning, Jonathan,

I am writing in response to your December 9, 2019 letter concerning the American Eel ramp associated with the Racine Hydropower project. Depending on the location of the proposed ramp, and the construction methods (i.e., a discharge of fill material into the river), installation of the eel ramp may require Department of the Army authorization under Section 10 and/or Section 404. It may be helpful to schedule a call to discuss the details of the ramp.

Thanks again for your quick turnaround last week to help me gain access to the Racine project site.

Audrey

Audrey Richter
Regulatory Project Manager
U.S. Army Corps of Engineers
Huntington District- Regulatory Division
Phone: 716-879-4469
Email: Audrey.M.Richter@usace.army.mil

-----Original Message-----
From: Weikle, Belinda M CIV USARMY CELRH (USA)
Sent: Monday, December 9, 2019 4:53 PM
To: Rutherford, Rebecca A CIV USARMY CELRH (USA) <Rebecca.A.Rutherford@usace.army.mil>; Stephens, Ashley L CIV USARMY CELRH (US) <Ashley.L.Stephens@usace.army.mil>; Johnson, Andrew N CIV USARMY CELRH (USA) <Andrew.N.Johnson@usace.army.mil>; Richter, Audrey M CIV USARMY CELRH (USA) <Audrey.M.Richter@usace.army.mil>
Cc: Foster, Steven W CIV USARMY CELRH (USA) <Steven.W.Foster@usace.army.mil>; Stone Smith, Lesli Faye CIV USARMY CELRH (USA) <Lesli.F.StoneSmith@usace.army.mil>
Subject: Racine Hydropower - AEP's Response to U.S. Fish and Wildlife Service's Questions - Eel Survey (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Team,

Attached is AEP's response to the U.S. Fish and Wildlife's questions regarding the Study Plan Determination (SPD) eel sampling for the upcoming Racine hydropower relicensing activity.

Let me know if you have questions.

Thanks,

Belinda M. Weikle, M.S.C.E., P.E.
U.S. Army Corps of Engineers
Huntington District
Water Resources
502 Eighth Street
Huntington, WV 25701
304-399-5808 Office Phone
304-730-2259 Cell Phone
304-399-5085 Fax
Belinda.M.Weikle@usace.army.mil

CLASSIFICATION: UNCLASSIFIED

DATE: December 12, 2019

MEMO TO: OEP Issuances

FROM: Jay Summers, OEP/DHL

SUBJECT: Project No. 2570-032 transcript records

Attached are the transcripts from the scoping meetings held on September 26 and 27, 2018, in Pomeroy, Ohio, for the Racine Hydroelectric Project. We request that it be included in the project record for P-2570-032.

Yayac, Maggie

Subject: Racine Project - Fish Entrainment and Impingement Study Consultation
Attachments: 20200109 Racine Fish Entrainment Letter.pdf

From: Hanson, Danielle
Sent: Thursday, January 9, 2020 11:01 AM
To: 'USFWS' <richard_mccorkle@fws.gov>; 'West Virginia Division of Natural Resources' <jacob.d.harrell@wv.gov>; 'ODNR Division of Wildlife' <mike.greenlee@dnr.state.oh.us>
Cc: 'Jonathan M Magalski (jmmagalski@aep.com)' <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>; Quiggle, Robert <Robert.Quiggle@hdrinc.com>
Subject: Racine Project - Fish Entrainment and Impingement Study Consultation

Good Afternoon,

As proposed in AEP Generation Resources Inc.'s (AEPGR) April 12, 2019 Revised Study Plan and approved in the Federal Energy Regulatory Commission's (FERC) May 13, 2019 Study Plan Determination AEPGR is conducting a Fish Entrainment and Impingement Study.

Task 1 of the Fish Entrainment and Impingement Study Plan states that AEPGR will coordinate with representatives from the U.S. Fish and Wildlife Service (USFWS), West Virginia Division of Natural Resources (WVDNR) and Ohio Department of Natural Resources (ODNR) to identify target fish species to be analyzed during this study. Based on a review of existing fisheries information in the Project vicinity and the interest in the American eel, AEPGR has proposed a list of fish species and life stages in the attached letter for analysis in the Fish Entrainment and Impingement Study.

AEPGR respectfully requests that the USFWS, WVDNR and ODNR confirm receipt of this transmittal and review the attached proposed fish species list and provide any additional suggestions or revisions within 30 days of this letter so that AEPGR can begin its data collection and analysis to be included in the Initial Study Report.

If there are any questions regarding this filing, please do not hesitate to contact Jon Magalski at (614) 716-2240 or jmmagalski@aep.com.

Thank you.

Danielle Hanson
Environmental Scientist

HDR
M 315.729.4745
Danielle.Hanson@hdrinc.com

hdrinc.com/follow-us

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

January 30, 2020

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-11.2
888 First St., NE
Washington, DC 20426

RE: Racine Hydroelectric Project (FERC No. 2570-032); Request for Resource Agency Concurrence regarding Proposed Entrainment and Impingement Study

Dear Secretary Bose:

On January 9, 2020, the U.S. Fish and Wildlife Service (Service) received a request (enclosed) from American Electric Power Generation Resources Inc. (AEPGR), regarding their proposed list of fish species to be evaluated during the approved Fish Entrainment and Impingement Study.

The Service appreciates the inclusion of American eel in the proposed list of fish species to be evaluated; however, this list of proposed species (see enclosure) appears to be limited, including only 12 species, whereas 49 fish species were collected in 1985 and 1986 during the previous Project entrainment study (WAPORA 1987), and there are more than 60 species that have been documented in the Racine Pool (ORSANCO). For the six proposed and recently licensed projects on the Monongahela River (Free Flow Power/Rye Development), entrainment studies were conducted for 24 species (HDR 2013). The species selection process considered overall abundance, conservation status, migratory status, and guild/habitat representation. While AEPGR has agreed to include the only known diadromous species, American eel, there are other non-diadromous species that nevertheless undertake long distance, in-river migrations (e.g., walleye, *Sander vitreus;* skipjack herring, *Alosa chrysochloris*). Some migratory species are also important freshwater mussel hosts and are therefore important to mussel dispersal, while other species are either rare, threatened or endangered.

Fisheries surveys have yet to be completed and are scheduled for completion in 2020. To better inform what fish species are present in the river in the vicinity of the Project and what additional fish species should be included in the analysis, the Service recommends that the final selection of fish species to be evaluated in the entrainment and impingement study be postponed until the updated fisheries information is collected in the 2020 field season.

The Service also recommends that the analysis include documented hosts for the federally listed endangered mussels that have the potential to occur in the vicinity of the project, including the fanshell (*Cyprogenia stegaria*), pink mucket (*Lampsilis abrupta*), sheepnose (*Plethobasus cyphyus*) and snuffbox (*Epioblasma triquetra*). There are recent records since 2000 of live fanshell mussels from the Belleville and Racine Pools, and of live sheepnose and pink mucket mussels in the Greenup Pool, downstream of the Robert C. Byrd Locks and Dam (USFWS 2017). There is also recent documentation for sheepnose (live specimens) from the Belleville Pool, downstream of the Willow Island Locks and Dam (EA Engineering 2016). Recent records for the snuffbox mussel are restricted to the Belleville Pool (USFWS 2017).

Mussel hosts that should be evaluated include the logperch (*Percina caprodes*), a host for fanshell and snuffbox, and walleye, largemouth bass (*Micropterus salmoides*) and white crappie (*Pomoxis annularis*), hosts for the pink mucket. Sauger (*Sander canadensis*) is the only known natural host for the sheepnose, and its current inclusion in AEPGR's proposed species list is appropriate. AEP should also consider including host fish for any state listed mussels that may occur in the vicinity of the Project. For example, the 2015 mussel survey in support of the U.S. Army Corps of Engineers' navigation dredging program at Racine Locks and Dam documented the Ohio state-listed endangered monkeyface (*Quadrula metanevra*) (LEC 2015). Fish species that are found in the Racine Pool and are documented hosts for this species include spotfin shiner (*Cyprinella spiloptera*) and bluntnose minnow (*Pimephales notatus*). Both of these fish species were among the most abundant species (comprising at least 1% of total) captured during powerhouse discharge sampling during the previous entrainment study at Racine (WAPORA 1987); therefore, we request that these species also be added to the list of species to be evaluated. The aforementioned skipjack herring was also documented during the previous entrainment study, and is the only reported host for the elephant-ear mussel (*Elliptio crassidens*), an Ohio state-listed endangered species that was documented in the Belleville Pool during a 2014 survey (EA Engineering 2016). We request the addition of this fish species to the proposed study.

In their study plan, AEPGR also proposed to utilize water quality profile data collected from the proposed *Water Quality Study* to characterize water quality conditions in the forebay for assessing its potential influence on fish entrainment, and to use data from the proposed *Fisheries Survey* and other available information to describe the fish community assemblage in the project area and determine the potential for entrainment based on the spatial and temporal characteristics, life history, swim speed and avoidance behavior of the various life stages of target fish species. In its Study Plan Determination, the Federal Energy Regulatory Commission agreed with the Service and the West Virginia Division of Natural Resources (WVDNR) that additional, season-specific fisheries data from the Racine Reservoir are necessary to inform the desktop entrainment study, stating "we recommend that AEP Generation Resources conduct spring and fall fish surveys to ensure that a robust dataset on the fish community upstream of the project is available to support a season-specific analysis of fish entrainment and mortality at the project."

In their request, AEPGR indicates that size classes to be evaluated will be bracketed based on species and life stage. In other recent desktop studies for projects in the Ohio River basin (e.g., HDR 2013), survival estimates were determined by fish length in 1-inch increments, up to the

longest fish expected to be able to pass through the trash rack bars. The Service recommends that AEPGR evaluate percent survival in fish length increments of no more than 2 inches per increment. We also support the recommendations of the West Virginia Division of Fish and Wildlife.

Thank you for your consideration in this matter. If you have any questions, please contact Richard McCorkle of my staff at 814-206-7470.

Sincerely,

Sonja Jahrsdoerfer

Sonja Jahrsdoerfer
Project Leader

Enclosure

References/Literature Cited:

EA Engineering, Science, and Technology, Inc., PBC. 2016. Freshwater Mussel Monitoring Survey in the Ohio River at the Willow Island Locks and Dam (ORM 162). EA Project No. 1452810.

Henningson, Durham & Richardson (HDR) Architecture and Engineering, P.C. 2013. Monongahela River Projects Fish Entrainment and Movement Study. Licensing Study for Opekiska Project (FERC No. P-13753), Morgantown Project (FERC No. 13762), Point Marion Project (FERC No. P-13771), Grays Landing Project (FERC No. 13763), Maxwell Project (FERC No. P-13766), and Charleroi Project (FERC No. P-13767). Final License Application Volume II, Appendix C-3, Fish Entrainment Study Report. FERC Accession Number 20140227-5260(29167117).

Lewis Environmental Consulting, LLC (LEC). 2015. Huntington District Corps of Engineers 2015 Mussel Surveys in Support of the Navigation Dredge Program.

Ohio River Valley Water Sanitation Commission (ORSANCO). Ohio River main stem fish population data, 2010-2018.

U.S. Fish and Wildlife Service (USFWS). 2017. Biological Opinion and Incidental Take Statement for the Fanshell (*Cyprogenia stegaria*), Pink Mucket Pearly Mussel (*Lampsilis abrupta*), Sheepnose (*Plethobasus cyphyus*), and Snuffbox (*Epioblasma triquetra*) for the Robert C. Byrd Hydroelectric Project and Navigation Channel Maintenance Dredging at the existing Robert C. Byrd Locks and Dam in Gallia County, Ohio and Mason County, West Virginia. FERC Accession Number: 20170619-5076.

WAPORA, Inc. 1987. Fish passage studies at the Racine and New Martinsville Hydroelectric Projects. 4 vols. City of New Martinsville, West Virginia and American Electric Power Service Corporation.

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

January 9, 2020

Rick McCorkle
U.S. Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Michael Greenlee
Ohio Department of Natural Resources
360 E. State Street
Athens, OH 45701

Subject: Racine Hydroelectric Project (FERC No. 2570)
Consultation Regarding Fish Entrainment and Impingement Study

Dear Mr. McCorkle, Mr. Harrell, and Mr. Greenlee:

On May 13, 2019, the Federal Energy Regulatory Commission (FERC or Commission) issued a Study Plan Determination (SPD) for AEP Generation Resources Inc.'s (AEPGR) Racine Hydroelectric Project (FERC No. 2570) (Project) located along the Ohio River in Meigs County, Ohio. The SPD describes the studies that AEPGR has been directed to conduct in support of a new FERC license for the Project. AEPGR's Fish Entrainment and Impingement Study was approved without modifications in FERC's SPD.

Task 1 of the Fish Entrainment and Impingement Study Plan states that AEPGR will coordinate with representatives from the U.S. Fish and Wildlife Service (USFWS), West Virginia Division of Natural Resources (WVDNR) and Ohio Department of Natural Resources (ODNR) to identify target fish species to be analyzed during this study. Based on a review of existing fisheries information in the Project vicinity and the interest in the American eel, AEPGR has proposed the following list of fish species and life stages (size classes will be bracketed accordingly) for analysis in the Fish Entrainment and Impingement Study utilizing the USFWS Turbine Blade Strike Analysis model.

Fish Species in the Ohio River and Recommended for Desktop Entrainment Analysis

Common Name	Scientific Name	Life Stage
American Eel	*Anguilla rostrata*	Juvenile, Adult
Bluegill	*Lepomis machrochirus*	Juvenile, Adult, Spawning
Emerald Shiner	*Notropis atherinoides*	Juvenile, Adult, Spawning
Channel Catfish	*Ictalurus punctatus*	Juvenile, Adult, Spawning
Freshwater Drum	*Aplodinotus grunniens*	Juvenile, Adult, Spawning
Gizzard Shad	*Dorosoma cepedianum*	Juvenile, Adult, Spawning
Golden Redhorse	*Moxostoma erythrurum*	Juvenile, Adult, Spawning
Sauger	*Sander canadensis*	Juvenile, Adult, Spawning
Smallmouth Bass	*Micropterus dolomieu*	Juvenile, Adult, Spawning
Spottail Shiner	*Notropis hudsonius*	Juvenile, Adult, Spawning
Spotted Bass	*Micropterus punctulatus*	Juvenile, Adult, Spawning
White Bass	*Morone chrysops*	Juvenile, Adult, Spawning

AEPGR respectfully requests that the USFWS, WVDNR and ODNR review this proposed fish species list and provide any additional suggestions or revisions within 30 days of this letter so that AEPGR can begin its data collection and analysis to be included in the Initial Study Report.

If there are any questions regarding this filing, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Liz Parcell (AEP)
Rob Quiggle (HDR)

Yayac, Maggie

Subject: FW: Racine Project - Fish Entrainment and Impingement Study Consultation

From: McCorkle, Richard [mailto:richard_mccorkle@fws.gov]
Sent: Thursday, January 30, 2020 9:14 AM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Cc: 'Jonathan M Magalski (jmmagalski@aep.com)' <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; McCloskey, John <john_mccloskey@fws.gov>; Harrell, Jacob D <Jacob.D.Harrell@wv.gov>; ODNR Division of Wildlife <mike.greenlee@dnr.state.oh.us>
Subject: Re: Racine Project - Fish Entrainment and Impingement Study Consultation

Danielle,

Please see the attached response which I just filed to the FERC docket. We appreciate the early consultation; however, as noted in the attached letter, the Study Plan Determination called for the entrainment and impingement study to be conducted after the fisheries surveys were completed, so that the updated Racine Pool fisheries data could help to inform the entrainment and impingement study as to fish species present and seasonal relative abundance. We've also requested inclusion of some other species of particular concern (e.g., hosts for federally endangered freshwater mussels). I failed to mention in the letter that we would be happy to discuss further, and request another opportunity to review and discuss the revised list once the fisheries study has been completed.

Thanks again for the coordination.

Rick

Richard C. McCorkle
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
814-206-7470

*"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation
increased and not impaired in value."*

- President Theodore Roosevelt

From: Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Sent: Thursday, January 9, 2020 1:00 PM
To: McCorkle, Richard <richard_mccorkle@fws.gov>; West Virginia Division of Natural Resources <jacob.d.harrell@wv.gov>; ODNR Division of Wildlife <mike.greenlee@dnr.state.oh.us>

Cc: 'Jonathan M Magalski (jmmagalski@aep.com)' <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>; Quiggle, Robert <Robert.Quiggle@hdrinc.com>
Subject: [EXTERNAL] Racine Project - Fish Entrainment and Impingement Study Consultation

Good Afternoon,

As proposed in AEP Generation Resources Inc.'s (AEPGR) April 12, 2019 Revised Study Plan and approved in the Federal Energy Regulatory Commission's (FERC) May 13, 2019 Study Plan Determination AEPGR is conducting a Fish Entrainment and Impingement Study.

Task 1 of the Fish Entrainment and Impingement Study Plan states that AEPGR will coordinate with representatives from the U.S. Fish and Wildlife Service (USFWS), West Virginia Division of Natural Resources (WVDNR) and Ohio Department of Natural Resources (ODNR) to identify target fish species to be analyzed during this study. Based on a review of existing fisheries information in the Project vicinity and the interest in the American eel, AEPGR has proposed a list of fish species and life stages in the attached letter for analysis in the Fish Entrainment and Impingement Study.

AEPGR respectfully requests that the USFWS, WVDNR and ODNR confirm receipt of this transmittal and review the attached proposed fish species list and provide any additional suggestions or revisions within 30 days of this letter so that AEPGR can begin its data collection and analysis to be included in the Initial Study Report.

If there are any questions regarding this filing, please do not hesitate to contact Jon Magalski at (614) 716-2240 or jmmagalski@aep.com.

Thank you.

Danielle Hanson
Environmental Scientist

HDR
M 315.729.4745
Danielle.Hanson@hdrinc.com

hdrinc.com/follow-us

Yayac, Maggie

Subject: FW: Fish entrainment/impingement study consultation - Racine
Attachments: Racine Entrainment Consultation.pdf

From: Harrell, Jacob D [mailto:Jacob.D.Harrell@wv.gov]
Sent: Friday, February 7, 2020 11:04 AM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCorkle, Richard <richard_mccorkle@fws.gov>; John McCloskey <john_mccloskey@fws.gov>; Michael.Greenlee@dnr.state.oh.us; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; Elizabeth B Parcell <ebparcell@aep.com>
Subject: Fish entrainment/impingement study consultation - Racine

Danielle,

Please find attached WVDNR-WRS response regarding the fish entrainment/impingement study at the Racine Project. If you have any questions, comments, or seek further clarification, please do not hesitate to contact me.

Thank you,

Jacob Harrell

Coordination Unit
WVDNR – Wildlife Resources Section
1110 Railroad Street
Farmington, WV 26571
(304)704-9328
Jacob.D.Harrell@wv.gov

Yayac, Maggie

Subject: FW: Fish entrainment/impingement study consultation - Racine
Attachments: Racine Entrainment Consultation.pdf

From: Harrell, Jacob D [mailto:Jacob.D.Harrell@wv.gov]
Sent: Friday, February 7, 2020 1:55 PM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCorkle, Richard <richard_mccorkle@fws.gov>; John McCloskey <john_mccloskey@fws.gov>; Michael.Greenlee@dnr.state.oh.us; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; Elizabeth B Parcell <ebparcell@aep.com>
Subject: RE: Fish entrainment/impingement study consultation - Racine

Danielle,

It has come to my attention that the previous file I sent was missing a couple of pages. Here is the corrected and complete version of WVNR-WRS' comments.

Thanks,

Jacob Harrell

From: Harrell, Jacob D
Sent: Friday, February 07, 2020 1:04 PM
To: Hanson, Danielle <Danielle.Hanson@hdrinc.com>; Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCorkle, Richard <richard_mccorkle@fws.gov>; John McCloskey <john_mccloskey@fws.gov>; Michael.Greenlee@dnr.state.oh.us; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; Elizabeth B Parcell <ebparcell@aep.com>
Subject: Fish entrainment/impingement study consultation - Racine

Danielle,

Please find attached WVDNR-WRS response regarding the fish entrainment/impingement study at the Racine Project. If you have any questions, comments, or seek further clarification, please do not hesitate to contact me.

Thank you,

Jacob Harrell

Coordination Unit
WVDNR – Wildlife Resources Section
1110 Railroad Street
Farmington, WV 26571
(304)704-9328
Jacob.D.Harrell@wv.gov

DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
District 1
P.O. Box 99
1110 Railroad Street
Farmington, West Virginia 26571-0099
Telephone (304) 825-6787
Fax (304) 825-6270

Jim Justice
Governor

Stephen S. McDaniel
Director

February 7, 2020

Electronic File

Jonathan Magalski, Environmental Specialist Consultant
American Electric Power Services Corporation
1 Riverside Plaza
Columbus, OH 43215

RE: Racine Hydroelectric Project (FERC no. P-2570);
Fish Entrainment/Impingement Study Consultation

Dear Mr. Magalski:

Thank you for allowing an opportunity for the West Virginia Division of Natural Resources, Wildlife Resources Section (WRS) to provide consultation regarding the entrainment/impingement study for the Racine Project (FERC no. 2570). The WRS has reviewed the consultation document received by your offices on January 9, 2020. Based on our review, the WRS offers the following comments for your consideration.

Included Species

The purpose of the desktop entrainment analysis is to provide an estimation of the number and size of fish species that would suffer turbine-induced mortality (either instant or latent mortality

List of Species Likely Present at the Racine Project

American Eel	*Anguilla rostrate*
Banded Darter	*Etheostoma zonale*
Bigmouth Buffalo	*Ictiobus cyprinellus*
Black Buffalo	*Ictiobus niger*
Black Crappie	*Poxomis nigromaculatus*
Black Redhorse	*Moxostoma duquesni*
Blue catfish	*Ictalurus furcatus*
Bluebreast Darter	*Etheostoma camurum*
Bluegill	*Lepomis macrochirus*
Bluntnose minnow	*Pimephales notatus*
Brook silverside	*Labidesthes sicculus*
Bullhead minnow	*Pimephales vigilax*
Central Stoneroller	*Campostoma anomalum*
Channel catfish	*Ictalurus punctatus*
Channel Darter	*Percina copelandi*
Channel Shiner	*Notropis wickliffi*
Common Carp	*Cyprinus carpio*
Dusky Darter	*Percina sciera*
Eastern Banded Killifish	*Fundulus diaphanus*
Eastern Sand Darter	*Ammocrypta pellucida*
Emerald Shiner	*Notropis atherinoides*
Flathead Catfish	*Pylodictis olivaris*
Freshwater Drum	*Aplodinotus grunniens*
Ghost shiner	*Notropis buchanani*
Gilt Darter	*Percina evides*
Gizzard Shad	*Dorosoma cepedianum*
Golden Redhorse	*Moxostoma erythrurum*
Goldeye	*Hiodon alosoides*
Grass Carp	*Ctenopharyngodon Idella*
Green Sunfish	*Lepomis cyanellus*
Greenside Darter	*Etheostoma blennoides*
Highfin carpsucker	*Carpiodes velifer*
Hybrid Striped Bass	*Morone chrysops x M. saxatilis*
Johnny Darter	*Etheostoma nigrum*
Largemouth Bass	*Micropterus salmoides*
Logperch	*Percina caprodes*
Longear sunfish	*Lepomis megalotis*
Longnose Gar	*Lepisosteus osseus*
Mooneye	*Hiodon tergisus*
Northern Hogsucker	*Hypentelium nigricans*
Northern Muskellunge	*Esox masquinongy*
Orange Spotted Sunfish	*Lepomis humilis*
Paddlefish	*Polyodon spathula*

DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
District 1
P.O. Box 99
1110 Railroad Street
Farmington, West Virginia 26571-0099
Telephone (304) 825-6787
Fax (304) 825-6270

Jim Justice
Governor

Stephen S. McDaniel
Director

February 7, 2020

Electronic File

Jonathan Magalski, Environmental Specialist Consultant
American Electric Power Services Corporation
1 Riverside Plaza
Columbus, OH 43215

RE: Racine Hydroelectric Project (FERC no. P-2570);
Fish Entrainment/Impingement Study Consultation

Dear Mr. Magalski:

Thank you for allowing an opportunity for the West Virginia Division of Natural Resources, Wildlife Resources Section (WRS) to provide consultation regarding the entrainment/impingement study for the Racine Project (FERC no. 2570). The WRS has reviewed the consultation document received by your offices on January 9, 2020. Based on our review, the WRS offers the following comments for your consideration.

Included Species

The purpose of the desktop entrainment analysis is to provide an estimation of the number and size of fish species that would suffer turbine-induced mortality (either instant or latent mortality

via blade strikes or barometric pressure changes) for the fish species present at the Project location. This would include all species at the Project with a likelihood of passing through the turbine structures. The list provided in the consultation letter only includes 12 species, mostly gamefish species, but still not a complete representation of the fisheries community at the Project. The WRS, then, would request the inclusion of the total fisheries community within the entrainment study. Genera likely to suffer turbine-related mortality but that were not included in the January 9th consultation document would likely involve Esocids, Polyodontids, Centrarchids, Percds, Ictalurids, Lepisosteids, Cyprinid species and other species as observed through the accompanying fisheries surveys. A complete list has been provided for your convenience. For species with unavailable mortality data, a closely related surrogate species may be selected to represent it.

Study Schedule

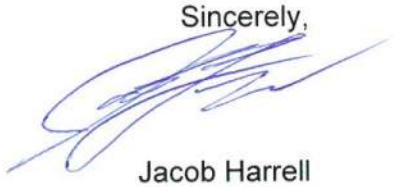
The consultation letter infers that the desktop entrainment study would be completed within the next few months. This would mean that the desktop study would be completed before the necessary fisheries community studies had concluded. This would offer an incomplete picture of the Project's impacts. One of the purposes of the fisheries community surveys was to help inform the desktop entrainment analysis. Therefore, the WRS would request that the commencement of the desktop entrainment study be delayed until after the conclusion of the fisheries surveys.

Size Classes

The WRS requests that data for the entrainment study be presented in 2-inch size classes up to the size class that would be excluded via the trash racks. Presenting the data as such will help to inform future mitigation requirements for fish loss.

Thank you again for allowing the WRS the opportunity to provide comments and for your consideration in this matter. If you have questions regarding this letter please contact me by telephone at (304)825-6787, or by email at Jacob.D.Harrell@wv.gov.

Sincerely,



Jacob Harrell
Hydropower Coordination Biologist

Cc: Rick MacCorkle, USFWS
John McClosky, USFWS
Michael Greenlee, ODNR
Steven Hincks, WVDNR
Danny Bennett, WVDNR

List of Species Likely Present at the Racine Project

American Eel	*Anguilla rostrate*
Banded Darter	*Etheostoma zonale*
Bigmouth Buffalo	*Ictiobus cyprinellus*
Black Buffalo	*Ictiobus niger*
Black Crappie	*Poxomis nigromaculatus*
Black Redhorse	*Moxostoma duquesni*
Blue catfish	*Ictalurus furcatus*
Bluebreast Darter	*Etheostoma camurum*
Bluegill	*Lepomis macrochirus*
Bluntnose minnow	*Pimephales notatus*
Brook silverside	*Labidesthes sicculus*
Bullhead minnow	*Pimephales vigilax*
Central Stoneroller	*Campostoma anomalum*
Channel catfish	*Ictalurus punctatus*
Channel Darter	*Percina copelandi*
Channel Shiner	*Notropis wickliffi*
Common Carp	*Cyprinus carpio*
Dusky Darter	*Percina sciera*
Eastern Banded Killifish	*Fundulus diaphanus*
Eastern Sand Darter	*Ammocrypta pellucida*
Emerald Shiner	*Notropis atherinoides*
Flathead Catfish	*Pylodictis olivaris*
Freshwater Drum	*Aplodinotus grunniens*
Ghost shiner	*Notropis buchanani*
Gilt Darter	*Percina evides*
Gizzard Shad	*Dorosoma cepedianum*
Golden Redhorse	*Moxostoma erythrurum*
Goldeye	*Hiodon alosoides*
Grass Carp	*Ctenopharyngodon Idella*
Green Sunfish	*Lepomis cyanellus*
Greenside Darter	*Etheostoma blennoides*
Highfin carpsucker	*Carpiodes velifer*
Hybrid Striped Bass	*Morone chrysops x M. saxatilis*
Johnny Darter	*Etheostoma nigrum*
Largemouth Bass	*Micropterus salmoides*
Logperch	*Percina caprodes*
Longear sunfish	*Lepomis megalotis*
Longnose Gar	*Lepisosteus osseus*
Mooneye	*Hiodon tergisus*
Northern Hogsucker	*Hypentelium nigricans*
Northern Muskellunge	*Esox masquinongy*
Orange Spotted Sunfish	*Lepomis humilis*
Paddlefish	*Polyodon spathula*

Pumpkinseed	*Lepomis gibbosus*
Quillback	*Carpiodes cyprinus*
Rainbow Darter	*Etheostoma caeruleum*
Redbreast sunfish	*Lepomis auritus*
Redear sunfish	*Lepomis microlophus*
River Carpsucker	*Carpiodes carpio*
River Darter	*Percina shumardi*
River redhorse	*Moxostoma carinatum*
River Shiner	*Notropis blennius*
Rock Bass	*Ambloplites rupestris*
Sand Shiner	*Notropis stramineus*
Sauger	*Sander canadensis*
Shoal Chub	*Macrhybopsis hyostoma*
Silver Chub	*Macrhybopsis storeriana*
Silver Lamprey	*Ichthyomyzon unicuspis*
Silver redhorse	*Moxostoma anisurum*
Silverjaw Minnow	*Notropis buccatus*
Skipjack herring	*Alosa chrysochloris*
Slenderhead Darter	*Percina phoxocephala*
Smallmouth Bass	*Micropterus dolomieu*
Smallmouth Buffalo	*Ictiobus bubalus*
Smallmouth redhorse	*Moxostoma breviceps*
Spotfin Shiner	*Cyprinella spiloptera*
Spottail Shiner	*Notropis hudsonius*
Spotted Bass	*Micropterus punctulatus*
Spotted Shiner	*Notropis hudsonius*
Spotted Sucker	*Minytrema melanops*
Steelcolor shiner	*Cyprinella whipplei*
Streamline Chub	*Erimystax dissimilis*
Striped Shiner	*Luxilus chrysocephalus*
Tippecanoe Darter	*Etheostoma tippecanoe*
Variegate Darter	*Etheostoma variatum*
Walleye	*Sander vitreus*
Warmouth Sunfish	*Lepomis gulosus*
Western Mosquitofish	*Gambusia affinis*
Western Sand Darter	*Ammocrypta clara*
White bass	*Morone chrysops*
White Crappie	*Pomoxis annularis*
Yellow Perch	*Perca flavescens*

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

Via Electronic Filing

February 13, 2020

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Racine Hydroelectric Project (FERC No. 2570-032)
Third Quarterly Study Progress Report

Dear Secretary Bose:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), hereby submits the Third Quarterly Study Progress Report for the Racine Hydroelectric Project (Project) (FERC No. 2570) relicensing.

AEPGR has elected to utilize the Integrated Licensing Process (ILP) for the relicensing of the Project as defined in 18 Code of Federal Regulations (C.F.R.) Part 5. As proposed in AEPGR's April 12, 2019 Revised Study Plan (RSP) and approved in the Federal Energy Regulatory Commission's (Commission) May 13, 2019 Study Plan Determination (SPD), AEPGR is hereby filing the Third Quarterly Study Progress Report for the Project. This progress report describes the activities performed since the SPD, as well as ILP activities generally expected to be conducted in quarter 2 (Q2) of 2020. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved RSP and the Commission's SPD.

1. Water Quality Study

- All field work associated with the Water Quality Study has been completed and AEPGR's subconsultant is currently compiling and analyzing the data collected for incorporation into the Initial Study Report (ISR).

2. Recreation Study

- Weatherproof boxes containing hardcopies of recreation survey questionnaires were deployed at the tailrace fishing access site in May 2019 and will remain in place until May 2020. A total of 18 hardcopy surveys have been completed to date.
- An online Visitor Use Survey was launched in May 2019 and is available at the Project's public relicensing website (www.aephydro.com/HydroPlant/Racine). Signs have been placed at multiple locations at the Project's tailrace fishing access site providing recreationists with the relevant information on how to access the online survey. A total of three online survey have been completed to date. The online survey will remain open through May 2020.

- Five trail cameras were installed at various locations (i.e., parking area entrance, parking area, fishing pier stairway, fishing pier, and picnic area) in May 2019 to document recreational usage of the Project's recreation facilities. These cameras are periodically downloaded and will remain in place until May 2020.
- AEPGR conducted interviews with interested stakeholders to gather additional information regarding recreation in the Project area and will provide a summary of those interviews in the ISR.
- Activities expected to occur in Q2 of 2020 include continued monitoring of any completed online and on-site survey forms and continued photo documentation of recreation in the Project area.

3. Cultural Resources Study

- All tasks associated with the Cultural Resources Study have been completed and the data collected is currently being compiled and analyzed for incorporation into the ISR.

4. Mussel Survey

- All field work associated with the Mussel Survey has been completed and AEPGR's subconsultant has finalized compiling and analyzing the data collected which will be incorporated into the ISR.

5. Fisheries Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage

- Per the May 13, 2019 SPD, AEPGR must conduct spring and fall fisheries surveys upstream and downstream of the Project when the water temperature is within optimal ranges specified by USFWS and WVDNR. By the time the SPD was issued, the water temperature in the Ohio River had already exceeded the optimal temperature range for the spring survey and therefore, the field work was not able to be performed in accordance with the SPD for the spring fisheries work in 2019. In consultation with USFWS and WVDNR, AEPGR completed the fall fisheries survey in October 2019. AEPGR plans to conduct the spring fisheries survey in Q2 when the water temperature is within the specified range.
- AEPGR has been consulting with the USFWS and WVDNR to determine the appropriate sampling methods for American eel. On December 9, 2019, AEPGR sent a letter to the USFWS and WVDNR informing them that AEPGR had decided to construct a temporary eel ramp at the Project to sample for American eel. AEPGR's consultants are currently in the process of designing a temporary eel ramp. Once an initial eel ramp design has been developed, AEPGR will consult with resource agencies regarding the design prior to construction of the ramp. AEPGR anticipates that eel sampling will begin in May of 2020.

6. Fish Entrainment and Impingement Study

- On January 1, 2020, AEPGR sent a letter to the USFWS, WVDNR and Ohio Department of Natural Resources (ODNR) with a proposed list of target fish species to be used in the

analysis for the Fish Entrainment and Impingement Study for review and comment. USFWS and WVDNR provided comments on the proposed target fish species list on January 30, 2020 and February 7, 2020, respectively. No comments have been received from ODNR. AEPGR will take these comments into consideration and continue to consult with these agencies during the implementation of this study.

- AEPGR is continuing to review Project operations and physical Project facilities that will be used in the evaluations for this study.

7. Eastern Spadefoot Toad Habitat Suitability Assessment

- AEPGR's consultant performing this study conducted an initial site visit to view the Project area in September. Additional surveys are expected to occur from April through June of 2020, during the peak period with the highest probability of finding eastern spadefoot toads.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Distribution List
Liz Parcell (AEP)
Rob Quiggle (HDR)

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Federal Agencies

Mr. John Eddins
Assistant Director
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001-2637

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 1st St NE
Washington, DC 20426

FEMA Region 3
615 Chestnut Street
One Independence Mall, Sixth Floor
Philadelphia, PA 19106-4404

FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, IL 60605

Mr. John Bullard
Regional Administrator
NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930-2276

Mr. Andrew Johnson
Water Quality Team Lead/Water Resources Engineering Section
US Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Ms. Belinda Weikle
Water Resources Engineering Section
U.S. Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Mr. Harold Peterson
Bureau of Indian Affairs
U.S. Department of the Interior
545 Marriott Dr, Suite 700
Nashville, TN 37214

Office of the Solicitor
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Mr. Lindy Nelson
Regional Environmental Officer, Office of Environmental Policy & Compliance
U.S. Department of the Interior,
Philadelphia Region
Custom House, Room 244
200 Chestnut Street
Philadelphia, PA 19106

Ms. Liz Pelloso
Wetland/Environmental Scientist - Region 5
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Barbara Rudnick
Region 3
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Ken Westlake
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Angela Boyer
Field Office Supervisor, Ohio Ecological Services Field Office
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Richard C. McCorkle
Fish and Wildlife Biologist, Pennsylvania Field Office
U.S. Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Mr. Marty Miller
Chief, Endangered Species - Northeast Region (Region 5)
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

Mr. John Schmidt
Acting Supervisor, West Virginia Field Office
U.S. Fish and Wildlife Service
694 Beverly Pike
Elkins, WV 26241

Ms. Alisa Shull
Chief, Endangered Species - Midwest Region (Region 3)
U.S. Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, MN 55437-1458

Mr. Jeremy S. White
West Virginia Water Science Center
U.S. Geological Survey
11 Dunbar Street
Charleston, WV 25301

Mr. Shaun M. Wicklein
Virginia Water Science Center
U.S. Geological Survey
1730 East Parham Road
Richmond, VA 23228

Ohio Office
U.S. Geological Survey
Ohio Water Science Center
6460 Busch Boulevard, Suite 100
Columbus, OH 43229-1737

Ohio Office
US Geological Survey
Field Office
1515 Brightwood Road SE
New Philadelphia, OH 44663

Hon. Bill Johnson
U.S. Congressman, 6th District
U.S. House of Representatives
1710 Longworth House Office Building
Washington, DC 20515

Mr. Michael Reynolds
Acting Director, Headquarters
U.S. National Park Service
1849 C Street, NW
Washington, DC 20240

Mr. Cameron Sholly
Regional Director, Midwest Region
U.S. National Park Service
601 Riverfront Drive
Omaha, NE 68102-4226

Hon. Sherrod Brown
U.S. Senate
713 Hart Senate Office Building
Washington, DC 20510

Hon. Rob Portman
U.S. Senate
448 Russell Senate Office Building
Washington, DC 20510

State Agencies

Ms. Audrey Blakeman
Geologist, Geological Survey Main Office
ODNR Division of Geological Survey
2045 Morse Road, Building C-1
Columbus, OH 43229-6693

Mr. Michael Bailey
Chief, Ohio State Parks & Watercraft
ODNR Division of State Parks & Watercraft
2045 Morse Road, Building C
Columbus, OH 43229-6693

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Ms. Mia Kannik
Program Manager, Ohio Dam Safety Program
ODNR Division of Water Resources
2045 Morse Road, Building B
Columbus, OH 43229-6693

Mr. Michael Greenlee
Fish Management Supervisor
ODNR Division of Wildlife
360 E. State Street
Athens, OH 45701

Mr. Steve Holland
Office of Coastal Management
Ohio Department of Natural Resources
105 West Shoreline Drive
Sandusky, OH 44870

Ms. Sarah Tebbe
State Headquarters
Ohio Department of Natural Resources
2045 Morse Road, Building G
Columbus, OH 43229

District 4, Southeast Ohio
Ohio Department of Natural Resources
360 E. State Street
Athens, OH 45701

Ohio Environmental Council
1145 Chesapeake Avenue, Suite 1
Columbus, OH 43212

Mr. Craig Butler
Ohio Environmental Protection Agency
2195 Front Street
Logan, OH 43138

Mr. Harry Kallipolitis
401 WQC/Storm Water Manager
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, OH 43215

Mr. Sam Dinkins
Technical Program Manager
Ohio River Valley Water Sanitation Commission (ORSANCO)
5735 Kellogg Avenue
Cincinnati, OH 45230

Ms. Krista Horrocks
Ohio History Center
State Historic Preservation Office
800 E. 17th Avenue
Columbus, OH 43211

Hon. Jay Edwards
District 94
The Ohio House of Representatives
77 S. High Street, 11th Floor
Columbus, OH 43215

Mr. Bob Peterson
Ohio Senate District 17
The Ohio Senate
Senate Building
1 Capitol Square, 1st Floor
Columbus, OH 43215

Mr. Kent Leonhardt
Commissioner
West Virginia Department of Agriculture
1900 Kanawha Boulevard E.
State Capitol, Room E-28
Charleston, WV 25305-0170

Mr. Brian Bridgewater
401 Certification Program Manager,
Division of Water and Waste Management
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Randall Reid-Smith
The Culture Center
West Virginia Division of Culture and History
1900 Kanawha Boulevard E.
Charleston, WV 25305

Mr. Danny Bennett
West Virginia Division of Natural Resources
738 Ward Road
Elkins, WV 26241

Mr. Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Ms. Barbara Sargent
Environmental Resources Specialist
West Virginia Division of Natural Resources
PO Box 67
Elkins, WV 26241-3235

Local Governments

Mr. Don Anderson
Mayor
City of Pomeroy
660 E. Main Street, #A
Pomeroy, OH 45769

Meigs County Commissioners
Meigs County
100 E. Second Street
Pomeroy, OH 45769

Mr. Steve Jenkins
Administrator
Meigs Soil and Water Conservation District
113 East Memorial Drive, Suite D
Pomeroy, OH 45769

Mr. Sam Anderson
Mayor
Town of Hartford
PO Box 96
Hartford, WV 25247

Ms. Roberta Hysell
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Greg Kaylor
Mayor
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Michael Gerlach
Mayor
Village of Middleport
659 Pearl Street
Middleport, OH 45760

Mr. J. Scott Hill
Mayor
Village of Racine
405 Main Street
PO Box 399
Racine, OH 45771

Tribes

Absentee Shawnee Tribe of Oklahoma
2025 South Gordon Cooper
Shawnee, OK 74801

Mr. Kim Penrod
Director, Cultural Resources/106 Archives, Library and Museum
Delaware Nation
31064 State Highway 281
PO Box 825
Anadarko, OK 73005

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Delaware Tribe of Indians
5100 Tuxedo Blvd.
Bartlesville, OK 74006

Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Eastern Shawnee Tribe of Oklahoma
PO Box 350
Seneca, MO 64865

Miami Tribe of Oklahoma
PO Box 1326
Miami, OK 74355

Dr. Andrea Hunter
Director, THPO
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Mr. James Munkres
Archaeologist
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Seneca-Cayuga Nation
23701 S. 655 Road
Grove, OK 74344

Shawnee Tribe
PO Box 189
29 S. Hwy 69A
Miami, OK 74355

Non-governmental Organizations

Mr. John Seebach
American Rivers
1104 14th St NW, Suite 1400
Washington, DC 20005

Mr. Kevin Richard Colburn
National Stewardship Director
American Whitewater
PO Box 1540
Cullowhee, NC 28779

Nature Conservancy
6375 Riverside Drive, Suite 100
Dublin, OH 43017

Mr. Richard Cogen
Executive Director
Ohio River Foundation
PO Box 42460
Cincinnati, OH 45242

Yayac, Maggie

Subject: FW: Requesting opportunity to review draft plans and designs for temporary eel ramp at Racine - P-2570
Attachments: 03022020 AEP Racine American Eel Ladder Methods_Compressed.pdf

From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Monday, March 2, 2020 1:09 PM
To: McCorkle, Richard <richard_mccorkle@fws.gov>; Jacob Harrell <jacob.d.harrell@wv.gov>; Mike Greenlee <michael.greenlee@dnr.state.oh.us>; McCloskey, John <john_mccloskey@fws.gov>; Hansbarger, Jeff L <Jeff.L.Hansbarger@wv.gov>
Cc: dczayka@enviroscienceinc.com; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; gzimmerman@enviroscienceinc.com; Elizabeth B Parcell <ebparcell@aep.com>; Hanson, Danielle <Danielle.Hanson@hdrinc.com>
Subject: RE: Requesting opportunity to review draft plans and designs for temporary eel ramp at Racine - P-2570

Good afternoon,

Please find attached the plans and design for the eel ramp to be installed at Racine around the end of this month. If you have any questions, concerns or feedback, please let us know as soon as possible. Thank you….Jon

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Jonathan M Magalski
Sent: Monday, February 24, 2020 1:11 PM
To: McCorkle, Richard <richard_mccorkle@fws.gov>
Cc: dczayka@enviroscienceinc.com; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; gzimmerman@enviroscienceinc.com; Jacob Harrell <jacob.d.harrell@wv.gov>; Mike Greenlee <michael.greenlee@dnr.state.oh.us>; McCloskey, John <john_mccloskey@fws.gov>; Hansbarger, Jeff L <Jeff.L.Hansbarger@wv.gov>; Elizabeth B Parcell <ebparcell@aep.com>
Subject: RE: Requesting opportunity to review draft plans and designs for temporary eel ramp at Racine - P-2570

Rick,

Thank you for reaching out, and my apologies for not responding sooner. I have been out of the office on business travel or vacation the past two weeks. AEP and our consultants (EnviroScience and HDR) are in the process of designing the eel ramp at Racine. To date, we have conducted a site visit to review the best location of the ramp and tank, identified power sources for the pump(s) and are in the process of contracting the work since it is out of scope from the original contracted studies. While AEP's consultants are actively working through the details and design drawings, narratively, the location and design are as follows:

1. The most suited ramp location is depicted on the aerial below. The location is situated on a bench and protected behind a security fence. A power source is not currently available, but is in process of being installed.

2. One 11 inch wide resin coated wood ramp approximately 70 feet long from the low water mark of the Ohio River to the tank is proposed.
3. The ramp will be covered with small chicken wire to first resting area, then covered to the holding tank to protect from predation.
4. The ramp will be placed at a slope no greater than 45 degree (slope of bank is between 20 and 45 degrees).
5. Two 12 inch resting areas will provided (approximately 30 in elevation change from low water level to tank, which the high water may reach).
6. Climbing substrate will be Milieu style (1.5 inch OD) PVC studs at a 42 millimeter spacing (rows of three then four alternating) for yellow eel greater than 150 millimeters in length.

As additional design details become available over the next few weeks, we will provide those to the group for comment (albeit it may be a relatively short comment period). In the meantime, please let me know if you have any feedback.

Since the key agency stakeholders are on this note, I want to give you a heads up that we plan to hold the Initial Study Report meeting on May 14th in Athens, Ohio. Additional details will be provided as the date approaches, but I wanted to get it on everyone's calendar.

I look forward to seeing you all in May. As always, please let me know if you have any questions. Thanks….Jon

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: McCorkle, Richard <richard_mccorkle@fws.gov>
Sent: Monday, February 10, 2020 2:49 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: dczayka@enviroscienceinc.com; Quiggle, Robert <Robert.Quiggle@hdrinc.com>; gzimmerman@enviroscienceinc.com; Jacob Harrell <jacob.d.harrell@wv.gov>; Mike Greenlee

<michael.greenlee@dnr.state.oh.us>; McCloskey, John <john_mccloskey@fws.gov>; Hansbarger, Jeff L <Jeff.L.Hansbarger@wv.gov>
Subject: [EXTERNAL] Requesting opportunity to review draft plans and designs for temporary eel ramp at Racine - P-2570

Jon,

I hope the new year is going well for you. Our lead fish passage engineer inquired about the plans and designs for the temporary eel ramp and monitoring effort at Racine. Will there be an opportunity for USFWS to review the draft plans and designs? At a minimum, we would be interested in at least a narrative description of the specific trap location, the proposed substrate for the ramp, the general trap design, and protocol for operating and checking the trap. Please let me know if we will have an opportunity for review.

Thanks for your consideration.

Rick

Richard C. McCorkle
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
814-206-7470

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation
increased and not impaired in value."

- President Theodore Roosevelt

RACINE HYDROELECTRIC PROJECT (FERC NO. 2570)

Temporary Upstream American Eel Ramp Design and Methodology

Prepared by:
EnviroScience Inc.
Stow, OH

March 2020

RACINE HYDROELECTRIC PROJECT (FERC NO. 2570)
Temporary Upstream American Eel Ramp Design and Methodology

TABLE OF CONTENTS

1.0 Introduction

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), is the Licensee, owner, and operator of the 47.5 megawatt Racine Hydroelectric Project (Project No. 2570) (Project or Racine Project), located on the Ohio River at Ohio River Mile (OHRM) 237.5, near the Town of Racine in Meigs County, Ohio. The Project is located at the U.S. Army Corps of Engineers' (USACE) Racine Locks and Dam and is operated in a run-of-river mode (Figures 1 and 2).

The existing license for the Project was issued by the Federal Energy Regulatory Commission (FERC or Commission) for a 50-year term, with an effective date of December 27, 1973 and expires November 30, 2023. Accordingly, AEPGR is pursuing a new license for the Project pursuant to the Commission's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5.

Pursuant to 18 CFR § 5.13(c), the Commission's Director of Energy Projects issued a Study Plan Determination (SPD) for the Project on May 13, 2019. In the SPD, FERC approved AEPGR's proposed Fisheries Study, with modifications. The modifications required by FERC include provisions for American Eel (*Anguilla rostrata*) surveys downstream from the Racine Locks and Dam.

In accordance with the approved study plan, AEPGR consulted with the West Virginia Division of Natural Resources (WVDNR), and U.S. Fish and Wildlife Service (USFWS) regarding the specific methods for the American Eel surveys. The USFWS and WVDNR have indicated that the installation of a temporary eel ramp at the Project is the preferred and most effective survey method. Accordingly, EnviroScience Inc. on behalf of AEPGR has prepared this Temporary Upstream American Eel Ramp Design and Methodology plan. This plan takes into account the USFWS's Fish Passage Engineering Design Criteria (USFWS 2019).

Figure 1. Project Location Map

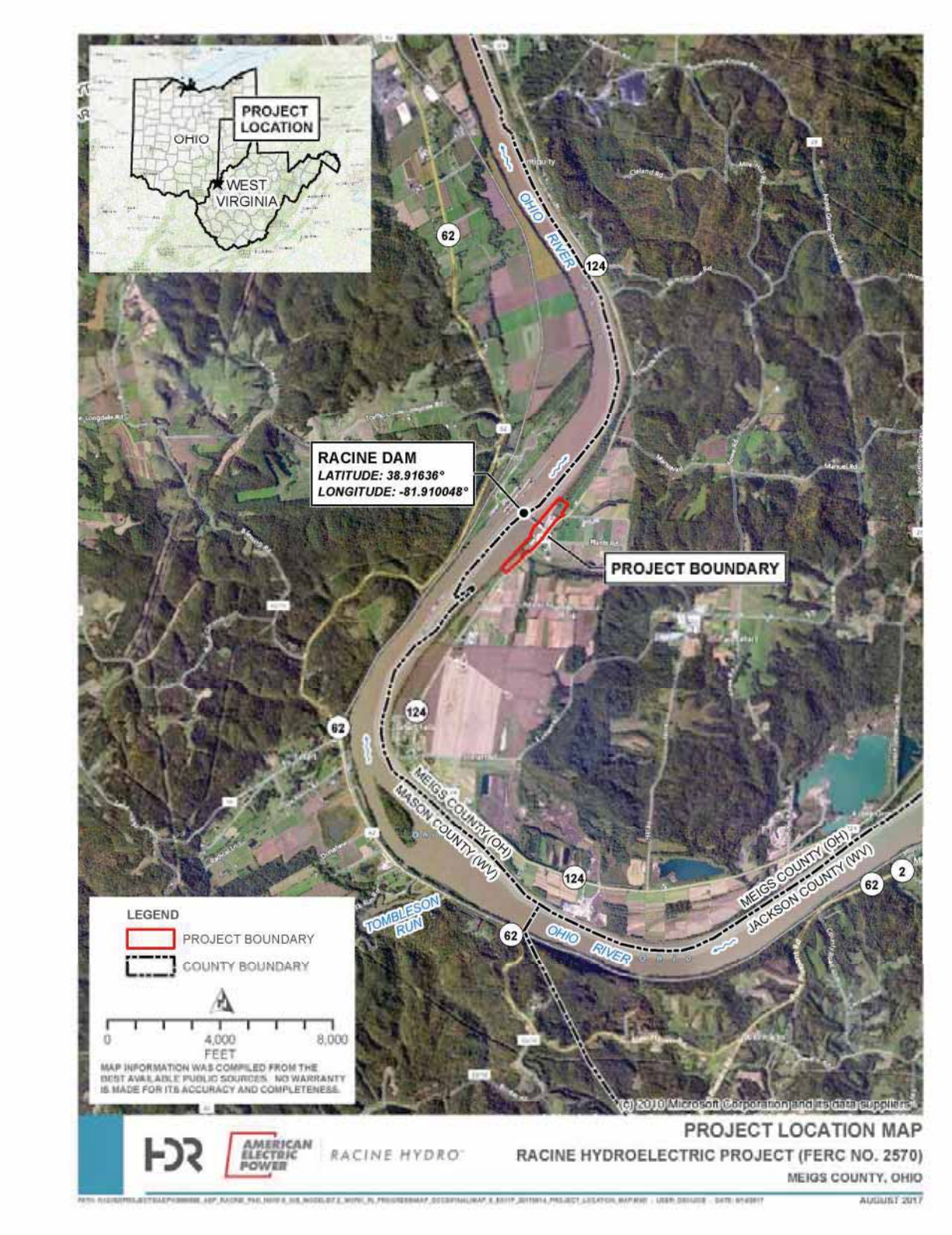
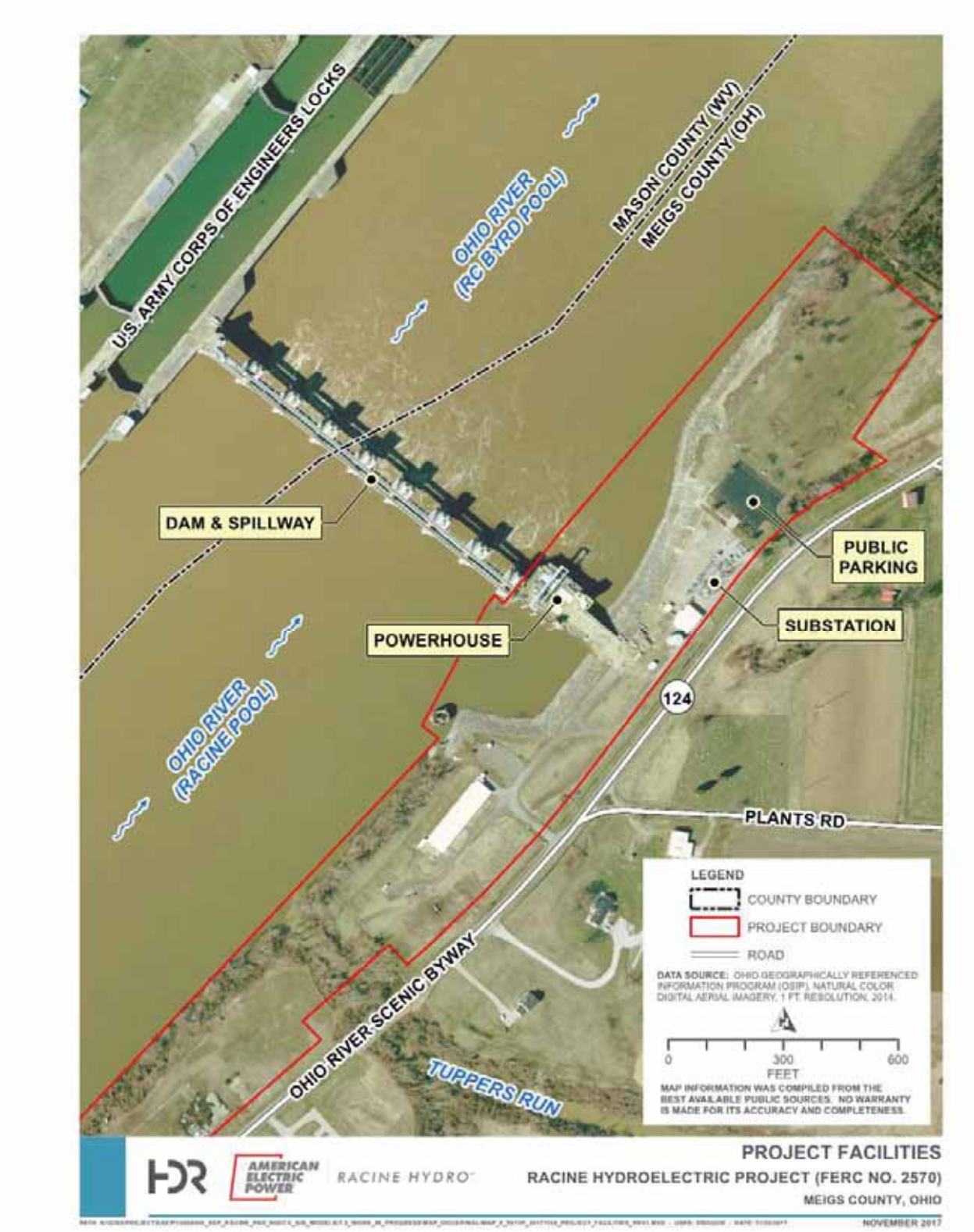


Figure 2. Aerial View of Project



2.0 Background and Project Area

The Project is located in the northeastern third of the Ohio River Basin, the most extensive drainage area in the eastern United States. The Ohio River is formed by the junction of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, and flows generally southwesterly to its confluence with the Mississippi River near Cairo, Illinois. The Ohio River basin has a drainage area of 203,900 square miles. The basin includes portions of 13 states and encompasses most of the area lying between the crest of the Alleghany Mountains on the southeast, the southern border of the Great Lakes, and the Mississippi River on the west. Major tributaries joining the mainstem include, in addition to the Allegheny and Monongahela Rivers, the Little Kanawha, Kanawha, Guyandot, Big Sandy, Licking, Kentucky, Muskingum, Hocking, Scioto, Little Miami, Miami, and Wabash Rivers

2.1 Stream Description

The Ohio River is approximately 981 miles long, starting at the confluence of the Allegheny and the Monongahela Rivers in Pittsburgh, Pennsylvania, and ending in Cairo, Illinois, where it flows into the Mississippi River. The Ohio River flows through or borders six states: Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia. In addition, water from parts of New York, Virginia, North Carolina, Tennessee, and Alabama drain into tributaries that empty into the Ohio River (Ohio River Foundation undated). The drainage area above the Racine Dam site is 40,130 square miles (AEP 2007). The Racine pool has an area of 5,300 acres.

2.2 Dams and Diversion Structures within the Basin

There are 20 USACE locks and dams located along the Ohio River, spanning across six states from Pennsylvania to Illinois**.** The Racine Locks and Dam is one of the 20 stair-step USACE dams used to facilitate navigation. It forms the 33.6-mile-long Racine pool, which extends upstream to the Belleville Locks and Dam at RM 203.9. The downstream pool (RC Byrd pool) extends from the Racine Locks and Dam to the RC Byrd Locks and Dam at RM 279.2. Eleven of the 20 USACE locks and dams have FERC-licensed hydroelectric facilities associated with them**.**

2.3 Project Facilities

The construction of the USACE's Racine Locks and Dam began in 1966 and the Racine Locks and Dam went into service in 1969. The hydroelectric facilities were completed in 1983 by the Ohio Power Company, a wholly-owned subsidiary of AEP. The Project was constructed by the Dravo Corporation. The Project is operated as a run-of-river hydroelectric generating facility in accordance with a February 25, 1983, operating agreement with the USACE.

The features associated with the FERC-licensed portion of the Racine Project include the water-retaining integral powerhouse/intake structure and a cellular cofferdam non-overflow section connecting the powerhouse to the right abutment. The balance of the development is owned, operated, and regulated by the USACE and is not part of the FERC-licensed Project. The USACE portions of the development include a short gravity section between the powerhouse and spillway, a 1,717-foot-long spillway, two lock structures at the left end of the spillway, and the left abutment.

3.0 Proposed Temporary Eel Ramp Location

A custom, temporary eel ramp (ramp) will be constructed and installed adjacent to the tailwater of the Racine Project. The purpose of this ramp is to document American Eels migrating upstream in the Ohio River at the Racine Project. The ramp will be installed for use during the period of American Eel migration from April to July 2020. Eels that successfully use the ramp will be collected and transported by a biologist to an area upstream of the Racine Project so that they may continue upstream migration.

The ramp will be located on the right descending bank of the Ohio River (Figure 3). The ramp will be installed so that all ramp and holding tank components will be located within the security fence surrounding the Racine Project to ensure the safety of migrating and collected eels from the general public.

Figure 3.0. Site Map of Racine Eel Study Area. HDR.

B Sample Location

Release Location

0 100 200 400 Feet

0 30 60 120 Meters

EnviroScience
Excellence In Any Environment

Date: 2/17/2020 Path: P:\09_Personnel\Plazza_Anna\5_Projects\HDR_Racine\Map1_Site.mxd

Basemap courtesy of Esri.

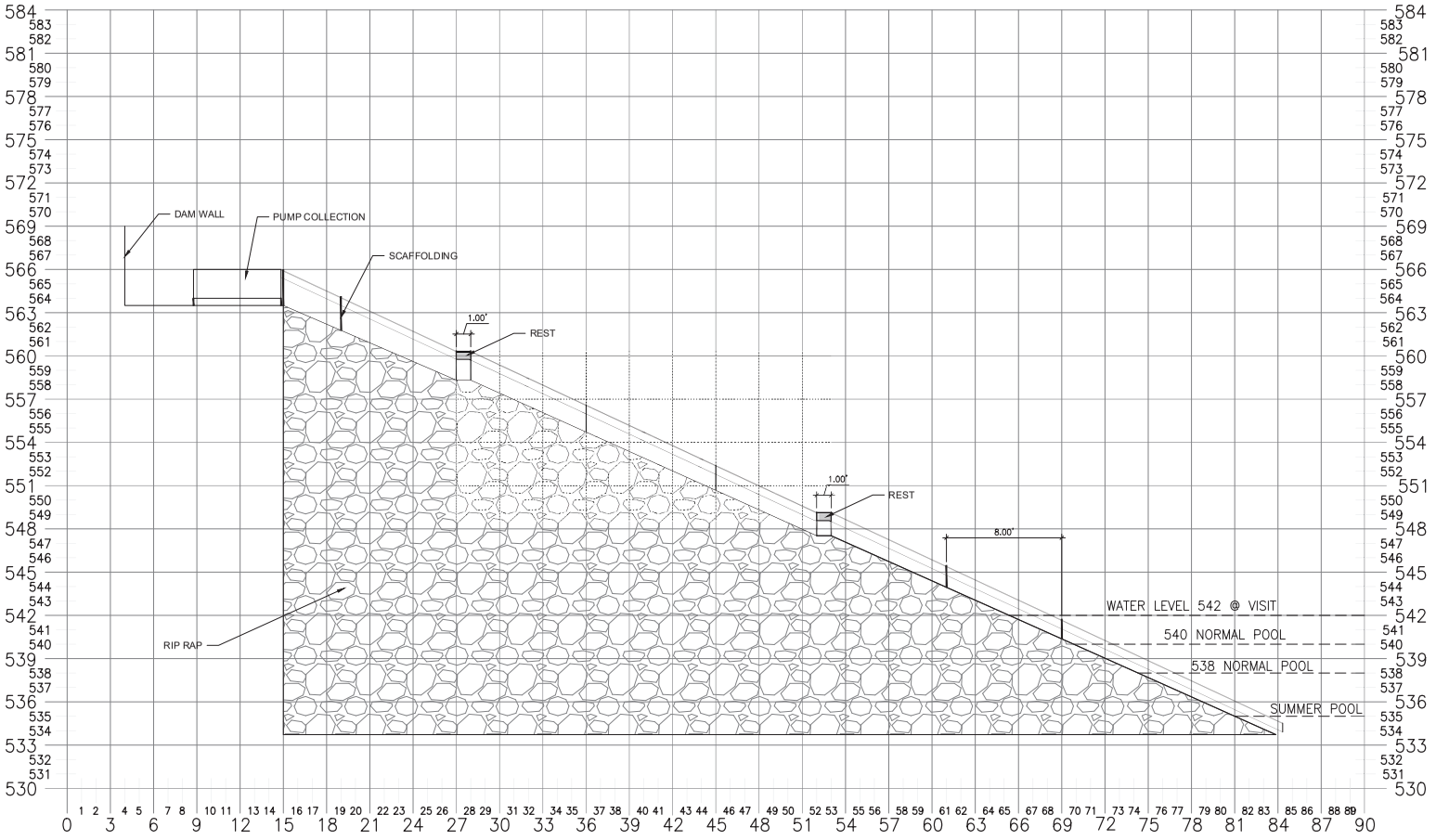
4.0 Temporary Eel Ramp Construction, Specifications, and Operations

4.1 Ramp Construction

The ramp will be constructed of 0.75-inch plywood with 0.5-inch plywood sides coated with epoxy. The dimensions of the ramp will be 11 inches wide with a side height of 6 inches (see Figure 4). The ramp will be approximately 71 feet long and will extend from the elevation of 536 to an elevation of 563 at an angle no greater than 45°. The entrance to the ramp will rest on the river substrate at an elevation so that, even during seasonal low flow periods, eels will always have access to the ramp. The ramp surface will remain wetted at all times and approximately 0.0625-inches to 0.125-inches of water will be maintained by pumping water down the full length of the ramp with a flow of approximately 50 gallons-per-minute. At the height of the ramp, above the tailwater surface elevation, an aerated covered opaque tank will serve as a holding container for eels that use the ramp.

The ramp will be covered with steel wire netting from the entry point up to elevation 550 feet to allow entry access to eels at varying water levels while also providing protection from predation. The remaining portion will be covered with material to prevent predation. The ramp will be supported by scaffolding installed every eight feet along the length of the ramp.

A total of two resting locations will be installed on the ramp and will be approximately every 10 vertical feet depending on water level. Resting pool sections will be equally as wide as the ramp and the length will be 12 inches long. Pools will contain at least 1 inch of water depth. Figure 4 and 5 illustrate the cross section and overhead view of the set up.



GENERAL NOTES

NO.	REVISION/ISSUE	DATE

30% DRAFT

EnviroScience
Excellence In Any Environment
Headquarters: 5070 Stow Road, Stow, OH 44224
800-940-4025 | EnviroScienceInc.com

RACINE Eel Survey

Figure 4.0

DETAILS

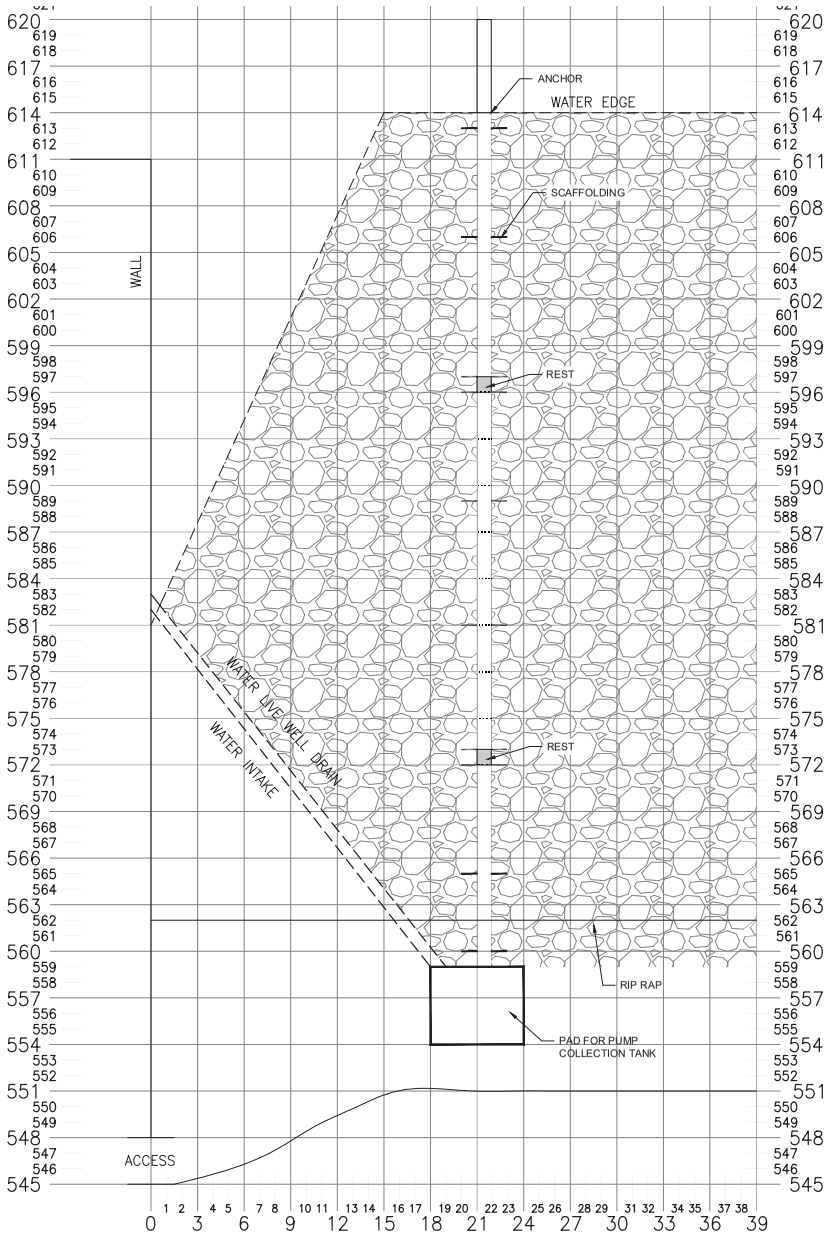
DESIGNED BY: DC
DRAWN BY: DG
CHECKED BY:

DATE: 2/14/2020

VERT. SCALE: NA
HORZ. SCALE: NA

SHEET: D-01

1 \ 3



GENERAL NOTES

NO.	REVISION/ISSUE	DATE

30% DRAFT

EnviroScience
Excellence In Any Environment
Headquarters: 5070 Stow Road, Stow, OH 44224
800-940-4025 | EnviroScienceInc.com

RACINE Eel Survey

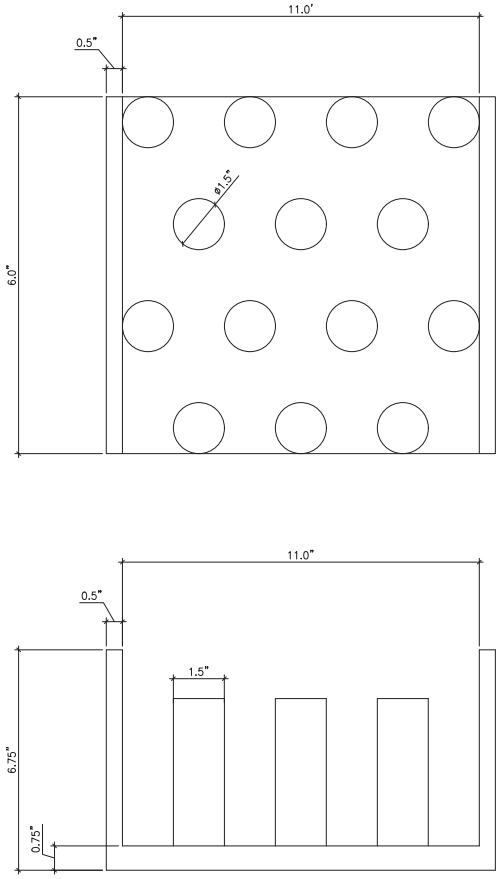
Figure 5.0

DETAILS

DESIGNED BY: DC
DRAWN BY: DG
CHECKED BY:
DATE: 2/14/2020
VERT. SCALE: NA
HORZ. SCALE: NA

SHEET: D-02

2 / 3



GENERAL NOTES

NO.	REVISION/ISSUE	DATE

30% DRAFT

EnviroScience
Excellence In Any Environment
Headquarters: 5070 Stow Road, Stow, OH 44224
800-940-4025 | EnviroScienceInc.com

RACINE Eel Survey

FIGURE 6.0
TROUGH CONFIGURATION

DETAILS

DESIGNED BY: DC
DRAWN BY: DG
CHECKED BY:

DATE: 2/14/2020

VERT. SCALE: NA
HORZ. SCALE: NA

SHEET:
D-03
3 / 3

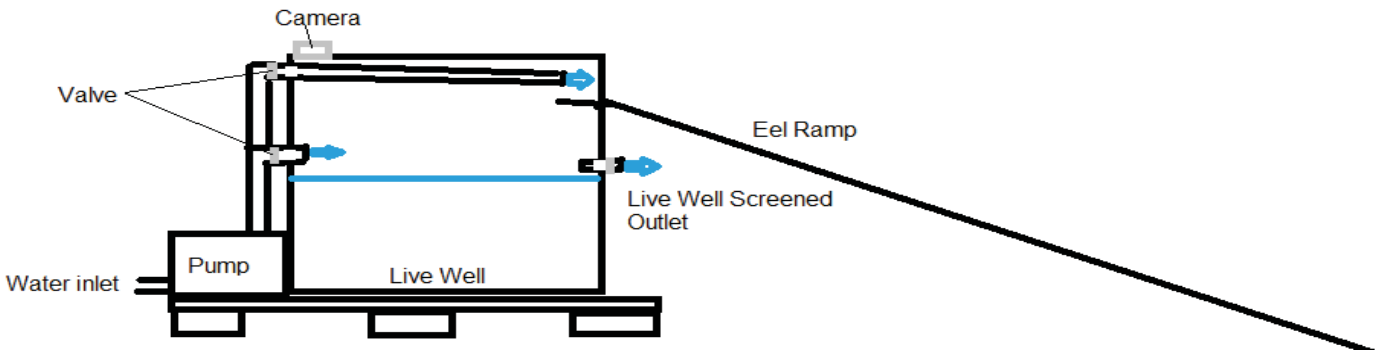
Ramp Substrate

A climbing substrate will be fabricated to the ramp to provide migrating eels with a means of navigating up the slope of the ramp. PVC pipe with 1.5-inch outside diameter will be attached to the ramp with 1.65 inches (42 mm) of spacing between studs. This spacing is used for eels greater than 5.9 inches (150 mm). Stud placement will alternate between 3 and 4 per row and will cover the entire length of the sloped ramp, not including resting pools (Figure 6).

4.2 Holding Tank, Eel Monitoring, and Release

The holding tank will be sized according to the anticipated volume of eels to be collected and will include a minimum of 1-foot of free-board with all escape avenues sealed or covered. Water in the holding tank will be from the Ohio River, and the water will be continuously aerated. Water depth will be adjusted via a screened outlet valve. The tank will be covered for protection, with a section of clear or opaque plastic to allow light into the holding tank. Monitoring will be completed by use of a cellular video camera with live streaming capabilities. The camera will be affixed to a sturdy structure in a location so that the holding tank can be observed for the presence of eels (Figure 7.0). Upon observation of an eel in the holding tank, biologists will arrive onsite within 24 hours. Biologists will record the length and weight of all collected individuals unless the number of individual exceed 50 specimens, where batch enumeration will occur. Biologists will then release the collected eels to a designated location upstream of the Racine Project, as illustrated in Figure 7. Additionally, biologist will complete weekly inspections to make adjustments and maintenance of system.

Figure 7. Holding Tank



5.0 Data Analysis and Reporting

5.1 Data Management

As outlined in the Revised Study Plan (RSP), AEPGR will provide the results of this survey in a final survey report. The report will summarize the analysis of existing fisheries data and incorporate the specific American Eel data, as well as describe the overall results of eel sampling conducted in support of Project relicensing, including occurrence, composition, relative abundances, game species condition, distribution, and habitat use. The report will include details of all sampling efforts. AEPGR will include tabular data summarizing length, weight, and size class of eels collected at the sampling location. AEPGR anticipates that the America Eel Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage study report will include the following elements:

- Project information and background
- Study area
- Methodology
- Study results
- Analysis and discussion
- Any agency correspondence and/or consultation
- Literature cited

6.0 Literature Cited

American Electric Power (AEP). 2007. Supporting Technical Information Racine Hydroelectric Project FERC No. 2570. American Electric Power. February 2007.

Ohio River Foundation. Undated. Ohio River Facts. Retrieved October 18, 2017. [Online] URL: http://www.ohioriverfdn.org/education/ohio_river_facts/.

U.S. Fish and Wildlife Service. 2019. Fish Passage Engineering Design Criteria. U.S. Fish and Wildlife Service, USFWS, Northeast Region R5, Hadley, Massachusetts.

Yayac, Maggie

Subject: FW: Updated Turbine Blade Strike Analysis Model, as well as updated Lambda Calibration for Eels to avoid overestimating mortality

---

From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Monday, March 9, 2020 7:09 AM
To: McCorkle, Richard <richard_mccorkle@fws.gov>
Cc: McCloskey, John <john_mccloskey@fws.gov>
Subject: RE: Updated Turbine Blade Strike Analysis Model, as well as updated Lambda Calibration for Eels to avoid overestimating mortality

Thanks, Rick. I will pass these along. We look forward to the Service's comments on the eel ramp and will let you know if there are questions on either. Have a great week….Jon

---

From: McCorkle, Richard <richard_mccorkle@fws.gov>
Sent: Monday, March 9, 2020 9:52 AM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCloskey, John <john_mccloskey@fws.gov>
Subject: [EXTERNAL] Updated Turbine Blade Strike Analysis Model, as well as updated Lambda Calibration for Eels to avoid overestimating mortality

Jon,

If I recall correctly, we previously provided the Excel-based turbine blade strike analysis (TBSA) model developed by our fish passage engineers, for possible use in the Racine entrainment and impingement study. The engineers just updated the model (attached), and they also did some analyses that determined that the standard Lambda model input of 0.2 results in overestimation of mortality for American eels passing through Kaplan or propeller turbines. As a result, they are recommending a different Lambda (0.42) for estimation of American eel blade strike-related mortality (see attached). I've also attached some release notes the engineers provided, describing updates to the TBSA model. Off the top of my head I can't remember who the lead consultant is for this study. Could you please forward this message with attachments to the appropriate person? Thanks!

On another note, our engineer did not get his input to us yet on the eel ramp design and monitoring plan, but he says he will get comments to me today. So we should have our comments to you soon, and then will file them to the docket.

Rick

Richard C. McCorkle
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
814-206-7470

*“The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation
increased and not impaired in value.”*

- President Theodore Roosevelt

Yayac, Maggie

Subject: FW: Updated Turbine Blade Strike Analysis Model, as well as updated Lambda Calibration for Eels to avoid overestimating mortality

Attachments: TBSA Lambda Calibration for Eels 200307.xlsm; Whats New in TBSA release 200301.txt; Turbine Blade Strike Analysis 200301 BETA.xlsm

From: McCorkle, Richard <richard_mccorkle@fws.gov>
Sent: Monday, March 9, 2020 9:52 AM
To: Jonathan M Magalski <jmmagalski@aep.com>
Cc: McCloskey, John <john_mccloskey@fws.gov>
Subject: [EXTERNAL] Updated Turbine Blade Strike Analysis Model, as well as updated Lambda Calibration for Eels to avoid overestimating mortality

Jon,

If I recall correctly, we previously provided the Excel-based turbine blade strike analysis (TBSA) model developed by our fish passage engineers, for possible use in the Racine entrainment and impingement study. The engineers just updated the model (attached), and they also did some analyses that determined that the standard Lambda model input of 0.2 results in overestimation of mortality for American eels passing through Kaplan or propeller turbines. As a result, they are recommending a different Lambda (0.42) for estimation of American eel blade strike-related mortality (see attached). I've also attached some release notes the engineers provided, describing updates to the TBSA model. Off the top of my head I can't remember who the lead consultant is for this study. Could you please forward this message with attachments to the appropriate person? Thanks!

On another note, our engineer did not get his input to us yet on the eel ramp design and monitoring plan, but he says he will get comments to me today. So we should have our comments to you soon, and then will file them to the docket.

Rick

Richard C. McCorkle
Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Pennsylvania Field Office
110 Radnor Road, Ste 101
State College, PA 16801
814-206-7470

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation
increased and not impaired in value."

- President Theodore Roosevelt

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

March 12, 2020

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-11.2
888 First St., NE
Washington, DC 20426

RE: Racine Hydroelectric Project (P-2570-032), American Eel Ramp Design and Methodology Comments

Dear Secretary Bose:

The U.S. Fish and Wildlife Service (Service) has reviewed the March 2020, *Temporary Upstream American Eel Ramp Design and Methodology* for the Racine Hydroelectric Project (FERC No. 2570), prepared by EnviroScience, Inc., on behalf of American Electric Power Generation Resources, Inc. (AEPGR). The Project is located at the U.S. Army Corps of Engineers' Racine Locks and Dam on the Ohio River at River Mile 237.5, near the Town of Racine in Meigs County, Ohio. The Project is operated in a run-of-river mode. This design and methodology was developed to address recommendations from the Service, the West Virginia Division of Natural Resources and the Federal Energy Regulatory Commission (Commission) regarding the need to survey for American eels downstream of the project. We offer the following comments:

Section 3.0, Proposed Temporary Eel Ramp Location: This section states the ramp will be installed for use during the period of American eel migration from April to July 2020. The Service previously recommended starting eel surveys in May 2020 or when water temperature reaches 15 degrees Celsius, and extending through the summer and early fall, until water temperature falls below 10 degrees Celsius. Conducting surveys only until July 2020 is not consistent with our earlier recommendations. The Service stands by the original recommendation that eel surveys be conducted into early fall, until the water temperature falls below 10 degrees Celsius. Eel monitoring over the entire season would be consistent with Commission staff's stated objective to characterize "the relative abundance and distribution of American eels downstream of the project to determine the timing, magnitude, and duration of upstream eel migration periods at the Racine Locks and Dam."

Section 4.1, Ramp Construction: This section states the ramp surface will remain wetted by pumping water down the full length of the ramp with a flow of approximately 50 gallons per minute (gpm). It is unclear if this flow is sufficient to attract eels to the entrance of the ramp. Ideally, the attraction flow

discharge should be greater than the surrounding Project discharge at the ramp location, but sufficiently limited to ensure smaller eels can successfully enter the ramp. Supplementary attraction flow may need to be delivered to the lower portion of the ramp to attract eels to the entrance. Service Fish Passage Engineering Design Criteria (USFWS 2019: Service Criteria) recommend an additional 5 gpm for each inch of ramp width above 8 inches; therefore, AEPGR should consider providing additional attraction flow to provide a total attraction flow of 65 gpm, considering the proposed 11-inch wide ramp.

Section 4.1, Ramp Construction, Ramp Substrate: While the proposed substrate (1.5-inch [38 mm] outside diameter PVC pipe) and spacing between studs may be acceptable, we note that the Service previously indicated that eels in the range of $\geq$ 300 mm (11.8 inches) in length should be designed for, considering the likely age of yellow eels that would be expected to migrate into the Project tailrace. AEPGR proposes a spacing of 1.65 inches (42 mm), which is used for eels greater than 5.9 inches (150 mm) long. Service Criteria recommend spacing of 30 to 80 mm (1.2 to 3.1 inches) for yellow eels of 150 mm in length or larger, with spacing correlated to eel size. The proposed spacing is near the lower end of this range, whereas yellow eels near the upper end of the above size range would be expected at the Project.

Sheet D-03: While we acknowledge there is no scale (V or H) associated with this detail drawing, the dimensions and spacing appear incorrect. Consider the (upper) plan view detail: The 11" wide channel shows four 1.5 inch studs arranged laterally; this implies a gap spacing of 1.67 inches. By contrast, the 6" long section with four 1.5 inch studs arranged longitudinally equates to zero gap. The figure is misleading because it shows comparable gaps in the lateral and longitudinal directions. The spacing and arrangement of these tubes is important. We suggest AEPGR revise this drawing to an accurate scale. We offer the following additional guidance: the studs should form a regular quincunx (i.e., an arrangement with four studs at the corners of a square and the fifth at its center).

Section 4.2, Holding Tank, Eel Monitoring, and Release: This section states the holding tank will be sized according to the anticipated volume of eels to be collected. It is not clear from this statement how the anticipated volume of eels will be determined. Because the anticipated volume is unknown, a higher volume of eels should be anticipated and thus a higher volume holding tank should be utilized to ensure overcrowding in the tank does not occur during monitoring. The Service recommends a minimum 15 gallon tank (2 cubic feet) be utilized.

Typically, we request eel traps be checked every day, and 2-3 days at most (USFWS 2019, Section 13.3). AEPGR proposes to check the trap weekly and supplement this with live streaming of the trap using a cellular video camera. To guard against failure of the pump at a remote site (which is not uncommon), we request AEPGR modify its protocol to include this provision: "In the even that connection to the live stream is lost, biologists will arrive on site within 24 hours to inspect the system, ensure its safe operation for eels and restart the live stream. If the live streaming cannot be re-started, biologists will ensure the tank is checked and the trap is cleared every 2-3 days."

This section suggests that the water in the holding tank will be "continuously aerated." We interpret this to mean "continuously resupplied with river water." If AEP is proposing to merely re-aerate the water using an air stone (or equivalent), we request more details on how and when the holding tank water will be recycled.

Thank you for considering our comments. If you have any questions regarding this matter, please contact Richard McCorkle of my staff at 814-206-7470.

Sincerely,

Sonja Jahrsdoerfer

Sonja Jahrsdoerfer
Project Leader

References:

USFWS (U.S. Fish and Wildlife Service). 2019. Fish Passage Engineering Design Criteria. USFWS, Northeast Region R5, Hadley, Massachusetts.

Yayac, Maggie

Subject: FW: April 14th Meeting

From: Jonathan M Magalski <jmmagalski@aep.com>
Sent: Wednesday, April 8, 2020 3:57 PM
To: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Subject: RE: April 14th Meeting

Hi Steve,

All is well here, sounds like you are doing just fine. All fisherman need to socially distance themselves, it's just good edict. I've been working from home since March 13. AEP did a great job implementing restrictions that continue to evolve. Unless you truly need to be in the office for your job, at a plant or out in the field to keep the lights on, we are ordered to work from home. Other precautions are being taken for those that can't work from home. We are also banned from travel and cannot hold any in-person meetings.

I apologize if I miscommunicated the Initial Study Report meeting date in Athens, but it's actually May 14. Although that's not for another month, we have already decided to hold it virtually. More details to come.

I hope you continue to stay safe and healthy. Enjoy the weather and keep those lines tight….Jon

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY™

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215

From: Jenkins, Steve - NRCS-CD, Pomeroy, OH <Steve.Jenkins@oh.nacdnet.net>
Sent: Wednesday, April 8, 2020 3:09 PM
To: Jonathan M Magalski <jmmagalski@aep.com>
Subject: [EXTERNAL] April 14th Meeting

Hi Jon,

Hope you and your family are staying safe and healthy.

Just wanted to let you know, if by chance you are still having your meeting in Athens next Tuesday, I will not be attending. Too much risk for a 64 year old man to attend a public meeting. Our office is on a one day staff member rotation schedule, so I am working in the office behind a locked door one day a week, Wednesdays, until the stay at home order is lifted.

However, the governor specifically stated that fishing was an acceptable reason to be on the road during the stay at home order. I have a screenshot of that written declaration on my phone. I am, accordingly, strictly adhering to the social distancing guidelines while fishing on the Ohio River bank as many days as possible. If you get closer than 6 feet from your neighbor while fishing, you can get your lines tangled up or hook your neighbor when casting. Then you have a mess to deal with or a fight on your hands. Not worth the risk ☺

At one of our office's conservation education programs called "Passport to Fishing" that we teach to 5th graders, we call that 6 foot social distancing a "safety circle". We've been teaching and practicing social distancing for years, just called it something else.

Please let me know if you reschedule your meeting, or have other meetings in the future.

Stay safe!!

Steve Jenkins
Administrator
Meigs SWCD
113 East Memorial Dr.
Suite D
Pomeroy,OH 45769
(740) 992-4282 ext.105
steve.jenkins@oh.nacdnet.net

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

Via Electronic Filing

May 5, 2020

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Racine Hydroelectric Project (FERC No. 2570)
Initial Study Report
Virtual Webex Meeting Scheduled for May 14, 2020

Dear Secretary Bose:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), is the Licensee, owner, and operator of the 47.5 megawatt Racine Hydroelectric Project (Project) (FERC Project No. 2570). The Project is located along the Ohio River in Meigs County, Ohio.

AEPGR operates and maintains the Project under a license from the Federal Energy Regulatory Commission (FERC or Commission). The Project's existing license expires on November 30, 2023. AEPGR is pursuing a new license for the Project using the Commission's Integrated Licensing Process (ILP) as defined in 18 Code of Federal Regulations (CFR) Part 5.

AEPGR has conducted studies as provided in the April 12, 2019 Revised Study Plan (RSP) and approved in the Commission's May 13, 2019 Study Plan Determination (SPD) for the Project. In accordance with 18 CFR §5.15, AEPGR is hereby filing the Initial Study Report (ISR) with the Commission. The ISR describes AEPGR's overall progress in implementing the study plan and schedule, summarizes available data, and describes any variances from the study plan and schedule approved by the Commission. Concurrent with this filing, the ISR is being made available to stakeholders on the Project's public relicensing website at www.aephydro.com/HydroPlant/Racine.

The Commission's regulations at 18 C.F.R. § 5.15(c) require AEPGR to hold an ISR Meeting with participants and FERC staff within 15 days of filing the ISR. Accordingly, AEPGR will hold an ISR Meeting (via Webex) from 9 AM to 4 PM on May 14, 2020.

To allow for adequate planning, AEPGR respectfully requests that those planning on joining the ISR Webex Meeting RSVP by emailing Jon Magalski at jmmagalski@aep.com on or before May 12, 2020.

If there are any questions regarding this filing, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Distribution List
Liz Parcell (AEP)
Rob Quiggle (HDR)

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Federal Agencies

Mr. John Eddins
Assistant Director
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001-2637

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 1st St NE
Washington, DC 20426

FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, IL 60605

FEMA Region 3
615 Chestnut Street
One Independence Mall, Sixth Floor
Philadelphia, PA 19106-4404

Mr. John Bullard
Regional Administrator
NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930-2276

Mr. Andrew Johnson
Water Quality Team Lead/Water Resources Engineering Section
US Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Ms. Belinda Weikle
Water Resources Engineering Section
US Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Mr. Harold Peterson
Bureau of Indian Affairs
US Department of the Interior
545 Marriott Dr, Suite 700
Nashville, TN 37214

Office of the Solicitor
US Department of the Interior
1849 C Street, NW
Washington, DC 20240

Mr. Lindy Nelson
Regional Environmental Officer, Office of Environmental Policy & Compliance
US Department of the Interior
Philadelphia Region
Custom House, Room 244
200 Chestnut Street
Philadelphia, PA 19106

Ms. Liz Pelloso
Wetland/Environmental Scientist - Region 5
US Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Mr. Ken Westlake
US Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Barbara Rudnick
Region 3
US Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Ms. Alisa Shull
Chief, Endangered Species - Midwest Region (Region 3)
US Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, MN 55437-1458

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Ms. Angela Boyer
Field Office Supervisor, Ohio Ecological Services Field Office
US Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Mr. Marty Miller
Chief, Endangered Species - Northeast Region (Region 5)
US Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

Mr. John Schmidt
Acting Supervisor, West Virginia Field Office
US Fish and Wildlife Service
694 Beverly Pike
Elkins, WV 26241

Mr. Richard C. McCorkle
Fish and Wildlife Biologist, Pennsylvania Field Office
US Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Ohio Office
US Geological Survey
Ohio Water Science Center
6460 Busch Boulevard, Suite 100
Columbus, OH 43229-1737

Ohio Office
US Geological Survey
Field Office
1515 Brightwood Road SE
New Philadelphia, OH 44663

Mr. Jeremy S. White
West Virginia Water Science Center
US Geological Survey
11 Dunbar Street
Charleston, WV 25301

Mr. Shaun M. Wicklein
Virginia Water Science Center
US Geological Survey
1730 East Parham Road
Richmond, VA 23228

Hon. Bill Johnson
US Congressman, 6th District
US House of Representatives
1710 Longworth House Office Building
Washington, DC 20515

Hon. Sherrod Brown
US Senate
713 Hart Senate Office Building
Washington, DC 20510

Hon. Rob Portman
US Senate
448 Russell Senate Office Building
Washington, DC 20510

Mr. Michael Reynolds
Acting Director, Headquarters
US National Park Service
1849 C Street, NW
Washington, DC 20240

Mr. Cameron Sholly
Regional Director, Midwest Region
US National Park Service
601 Riverfront Drive
Omaha, NE 68102-4226

State Agencies

District 4, Southeast Ohio
Ohio Department of Natural Resources
360 E. State Street
Athens, OH 45701

Ohio Environmental Council
1145 Chesapeake Avenue, Suite 1
Columbus, OH 43212

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Harry Kallipolitis
401 WQC/Storm Water Manager
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, OH 43215

Mr. Craig Butler
Ohio Environmental Protection Agency
2195 Front Street
Logan, OH 43138

Mr. Brian Bridgewater
401 Certification Program Manager,
Division of Water and Waste Management
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Hon. Jay Edwards
District 94
The Ohio House of Representatives
77 S. High Street, 11th Floor
Columbus, OH 43215

Mr. Steve Holland
Office of Coastal Management
Ohio Department of Natural Resources
105 West Shoreline Drive
Sandusky, OH 44870

Ms. Krista Horrocks
Ohio History Center
State Historic Preservation Office
800 E. 17th Avenue
Columbus, OH 43211

Mr. Bob Peterson
Ohio Senate District 17
The Ohio Senate
Senate Building
1 Capitol Square, 1st Floor
Columbus, OH 43215

Mr. Sam Dinkins
Technical Program Manager
Ohio River Valley Water Sanitation Commission (ORSANCO)
5735 Kellogg Avenue
Cincinnati, OH 45230

Ms. Sarah Tebbe
State Headquarters
Ohio Department of Natural Resources
2045 Morse Road, Building G
Columbus, OH 43229

Mr. Michael Greenlee
Fish Management Supervisor
ODNR Division of Wildlife
360 E. State Street
Athens, OH 45701

Ms. Mia Kannik
Program Manager, Ohio Dam Safety Program
ODNR Division of Water Resources
2045 Morse Road, Building B
Columbus, OH 43229-6693

Mr. Michael Bailey
Chief, Ohio State Parks & Watercraft
ODNR Division of State Parks & Watercraft
2045 Morse Road, Building C
Columbus, OH 43229-6693

Ms. Audrey Blakeman
Geologist, Geological Survey Main Office
ODNR Division of Geological Survey
2045 Morse Road, Building C-1
Columbus, OH 43229-6693

Ms. Barbara Sargent
Environmental Resources Specialist
West Virginia Division of Natural Resources
PO Box 67
Elkins, WV 26241-3235

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Mr. Danny Bennett
West Virginia Division of Natural Resources
738 Ward Road
Elkins, WV 26241

Mr. Randall Reid-Smith
The Culture Center
West Virginia Division of Culture and History
1900 Kanawha Boulevard E.
Charleston, WV 25305

Mr. Kent Leonhardt
Commissioner
West Virginia Department of Agriculture
1900 Kanawha Boulevard E.
State Capitol, Room E-28
Charleston, WV 25305-0170

Local Governments

Meigs County Commissioners
Meigs County
100 E. Second Street
Pomeroy, OH 45769

Mr. J. Scott Hill
Mayor
Village of Racine
405 Main Street
PO Box 399
Racine, OH 45771

Mr. Sam Anderson
Mayor
Town of Hartford
PO Box 96
Hartford, WV 25247

Mr. Don Anderson
Mayor
City of Pomeroy
660 E. Main Street, #A
Pomeroy, OH 45769

Ms. Roberta Hysell
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Greg Kaylor
Mayor
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Jenkins
Administrator
Meigs Soil and Water Conservation District
113 East Memorial Drive, Suite D
Pomeroy, OH 45769

Mr. Michael Gerlach
Mayor
Village of Middleport
659 Pearl Street
Middleport, OH 45760

Tribes

Mr. Kim Penrod
Director, Cultural Resources/106 Archives, Library and Museum
Delaware Nation
31064 State Highway 281
PO Box 825
Anadarko, OK 73005

Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Seneca-Cayuga Nation
23701 S. 655 Road
Grove, OK 74344

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Miami Tribe of Oklahoma
PO Box 1326
Miami, OK 74355

Eastern Shawnee Tribe of Oklahoma
PO Box 350
Seneca, MO 64865

Delaware Tribe of Indians
5100 Tuxedo Blvd.
Bartlesville, OK 74006

Absentee Shawnee Tribe of Oklahoma
2025 South Gordon Cooper
Shawnee, OK 74801

Mr. James Munkres
Archaeologist
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Dr. Andrea Hunter
Director, THPO
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Shawnee Tribe
PO Box 189
29 S. Hwy 69A
Miami, OK 74355

Non-governmental Organizations

Mr. John Seebach
American Rivers
1104 14th St NW, Suite 1400
Washington, DC 20005

Mr. Kevin Richard Colburn
National Stewardship Director
American Whitewater
PO Box 1540
Cullowhee, NC 28779

Mr. Richard Cogen
Executive Director
Ohio River Foundation
PO Box 42460
Cincinnati, OH 45242

Nature Conservancy
6375 Riverside Drive, Suite 100
Dublin, OH 43017

Initial Study Report

Racine Hydroelectric Project (FERC No. 2570)

May 5, 2020

Prepared by:

HDR

Prepared for:

AEP Generation Resources Inc.

AEP AMERICAN® ELECTRIC POWER

Yayac, Maggie

Subject: FW: Racine Hydroelectric Project (FERC No. 2570) --Filing of Initial Study Report
Attachments: 20200505 Racine ISR Cover Letter.pdf

From: Hanson, Danielle
Sent: Wednesday, May 6, 2020 8:30 AM
To: 'Advisory Council on Historic Preservation' <jeddins@achp.gov>; 'City of New Haven' <nhcityhall@frontier.com>; 'City of Pomeroy (Mayor)' <dmanderson242@hotmail.com>; 'Meigs Soil and Water Conservation district' <steve.jenkins@oh.nacdnet.net>; 'ODNR Division of Wildlife' <mike.greenlee@dnr.state.oh.us>; 'OH Rep Dist 94 - Jay Edwards' <JayEdwardsOhio@gmail.com>; 'OHEPA' <Craig.Butler@epa.ohio.gov>; 'Ohio Department of Natural Resources' <sarah.tebbe@dnr.state.oh.us>; 'Ohio Department of Natural Resources' <Steve.Holland@dnr.state.oh.us>; 'Ohio River Valley Water Sanitation Commission' <sdinkins@orsanco.org>; 'SHPO' <khorrocks@ohiohistory.org>; 'Town of New Haven (Mayor)' <bubba070260@gmail.com>; 'US Department of the Interior' <Harold.Peterson@bia.gov>; 'US Environmental Protection Agency' <pelloso.elizabeth@epa.gov>; 'USACE' <andrew.n.johnson@usace.army.mil>; 'USACE' <Belinda.M.Weikle@usace.army.mil>; 'USEPA' <Westlake.kenneth@epa.gov>; 'USEPA' <Rudnick.Barbara@epa.gov>; 'USFWS' <John_Schmidt@fws.gov>; 'USFWS' <richard_mccorkle@fws.gov>; 'USFWS' <angela_boyer@fws.gov>; 'USGS' <smwickle@usgs.gov>; 'USGS' <jswhite@usgs.gov>; 'Village of Racine' <racinemayor@suddenlinkmail.com>; 'Villgae of Middleport' <mayormike@village.middleport.oh.us>; 'West Virginia Division of Natural Resources' <danny.a.bennett@wv.gov>; 'West Virginia Division of Natural Resources' <jacob.d.harrell@wv.gov>; 'West Virginia Division of Natural Resources' <barbara.d.sargent@wv.gov>; 'WVDEP' <Brian.L.Bridgewater@wv.gov>
Cc: 'Jonathan M Magalski (jmmagalski@aep.com)' <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>; Quiggle, Robert <Robert.Quiggle@hdrinc.com>
Subject: Racine Hydroelectric Project (FERC No. 2570) --Filing of Initial Study Report

Racine Hydroelectric Project Stakeholders:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Racine Hydroelectric Project (FERC No. 2570) (Project) located on the Ohio River in Meigs County, Ohio. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on November 30, 2023. AEPGR is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP). Pursuant to the ILP, AEPGR filed the Initial Study Report (ISR) for the Project on May 5, 2020. The ISR describes the status and results of the studies that AEPGR conducted in support of Project relicensing.

On behalf of AEPGR, we are notifying stakeholders of the availability of the ISR. For your convenience, a copy of the cover letter filed with the ISR is attached. Please note that, due to file size restrictions, the ISR has not been included in this email. AEPGR encourages stakeholders to view the filing online at FERC's eLibrary at https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15529150. AEPGR will also be adding the ISR to the Project's public relicensing website (http://www.aephydro.com/HydroPlant/Racine) in the coming days.

The Commission's regulations at 18 C.F.R. § 5.15(c) require AEPGR to hold an ISR Meeting with participants and FERC staff within 15 days of filing the ISR. Accordingly, AEPGR will hold an ISR Meeting (via Webex) from 9 AM to 4 PM on May 14, 2020.

To allow for adequate planning, AEPGR respectfully requests that those planning on joining the ISR Webex Meeting RSVP by emailing Jon Magalski at jmmagalski@aep.com on or before close of business May 12, 2020.

Should you have any questions regarding this filing or the ISR Meeting, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

Thank you,

Danielle Hanson
Environmental Scientist

HDR
M 315.729.4745
Danielle.Hanson@hdrinc.com

hdrinc.com/follow-us

American Electric Power
1 Riverside Plaza
Columbus, OH 43215
aep.com

Via Electronic Filing

May 13, 2020

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Racine Hydroelectric Project (FERC No. 2570-032)
Fourth Quarterly Study Progress Report

Dear Secretary Bose:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), hereby submits the Fourth Quarterly Study Progress Report for the Racine Hydroelectric Project (Project) (FERC No. 2570) relicensing.

AEPGR has elected to utilize the Integrated Licensing Process (ILP) for the relicensing of the Project as defined in 18 Code of Federal Regulations (C.F.R.) Part 5. As proposed in AEPGR's April 12, 2019 Revised Study Plan (RSP) and approved in the Federal Energy Regulatory Commission's (Commission) May 13, 2019 Study Plan Determination (SPD), AEPGR is hereby filing the Fourth Quarterly Study Progress Report for the Project. This progress report describes the activities performed since the SPD, as well as ILP activities generally expected to be conducted in quarter 2 (Q2) of 2020. Unless otherwise described, all relicensing studies are being conducted in conformance with the approved RSP and the Commission's SPD.

1. Water Quality Study

- AEPGR deployed data loggers at three water quality locations on May 1, 2019. The SPD was subsequently issued on May 13, 2019, and required an additional water quality location. AEPGR deployed continuous data loggers at the fourth location on June 14, 2019. AEPGR began recording monthly routine water quality data at this location on July 12, 2019.
- The Water Quality Study has been completed in accordance with the RSP and the Commission's SPD. The technical report is included in Appendix B of the Initial Study Report (ISR).

2. Recreation Study

- Weatherproof boxes containing hardcopies of recreation survey questionnaires were deployed at the tailrace fishing access site in May 2019 and will remain in place until the end of May 2020. A total of 18 hardcopy surveys have been completed to date.
- An online Visitor Use Survey was launched in May 2019 and is available at the Project's public relicensing website (www.aephydro.com/HydroPlant/Racine). Signs have been

placed at multiple locations at the Project's tailrace fishing access site providing recreationists with the relevant information on how to access the online survey. A total of three online survey have been completed to date. The online survey will remain open through the end of May 2020.

- Five trail cameras were installed at various locations (i.e., parking area entrance, parking area, fishing pier stairway, fishing pier, and picnic area) in May 2019 to document recreational usage of the Project's recreation facilities. These cameras are periodically downloaded and will remain in place until the end of May 2020.
- Activities expected to occur in Q2 of 2020 include continued monitoring of any completed online and on-site survey forms, continued photo documentation of recreation in the Project area, and performing a Recreation Facilities Inventory and Condition Assessment.
- A summary of the results of activities performed to date is included in the ISR.

3. Cultural Resources Study

- The Cultural Resources Study has been completed in accordance with the RSP and the Commission's SPD. The technical report is included in Appendix C of the ISR and was filed with FERC as privileged.

4. Mussel Survey

- The Mussel Survey has been completed in accordance with the RSP and the Commission's SPD. The technical report is included in Appendix D of the ISR.

5. Fisheries Survey, Project Characteristics, and Project Operations Related to Potential Fish Passage

- AEPGR conducted the fall fisheries surveys upstream and downstream of the Project in November 2019. Based on consultation with resource agencies, AEPGR had planned to conduct the spring fisheries survey in 2020 when the water temperature was within the specified range. Additionally, AEPGR has been consulting with the U.S. Fish and Wildlife Service and West Virginia Division of Natural Resources to determine the appropriate sampling methods for American Eel. AEPGR has agreed to install a temporary eel ramp as early as May 2020. However, due to the unforeseen circumstances related to COVID-19, all field efforts have been suspended at this time. AEPGR will continue to assess the situation and work with resource agencies to determine the next best steps for completing this study.
- A summary of the results of activities performed to date is included in the ISR.

6. Fish Entrainment and Impingement Study

- The majority of the tasks in the Fish Entrainment and Impingement Study rely on the results from other studies such as the Water Quality Study and the Fisheries Survey. AEPGR has begun compiling this data and other Project-specific information that will be used in the analyses. Intake velocity data is anticipated to be collected in conjunction with the spring

fisheries survey. Upon completion of the Fisheries Survey, AEPGR will analyze all of the data and perform the analyses as described in the RSP. AEPGR will continue to consult with resource agencies regarding the list of target species and to refine the study protocols.

7. Eastern Spadefoot Toad Habitat Suitability Assessment

- A literature review and search of museum specimens was conducted in 2019. Additionally, an initial site visit was conducted in September 2019 to review the primary habitat indicators present at the Project. The Habitat Suitability Assessment Report is included in Appendix D of the ISR. Field surveys were expected to occur through June of 2020, during the peak period with the highest probability of finding Eastern Spadefoot Toads. However, due to COVID-19, all field efforts have been suspended at this time. AEPGR will continue to consult with resource agencies and stakeholders to determine the next best steps regarding this study.

8. Initial Study Report and Meeting

- AEPGR's ISR was filed with FERC on May 5, 2020. The Commission's regulations at 18 C.F.R. § 5.15(c) require AEPGR to hold a meeting with participants and FERC staff within 15 days of filing the ISR. Accordingly, AEPGR will hold an ISR Meeting via Webex on May 14, 2020. Additional details regarding the meeting are provided in the ISR.

If there are any questions regarding this progress report, please do not hesitate to contact me at (614) 716-2240 or jmmagalski@aep.com.

Sincerely,

Jonathan M. Magalski
Environmental Specialist Consultant
American Electric Power Services Corporation, Environmental Services

Cc: Distribution List
Liz Parcell (AEP)
Rob Quiggle (HDR)

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Federal Agencies

Mr. John Eddins
Assistant Director
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001-2637

Ms. Kimberly Bose
Secretary
Federal Energy Regulatory Commission
888 1st St NE
Washington, DC 20426

FEMA Region 3
615 Chestnut Street
One Independence Mall, Sixth Floor
Philadelphia, PA 19106-4404

FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, IL 60605

Mr. John Bullard
Regional Administrator
NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930-2276

Mr. Andrew Johnson
Water Quality Team Lead/Water Resources Engineering Section
US Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Ms. Belinda Weikle
Water Resources Engineering Section
U.S. Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, WV 25701-2070

Mr. Harold Peterson
Bureau of Indian Affairs
U.S. Department of the Interior
545 Marriott Dr, Suite 700
Nashville, TN 37214

Office of the Solicitor
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

Mr. Lindy Nelson
Regional Environmental Officer, Office of Environmental Policy & Compliance
U.S. Department of the Interior,
Philadelphia Region
Custom House, Room 244
200 Chestnut Street
Philadelphia, PA 19106

Ms. Liz Pelloso
Wetland/Environmental Scientist - Region 5
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Barbara Rudnick
Region 3
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Ken Westlake
U.S. Environmental Protection Agency
Ralph Metcalfe Federal Building
77 West Jackson Boulevard
Chicago, IL 60604-3590

Ms. Angela Boyer
Field Office Supervisor, Ohio Ecological Services Field Office
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Richard C. McCorkle
Fish and Wildlife Biologist, Pennsylvania Field Office
U.S. Fish and Wildlife Service
110 Radnor Road, Suite 101
State College, PA 16801

Mr. Marty Miller
Chief, Endangered Species - Northeast Region (Region 5)
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

Mr. John Schmidt
Acting Supervisor, West Virginia Field Office
U.S. Fish and Wildlife Service
694 Beverly Pike
Elkins, WV 26241

Ms. Alisa Shull
Chief, Endangered Species - Midwest Region (Region 3)
U.S. Fish and Wildlife Service
5600 American Boulevard West, Suite 990
Bloomington, MN 55437-1458

Mr. Jeremy S. White
West Virginia Water Science Center
U.S. Geological Survey
11 Dunbar Street
Charleston, WV 25301

Mr. Shaun M. Wicklein
Virginia Water Science Center
U.S. Geological Survey
1730 East Parham Road
Richmond, VA 23228

Ohio Office
U.S. Geological Survey
Ohio Water Science Center
6460 Busch Boulevard, Suite 100
Columbus, OH 43229-1737

Ohio Office
US Geological Survey
Field Office
1515 Brightwood Road SE
New Philadelphia, OH 44663

Hon. Bill Johnson
U.S. Congressman, 6th District
U.S. House of Representatives
1710 Longworth House Office Building
Washington, DC 20515

Mr. Michael Reynolds
Acting Director, Headquarters
U.S. National Park Service
1849 C Street, NW
Washington, DC 20240

Mr. Cameron Sholly
Regional Director, Midwest Region
U.S. National Park Service
601 Riverfront Drive
Omaha, NE 68102-4226

Hon. Sherrod Brown
U.S. Senate
713 Hart Senate Office Building
Washington, DC 20510

Hon. Rob Portman
U.S. Senate
448 Russell Senate Office Building
Washington, DC 20510

State Agencies

Ms. Audrey Blakeman
Geologist, Geological Survey Main Office
ODNR Division of Geological Survey
2045 Morse Road, Building C-1
Columbus, OH 43229-6693

Mr. Michael Bailey
Chief, Ohio State Parks & Watercraft
ODNR Division of State Parks & Watercraft
2045 Morse Road, Building C
Columbus, OH 43229-6693

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Ms. Mia Kannik
Program Manager, Ohio Dam Safety Program
ODNR Division of Water Resources
2045 Morse Road, Building B
Columbus, OH 43229-6693

Mr. Michael Greenlee
Fish Management Supervisor
ODNR Division of Wildlife
360 E. State Street
Athens, OH 45701

Mr. Steve Holland
Office of Coastal Management
Ohio Department of Natural Resources
105 West Shoreline Drive
Sandusky, OH 44870

Ms. Sarah Tebbe
State Headquarters
Ohio Department of Natural Resources
2045 Morse Road, Building G
Columbus, OH 43229

District 4, Southeast Ohio
Ohio Department of Natural Resources
360 E. State Street
Athens, OH 45701

Ohio Environmental Council
1145 Chesapeake Avenue, Suite 1
Columbus, OH 43212

Mr. Craig Butler
Ohio Environmental Protection Agency
2195 Front Street
Logan, OH 43138

Mr. Harry Kallipolitis
401 WQC/Storm Water Manager
Ohio Environmental Protection Agency
50 W. Town Street, Suite 700
Columbus, OH 43215

Mr. Sam Dinkins
Technical Program Manager
Ohio River Valley Water Sanitation Commission (ORSANCO)
5735 Kellogg Avenue
Cincinnati, OH 45230

Ms. Krista Horrocks
Ohio History Center
State Historic Preservation Office
800 E. 17th Avenue
Columbus, OH 43211

Hon. Jay Edwards
District 94
The Ohio House of Representatives
77 S. High Street, 11th Floor
Columbus, OH 43215

Mr. Bob Peterson
Ohio Senate District 17
The Ohio Senate
Senate Building
1 Capitol Square, 1st Floor
Columbus, OH 43215

Mr. Kent Leonhardt
Commissioner
West Virginia Department of Agriculture
1900 Kanawha Boulevard E.
State Capitol, Room E-28
Charleston, WV 25305-0170

Mr. Brian Bridgewater
401 Certification Program Manager,
Division of Water and Waste Management
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Mr. Randall Reid-Smith
The Culture Center
West Virginia Division of Culture and History
1900 Kanawha Boulevard E.
Charleston, WV 25305

Mr. Danny Bennett
West Virginia Division of Natural Resources
738 Ward Road
Elkins, WV 26241

Mr. Jacob Harrell
West Virginia Division of Natural Resources
1110 Railroad Street
Farmington, WV 26571

Ms. Barbara Sargent
Environmental Resources Specialist
West Virginia Division of Natural Resources
PO Box 67
Elkins, WV 26241-3235

Local Governments

Mr. Don Anderson
Mayor
City of Pomeroy
660 E. Main Street, #A
Pomeroy, OH 45769

Meigs County Commissioners
Meigs County
100 E. Second Street
Pomeroy, OH 45769

Mr. Steve Jenkins
Administrator
Meigs Soil and Water Conservation District
113 East Memorial Drive, Suite D
Pomeroy, OH 45769

Mr. Sam Anderson
Mayor
Town of Hartford
PO Box 96
Hartford, WV 25247

Ms. Roberta Hysell
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Greg Kaylor
Mayor
Town of New Haven
218 5th Street
New Haven, WV 25265

Mr. Michael Gerlach
Mayor
Village of Middleport
659 Pearl Street
Middleport, OH 45760

Mr. J. Scott Hill
Mayor
Village of Racine
405 Main Street
PO Box 399
Racine, OH 45771

Tribes

Absentee Shawnee Tribe of Oklahoma
2025 South Gordon Cooper
Shawnee, OK 74801

Mr. Kim Penrod
Director, Cultural Resources/106 Archives, Library and Museum
Delaware Nation
31064 State Highway 281
PO Box 825
Anadarko, OK 73005

Racine Hydroelectric Project (FERC No. 2570)
Distribution List

Delaware Tribe of Indians
5100 Tuxedo Blvd.
Bartlesville, OK 74006

Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Eastern Shawnee Tribe of Oklahoma
PO Box 350
Seneca, MO 64865

Miami Tribe of Oklahoma
PO Box 1326
Miami, OK 74355

Dr. Andrea Hunter
Director, THPO
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Mr. James Munkres
Archaeologist
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Seneca-Cayuga Nation
23701 S. 655 Road
Grove, OK 74344

Shawnee Tribe
PO Box 189
29 S. Hwy 69A
Miami, OK 74355

Non-governmental Organizations

Mr. John Seebach
American Rivers
1104 14th St NW, Suite 1400
Washington, DC 20005

Mr. Kevin Richard Colburn
National Stewardship Director
American Whitewater
PO Box 1540
Cullowhee, NC 28779

Nature Conservancy
6375 Riverside Drive, Suite 100
Dublin, OH 43017

Mr. Richard Cogen
Executive Director
Ohio River Foundation
PO Box 42460
Cincinnati, OH 45242

Yayac, Maggie

Subject: FW: Racine Hydroelectric Project (FERC No. 2570) -- Filing of Fourth Quarterly Study Progress Report
Attachments: 20200513 Racine 4th Quarterly Study Progress Report.pdf

From: Hanson, Danielle
Sent: Wednesday, May 13, 2020 7:24 PM
To: 'Advisory Council on Historic Preservation' <jeddins@achp.gov>; 'City of New Haven' <nhcityhall@frontier.com>; 'City of Pomeroy (Mayor)' <dmanderson242@hotmail.com>; 'Meigs Soil and Water Conservation district' <steve.jenkins@oh.nacdnet.net>; 'ODNR Division of Wildlife' <mike.greenlee@dnr.state.oh.us>; 'OH Rep Dist 94 - Jay Edwards' <JayEdwardsOhio@gmail.com>; 'OHEPA' <Craig.Butler@epa.ohio.gov>; 'Ohio Department of Natural Resources' <sarah.tebbe@dnr.state.oh.us>; 'Ohio Department of Natural Resources' <Steve.Holland@dnr.state.oh.us>; 'Ohio River Valley Water Sanitation Commission' <sdinkins@orsanco.org>; 'SHPO' <khorrocks@ohiohistory.org>; 'Town of New Haven (Mayor)' <bubba070260@gmail.com>; 'US Department of the Interior' <Harold.Peterson@bia.gov>; 'US Environmental Protection Agency' <pelloso.elizabeth@epa.gov>; 'USACE' <andrew.n.johnson@usace.army.mil>; 'USACE' <Belinda.M.Weikle@usace.army.mil>; 'USEPA' <Westlake.kenneth@epa.gov>; 'USEPA' <Rudnick.Barbara@epa.gov>; 'USFWS' <John_Schmidt@fws.gov>; 'USFWS' <richard_mccorkle@fws.gov>; 'USFWS' <angela_boyer@fws.gov>; 'USGS' <smwickle@usgs.gov>; 'USGS' <jswhite@usgs.gov>; 'Village of Racine' <racinemayor@suddenlinkmail.com>; 'Villgae of Middleport' <mayormike@village.middleport.oh.us>; 'West Virginia Division of Natural Resources' <danny.a.bennett@wv.gov>; 'West Virginia Division of Natural Resources' <jacob.d.harrell@wv.gov>; 'West Virginia Division of Natural Resources' <barbara.d.sargent@wv.gov>; 'WVDEP' <Brian.L.Bridgewater@wv.gov>
Cc: 'Jonathan M Magalski (jmmagalski@aep.com)' <jmmagalski@aep.com>; Elizabeth B Parcell <ebparcell@aep.com>; Quiggle, Robert <Robert.Quiggle@hdrinc.com>
Subject: Racine Hydroelectric Project (FERC No. 2570) -- Filing of Fourth Quarterly Study Progress Report

Racine Hydroelectric Project Stakeholders:

AEP Generation Resources Inc. (AEPGR), a unit of American Electric Power (AEP), is the licensee, owner and operator of the Racine Hydroelectric Project (FERC No. 2570) (Project) located on the Ohio River in Meigs County, Ohio. The Project is operated under a license issued by the Federal Energy Regulatory Commission (FERC). The existing FERC license for the Project expires on November 30, 2023. AEPGR is pursuing a new license for the continued operation of the Project in accordance with FERC's Integrated Licensing Process (ILP). As proposed in AEPGR's April 12, 2019 Revised Study Plan and approved in FERC's May 13, 2019 Study Plan Determination (SPD), AEPGR filed the Fourth Quarterly Study Progress Report for the Project on May 13, 2020. The progress report describes the study efforts that have been completed since FERC's SPD and study activities that are generally expected to be performed during quarter 2 of 2020.

On behalf of AEPGR, we are notifying stakeholders of the availability of the progress report. For your convenience, a copy of the progress report is attached.

Should you have any questions regarding this filing, please contact Jon Magalski with AEP at (614) 716-2240 or jmmagalski@aep.com.

Thank you,

Danielle Hanson
Environmental Scientist

HDR
M 315.729.4745
Danielle.Hanson@hdrinc.com

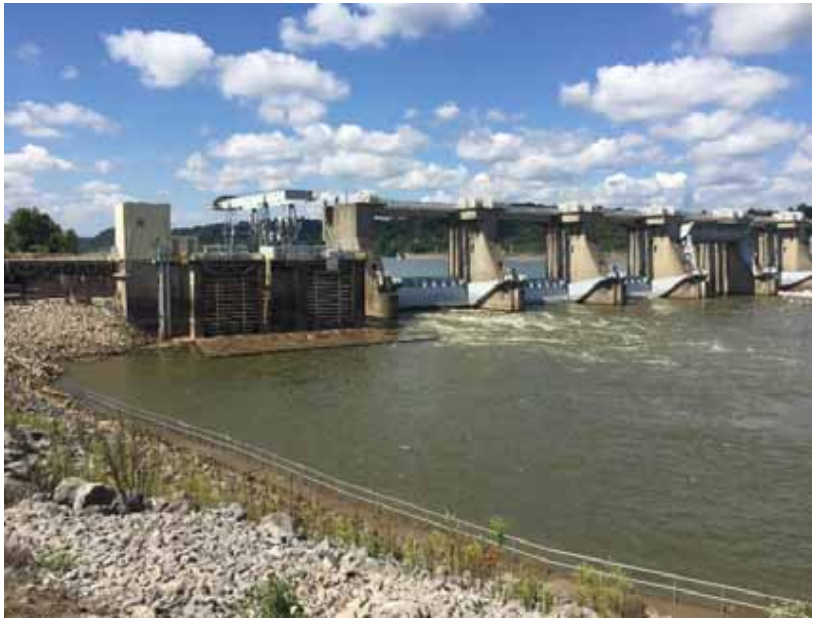
hdrinc.com/follow-us

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Racine Hydroelectric Project

Initial Study Report Meeting
May 14, 2020



BOUNDLESS ENERGY℠

Initial Study Report

- AEP Generation Resources Inc. (AEPGR) is pursuing a new license for the Project from the Federal Energy Regulatory Commission (FERC or Commission) in accordance with FERC's Integrated Licensing Process (ILP) at 18 CFR Part 5.
- Pursuant to the ILP, AEPGR developed an Initial Study Report (ISR) that was filed with the Commission on May 5, 2020.
  - The ISR describes AEPGR's overall progress in implementing the study plan and schedule approved in FERC's May 13, 2019 Study Plan Determination (SPD), the data collected, and any variances from the study plan and schedule.
- The Commission's regulations at 18 C.F.R. § 5.15(c) requires AEPGR to hold an ISR Meeting within 15 days of filing the ISR.
- The purpose of the ISR Meeting is to discuss available study results and any proposals to modify the study plans in light of the data collected.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Meeting Agenda

May 14, 2020	Schedule
Welcome and Introduction	9:00 AM – 9:10 AM
Water Quality Study	9:10 AM – 9:55 AM
Recreation Study	9:55 AM – 10:40 AM
Cultural Resources Study	10:40 AM – 11:25 AM
Break	11:25 AM – 11:35 AM
Mussel Survey	11:35 AM – 12:20 PM
Fisheries Survey	12:20 PM – 1:05 PM
Lunch Break	1:05 PM – 1:45 PM
Fish Entrainment and Impingement Study	1:45 PM – 2:30 PM
Eastern Spadefoot Toad Habitat Suitability Assessment	2:30 PM – 3:15 PM
Discussion and Questions	3:15 PM – 4:00 PM

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Process Plan and Schedule

Major Milestones	Responsible Party	Dates
File PAD and NOI (18 CFR §5.5(d))	AEPGR	July 2, 2018
Issue Notice of PAD/NOI and SD1 (18 CFR §5.8(a))	FERC	August 31, 2018
File Proposed Study Plan (PSP) (18 CFR §5.11)	AEPGR	December 14, 2018
Study Plan Meeting(s) (18 CFR §5.11(e))	AEPGR	January 10, and February 27, 2019
Comments on PSP (18 CFR §5.12)	Stakeholders	March 21, 2019
File Revised Study Plan (RSP) (18 CFR §5.13(a))	AEPGR	April 12, 2019
Comments on RSP Due (18 CFR §5.13(b))	Stakeholders	April 29, 2019
Issuance of Study Plan Determination (18 CFR §5.13(c))	FERC Director	May 13, 2019
Initial Study Report (ISR) (18 CFR §5.15(c))	**AEPGR**	**May 5, 2020**
File Updated Study Report (USR) (18 CFR §5.15(f)) (if necessary)	AEPGR	May 5, 2021
File Draft License Application (18 CFR §5.16(a))	AEPGR	July 3, 2021
File Final License Application (18 CFR §5.17)	AEPGR	November 30, 2021

Studies Approved in the SPD

FERC's May 13, 2019 SPD directed AEPGR to conduct 7 studies:

1. Water Quality Study
2. Recreation Study
3. Cultural Resources Study
4. Mussel Survey
5. Fisheries Survey
6. Fish Entrainment and Impingement Study
7. Eastern Spadefoot Habitat Suitability Assessment

BOUNDLESS ENERGY℠

Proposals to Modify Studies or for New Studies

At this time, AEPGR is not proposing any modifications or new studies.

- AEPGR will file an ISR Meeting Summary with the Commission on or before May 29, 2020.
- Stakeholders and FERC may file comments on the meeting summary, request modifications to studies, or request new studies on or before June 28, 2020.
  - If requesting modifications to studies, stakeholders must take into account FERC's Criteria for Modification of Approved Studies (18 C.F.R. § 5.15(d)).
  - If requesting new studies, stakeholders must take into account FERC's 7 Criteria for New Study (18 C.F.R. § 5.15(e)).

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Upcoming ILP Milestones

Milestone	Responsible Party	Date
File Initial Study Report Meeting Summary (18 CFR §5.15(c)(3))	AEPGR	5/29/2020
File Meeting Summary Disagreements (18 CFR §5.15(c)(4))	Stakeholders	6/28/2020
File Responses to Meeting Summary Disagreements (18 CFR §5.15(c)(5))	AEPGR	7/28/2020
Resolution of Disagreements (18 CFR §5.15(c)(6))	FERC	8/27/2020

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Water Quality Study

BOUNDLESS ENERGY℠

Water Quality Study

Study Status

AEPGR initiated and completed the Water Quality Study in accordance with the schedule and methods described in the RSP and SPD.

Summary of Study Methods and Results

- Continuous water temperature and dissolved oxygen (DO) data were collected at four locations using calibrated Onset® HOBO U26 DO Data Loggers. Data loggers were placed in the intake area (a pair of loggers was placed at two different depths at this location), tailrace, 2,000 feet downstream from the Project, and 0.8 miles downstream from the Project.
- The intake area, tailrace, and 0.8 mile downstream data loggers were deployed on May 1, 2019. Per the SPD, an additional location was required approximately 2,000 feet downstream from the Project on river left (looking downstream), which was deployed on June 14, 2019.
- All of the continuous data loggers recorded data until October 31, 2019.

Water Quality Study

- Discrete multi-parameter water quality measurements of temperature, DO, pH, and specific conductance were also collected at the four monitoring locations on a monthly basis from May through October 2019 using a calibrated YSI ProDSS multi-parameter water quality meter.
- Additionally, water quality profiles were collected at three locations in the reservoir on a monthly basis from May through October 2019.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Water Quality Study

BOUNDLESS ENERGY℠

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Water Quality Study

Continuous Water Temperature and DO Monitoring

- No exceedances for temperature were observed for period averages or instantaneous maxima during the monitoring period.
- State water quality standards for DO are regulated under two main criteria categories; outside mixing zone minimum (OMZM) and outside mixing zone minimum daily average (OMZA).
  - The study occurred during part of the Ohio River spawning season, and a more-protective OMZM criterion applies during this period, from April 15 to June 15.
  - Limited exceedances of spawning-season OMZM, OMZM, and OMZA criteria were observed during the monitoring period. Results were compared to Project operations data to examine potential correlation between exceedances and Project activities being performed during the time of exceedance. Monitoring station exceedances were also compared to their corresponding secondary logger data to determine if instrument fouling may have contributed to particular exceedances.

Water Quality Study

Routine Water Quality Monitoring

- No exceedances were observed during the routine water quality monitoring events for instantaneous maximum temperature criteria or OMZM DO criteria. The Downstream-02 monitoring station was established on June 14, 2019; however, routine monthly water quality monitoring data collection did not begin until July 12 at that location.

Reservoir Profile Data

- Profile locations MID and LOCK were located approximately 0.4 miles upstream of the Project, adjacent to the Intake-01/Intake-02 monitoring station, while PLANT profile data was collected from an access point adjacent to the Project intake.
- No exceedances were observed during the reservoir profile data collection for temperature or DO.
- Reservoir profiles for temperature and DO remained consistent throughout the monitoring period, with variations in temperature ranging from 0 degrees Celsius (°C) to 1.4°C, and variations in DO ranging from 0.03 mg/L to 2.9 mg/L.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Water Quality Study

Water Quality Study results and Project operations data were analyzed to determine if there were potential correlations between Project operations and observed exceedances of state water quality standards.

- DO exceedances of OMZM criteria were observed at the Downstream-01 monitoring station on May 24, June 2, June 3, June 4, June 6, and June 7. During this time, normal hydroelectric operations occurred.
- DO exceedances of OMZM criteria were observed at the Downstream-01 monitoring station on July 10, July 11, July 12, and September 9. An OMZA exceedance for DO was observed at the Downstream-01 monitoring station on July 11. At the Tailrace-01 monitoring station, OMZM exceedances were observed on September 9 and September 28. At the Intake-01 monitoring station, one reading exceeded the OMZM criteria on September 8. At the Intake-02 monitoring station, OMZA exceedances were observed on August 22, August 23, August 24, and August 25. During this time, hydroelectric operations were inactive, as AEPGR was replacing a 6.9 kilovolt cable and performing other structural repairs.
- DO exceedances of OMZM criteria were observed at the Tailrace-01 monitoring station on October 8 and October 9. During this time, normal hydroelectric operations occurred.
- Routine water quality monitoring data was consistent with the continuous water temperature and DO data. No exceedances for temperature or DO were observed during routine water quality monitoring events.
- No thermal or DO stratification or exceedances of temperature or DO criteria were observed within the reservoir intake area during the monitoring period.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Water Quality Study

- Continuous water quality results did not demonstrate any exceedances for temperature during the monitoring period; however, DO exceedances were observed during periods of normal hydroelectric operation as well as periods of hydroelectric inactivity.
- To further analyze the instances of DO exceedances, secondary logger data was evaluated during the same time intervals as the primary DO exceedances summarized previously.
- With the exception of Tailrace-01 on October 8 and October 9 (due to loss of the secondary logger at this location), secondary logger data did not indicate DO exceedances during the same periods when co-located primary loggers indicated exceedances. Thus, exceedances observed on the primary loggers were likely due to random fouling of the logger, as the co-located secondary loggers recorded DO readings that were compliant with state water quality standards.

Variances from FERC-approved Study Plan

Variances from FERC-approved Study Plan:

- AEPGR deployed data loggers at three out of four of the water quality locations on May 1, 2019. The SPD was subsequently issued on May 13, 2019, and required an additional water quality location. AEPGR deployed continuous data loggers at the fourth location on June 14, 2019. AEPGR began recording monthly routine water quality data at this location on July 12, 2019.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Recreation Study

BOUNDLESS ENERGY℠

Recreation Study

Study Status

AEPGR initiated the Recreation Study in accordance with the schedule and methods described in the RSP and SPD. AEPGR has installed survey boxes for hardcopy surveys, launched an online survey, installed trail cameras, and conducted phone interviews with interested stakeholders. AEPGR is continuing to collect visitor use data from hardcopy surveys, online surveys, and trail cameras through May 2020.

Summary of Study Methods and Results

- AEPGR developed a recreation survey and hardcopy forms were provided in weatherproof boxes at the tailrace fishing access site in May 2019. A total of 18 surveys have been completed to date.
- An online survey was also launched in May 2019 on the Project's relicensing website. Signs were also placed at multiple locations at the tailrace fishing access site notifying recreationists how to access the online survey. Three online surveys have been completed to date.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Recreation Study

- Based on the recreation surveys completed to date, 86 percent of the respondents are regular visitors who visit three or more times per year.
- Respondents travelled an average of 62 miles to the recreation area, with a range of one mile to 500 miles. Seventy-one percent of visitors traveled 40 miles or less to get to the Project.
- The two most common recreational activities survey respondents participated in were bank fishing (68 percent) and sight-seeing (47 percent).
  - Bank fishing was the most common primary recreation activity at 63 percent.
- Sixty-nine percent of survey respondents rated their overall experience at the Project as “totally acceptable.”
- The most common recommendations for recreational enhancements were: (1) more lighting, (2) handicap accessible fishing pier/ramp, and (3) increasing the length of the existing fishing pier/walkway past the riprap area.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Recreation Study

- Phone interviews were conducted with local fishermen who regularly fish at the Racine Project and in the Project vicinity (i.e., at the Belleville Project).
  - Participants were asked several questions regarding their general opinions of recreation in the vicinity of the Project, issues with the recreation facilities (i.e., crowding, safety), and recommendations for improvements to existing facilities.
- In general, the participants did not experience much crowding at the site, although there are times when the fishing pier gets too crowded. Similar to the survey questionnaire responses, there were concerns regarding safety and people walking on the riprap area downstream of the walkway to access fishing spots. Recommended improvements were to extend the existing walkway further upstream and downstream over the riprap area. A recommendation was also made to provide Americans with Disabilities Act (ADA)-accessible fishing piers.

Recreation Study

Remaining Tasks to Complete

- In May 2019, five trail cameras were installed at various locations (parking area entrance, parking area, fishing pier stairway, fishing pier, and picnic area) to document recreational usage of the Project's recreation facilities. These cameras are periodically downloaded and will remain in place until the end of May 2020. Data from the cameras has not been analyzed at this point and will be analyzed and summarized in the final study report upon completion of the study.
- Additionally, a Recreation Facility Inventory and Condition Assessment of the facilities at the tailrace fishing access site will be performed during 2020.
- AEPGR will also review historical records to document how many days per month the fishing pier has been under water in the past five years.

Variances from FERC-approved Study Plan

- The Recreation Survey has been conducted in full conformance with the Commission's SPD.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Cultural Resources Study

BOUNDLESS ENERGY℠

Cultural Resources Study

Study Status

AEPGR initiated and completed the Cultural Resources Study in accordance with the schedule and methods described in the RSP and SPD.

Summary of Study Methods and Results

- AEPGR consulted with the Ohio State Historic Preservation Office (SHPO), West Virginia Division of Culture and History, Delaware Nation, Eastern Band of Cherokee Indians, Seneca-Cayuga Nation, Miami Tribe of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Delaware Tribe of Indians, Shawnee Tribe, and the Osage Nation regarding the Project's Area of Potential Effects (APE).
  - AEPGR received a response from the Ohio SHPO stating that the recommended APE was adequate for any archaeological investigations that may be necessary on the Project site, but recommended a larger APE for potential visual impacts to surrounding historic structures in the area.
  - The West Virginia Division of Culture and History responded concurring with the proposed APE.
  - Delaware Nation sent a letter to AEPGR stating that the Project does not endanger cultural or religious sites of interest to the Delaware Nation.
  - AEPGR did not receive a response from any of the other Tribes.

Cultural Resources Study

- AEPGR retained Commonwealth Heritage Group (Commonwealth) to conduct the Cultural Resources Study at the Project. Commonwealth conducted: (1) records and literature review, (2) architecture history/field investigations, and (3) archaeological field investigations.
- Background investigations revealed that there were no previously recorded historic properties in the APE.
- Fieldwork resulted in the recordation of 13 built resources within the APE. None of these resources meet the minimum age criteria for listing in the National Register of Historic Places (NRHP) and none meet Criteria Consideration G for resources achieving significance within the past 50 years. These resources are, therefore, recommended not eligible for the NRHP.
  - The archaeological survey confirmed that a majority of the APE has been previously disturbed.
- As a result of these findings, Commonwealth recommended that additional cultural resources investigations of the APE are not necessary in order to meet the requirements of the National Historic Preservation Act or FERC's ILP.
- Based on the results of the Cultural Resources Study, AEPGR will consult with federally-recognized Indian Tribes to develop and conduct an inventory of properties of traditional religious and cultural importance (often referred to as "traditional cultural properties") within the APE and will provide the Commission with an inventory report in conjunction with the Draft License Application filing.

Variances from FERC-approved Study Plan

- The Cultural Resources Study has been conducted in full conformance with the Commission's SPD.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Mussel Survey

BOUNDLESS ENERGY℠

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Mussel Survey

Study Status

AEPGR initiated and completed the Mussel Survey in accordance with the schedule and methods described in the RSP and SPD.

Summary of Study Methods and Results

- Prior to conducting field surveys, the appropriate required scientific collector's permit was obtained from the U.S. Fish and Wildlife Service (USFWS) and West Virginia Division of Natural resources (WVDNR).
- The mussel surveys were conducted in September of 2019, according to 2018 WVDNR and USFWS' West Virginia Freshwater Mussel Survey Protocols and the August 19, 2019 Mussel Survey Plan approved by the USFWS and WVDNR.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Mussel Survey

- A Phase 1 transect (qualitative) from 250 meters (m) to 1,600 m downstream of the dam spaced at 50-m intervals were labeled as Phase 1-A transects. A total of 24 (180 m long) Phase I-A and 11 Phase 1-B transects extended perpendicular to flow from the right descending bank.
  - A total of 18 additional Phase 2 transects were triggered by the Phase 1-A and 1-B mussel survey. Following the transect survey, an additional 19 spot dives (10 minutes each) were completed.
- No federally listed mussel species were detected within the Project area, despite collecting 977 individuals.
- Mussel densities appeared to increase around Transect 1,200 m. At approximately Transect 1,200 m downstream of the dam, the Ohio River meanders northwest, and this part of the survey area falls on the outside bend of the river. Suitable mussel habitat was abundant and relatively high diversity was observed with an average of 7.4 species per transect. Transect 1,462.5 m contained 14 species, which was the most species-diverse transect within the survey area.
- Likely due to a lack of habitat and unstable conditions, a relatively small mussel community is occupying the region from the dam to approximately 1,200 m downstream. There appears to be a stable, recruiting mussel community beyond 1,200 m downstream of the dam that has likely persisted for several years based on the diversity and abundances observed in this survey.

BOUNDLESS ENERGY℠

Variances from FERC-approved Study Plan

Variances from FERC-approved Study Plan:

- After consultation with USFWS and WVDNR, AEPGR agreed to expand the scope of the Mussel Survey to include transects spaced every 50 m, and additional transects would be added upstream and downstream of the transects where the mussel diversity or density trigger was met for requiring a Phase 2 Survey.
- Transects were not completed per the approved Mussel Survey Plan upstream of Transect 450 m due to unsafe conditions (turbulent eddies and fast flow) caused by the hydraulic effects of the dam. Divers could not stay on the river bottom because of the current and the weight of the boat pulling on their umbilical line. Due to the substrate composition of mostly bedrock, the boat anchor was not able to embed itself in most areas. Only 50 m laterally of Transect 450 m was completed. Transects 400 m, 350 m, 300 m and 250 m could not be safely completed using the transect methods as described in Section 2.1 of the Mussel Survey Report. In lieu of transects, 43 spot dives were completed upstream of Transect 450 m in places where the boat could be anchored and divers could stay on the river bottom, but no mussels were detected during these spot dives. The total time spent on spot dives upstream of Transect 450 m was 850 minutes, which was the minimum amount of time required to complete the remaining 130 m of Transect 450 m and the entirety of Transects 400 m, 350 m, 300 m and 250 m.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Fisheries Survey

BOUNDLESS ENERGY℠

Fisheries Survey

Study Status

AEPGR initiated the Fisheries Survey in accordance with the schedule and methods described in the RSP and SPD. AEPGR is continuing to conduct the Fisheries Survey and the American eel sampling.

Summary of Study Methods and Results

- Prior to conducting field surveys, the appropriate required scientific collector's permit was obtained from the USFWS and WVDNR.
- The fall fisheries sampling was completed from November 11-13, 2019. Electrofishing was performed at five sites, two in Racine Pool (upstream of the dam) and three in RC Byrd Pool (downstream of the dam). Trawl surveys were performed at six locations, two locations within Racine Pool and four within RC Byrd Pool.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Fisheries Survey

BOUNDLESS ENERGY℠

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Fisheries Survey

- Upon completion of each 500-m transect (electrofishing or trawl), fish were processed. Processing included species identification, total length and weights (≤ 30 individuals of each species), presence of deformities, erosion, lesions, or tumors (DELTs), and representative photos of each species collected.
- Habitat assessments were performed at each site. Ohio River Valley Water Sanitation Commission (ORSANCO) Habitat Survey Data Sheets and Ohio Environmental Protection Agency (OHEPA) Qualitative Habitat Evaluation Index (QHEI) and Use Assessment Field Sheets were completed at each site.
- Prior to the start of sampling each day, above and below the dam, water quality sampling was monitored to determine conductivity for electrofishing. A YSI ProDSS multiparameter sonde was used to collect water quality data. Water quality parameters included temperature, pH, DO, and specific conductivity.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Fisheries Survey

- Fall fisheries surveys were performed when water temperatures were between 50-60 degrees Fahrenheit (°F) to ensure the survey was effective and consistent with previous WVDNR fish surveys. EnviroScience coordinated with WVDNR on temperature and approved timeframe for sampling.
- Boat electrofishing was completed using a Smith Root® 5.0 Generator Powered Pulsator (GPP) Electrofisher. Sampling was conducted at night to take advantage of the increased foraging activity and nocturnal movements of fish during this period. Sampling was completed in a downstream direction for 500 m. Shoreline habitat was targeted throughout the transect.
- Daytime trawl surveys were completed in two different habitat locations. The first habitat was 30 m off the bank, along the same path as the electrofishing transects. The second was two mid-channel, 500-m transects upstream and downstream of the Racine dam. Biologists used an 8-foot, mini-Missouri trawl net in a downstream direction and limited the duration of each transect to three one-minute trawls.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Fisheries Survey

Fisheries Survey

- The fall fisheries survey resulted in the collection of a total of 227 individuals, composed of 25 species. The most common species collected were Channel Catfish (*Ictalurus punctatus*) (n=41), Freshwater Drum (*Aplodinotus grunniens*) (n=37), Gizzard Shad (*Dorosoma cepedianum*) (n= 31), and Sauger (*Sander canadensis*) (n=30). In total, 170 individuals were collected during electrofishing and 57 collected by trawl.
- All 25 species were represented in the electrofishing survey while only two species were collected by trawl. Channel Catfish and Freshwater Drum were the only species collected by trawl. Additionally, the trawl sampling predominantly collected juvenile individuals. A single adult Channel Catfish was collected by trawl; all other individuals were young of year fish.

Fisheries Survey

Habitat Assessment

- Habitat was assessed at every site, including a QHEI, ORSANCO Habitat Survey Data Sheets, and depth range of trawl survey.
- Habitat assessments were similar between sites. QHEI scores ranged from 44 to 58.75. Differences in scores between upstream and downstream were slight. Transect T-1 had noticeably more flow than the other sites due to its vicinity to the dam's discharge. All other transects had minimal flow. Upstream site depths were deeper than downstream due to impoundment by the dam.

Fisheries Survey

Outstanding surveys

- Based on consultation with resource agencies, AEPGR had planned to conduct the spring fisheries survey in 2020 when the water temperature was within the specified range. Additionally, AEPGR has been consulting with the USFWS and WVDNR to determine the appropriate sampling methods for American eel. AEPGR has agreed to install a temporary eel ramp as early as May 2020. However, due to the unforeseen circumstances related to COVID-19, all field efforts have been suspended at this time. AEPGR is continuing to assess the situation and will work with resource agencies to determine the next best steps for completing this study.

Variances from FERC-approved Study Plan

Variances from FERC-approved Study Plan:

- Per the May 13, 2019 SPD, AEPGR must conduct spring and fall fisheries surveys upstream and downstream of the Project when the water temperature is within optimal ranges as specified by USFWS and WVDNR. By the time the SPD was issued, the water temperature in the Ohio River had already exceeded the optimal temperature range for the spring survey and, therefore, the field work was not able to be performed in accordance with the SPD for the spring fisheries work in 2019. AEPGR will work with resource agencies to determine the next best steps to complete the spring fisheries survey.

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Fish Entrainment and Impingement Study

BOUNDLESS ENERGY℠

Fish Entrainment and Impingement Study

Study Status

AEPGR initiated the Fish Entrainment and Impingement Study in accordance with the schedule and methods described in the RSP and SPD.

Summary of Study Methods and Results

- On January 9, 2020, AEPGR consulted with the USFWS, WVDNR, and ODNR regarding a proposed list of target fish species to be included in the desktop entrainment analysis.
  - On January 30, 2019, USFWS provided comments on AEPGR's proposed target fish species list. USFWS stated that the final selection of fish species to be evaluated should be postponed until the Fisheries Survey is completed to better understand the fish species that are present in the Project vicinity. USFWS recommended that the analysis include documented hosts for the federally listed endangered mussels that have potential to occur in the vicinity of the Project. Additionally, USFWS recommended that AEPGR evaluate percent survival in fish length increments of no more than two inches per increment.
  - On February 7, 2020, WVDNR commented that the entrainment analysis should be conducted upon the completion of the Fisheries Survey. WVDNR also provided a list of suggested fish species to be included in the desktop analysis.

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Fish Entrainment and Impingement Study

- A majority of the tasks in the Fish Entrainment and Impingement Study rely on the results from other studies such as the Water Quality Study and the Fisheries Study.
  - AEPGR has begun compiling this data and other Project-specific information that will be used in the analyses. Intake velocity data is anticipated to be collected in conjunction with the spring fisheries survey.
  - Upon completion of the Fisheries Survey, AEPGR will analyze all of the data and perform the analyses as described in the RSP.
  - AEPGR will continue to consult with resource agencies regarding the list of target species and to refine the study protocols.

Variances from FERC-approved Study Plan

The Fish Entrainment and Impingement Study has been conducted in full conformance with the Commission's SPD.

BOUNDLESS ENERGY℠

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

Eastern Spadefoot Toad Habitat Suitability Assessment

BOUNDLESS ENERGY℠

Eastern Spadefoot Toad Habitat Suitability Assessment

Study Status

AEPGR initiated the Eastern Spadefoot Toad Habitat Suitability Assessment in accordance with the schedule and methods described in the RSP and SPD.

Summary of Study Methods and Results

- A review of literature and a search for museum specimens was conducted to determine the history of Eastern Spadefoot distribution in the vicinity of the Project. Soils identified at the Project were compared to soil types at other known Eastern Spadefoot sites in Ohio.

Eastern Spadefoot Toad Habitat Suitability Assessment

Site Reconnaissance

- On September 9, 2019, an initial site visit was conducted to review the primary habitat indicators. During the site visit, four primary indicators of Eastern Spadefoot habitat were evaluated. These include (1) the presence of suitable breeding sites on or within 1,200 m of the Project; (2) the presence of an open canopy or open woodland habitat; (3) ground cover that can support sufficient Spadefoot forage (insects, spiders, etc.); and (4) the presence of friable soils at the Project. A fifth element in evaluating habitat is the historical presence of the species in the vicinity of the Project.

Habitat Quality Ranking

- The results of the site reconnaissance survey were combined with the literature and museum searches to assess the suitability of the Project area as Eastern Spadefoot habitat. If potential Eastern Spadefoot habitat (habitat ranked moderate or high quality) is present on site, a Presence – Absence Survey is recommended for the Project area to confirm the presence or absence of the species.
- Eastern Spadefoot habitat quality is ranked by the number of habitat indicators present and the history of known populations in the vicinity of the Project.
  - The habitat is determined to be of high quality if all five indicators are present. Four of five indicators rank the habitat to be of moderate quality, three indicators rank the habitat as low quality, and zero to two indicators rank the site as unsuitable for Eastern Spadefoots.

Eastern Spadefoot Toad Habitat Suitability Assessment

Museum Records and Literature Search

- The museum search provided records of Eastern Spadefoots from near the Project. Eastern Spadefoot tadpoles were collected from a flooded pool on the north side of Adams Road as close as 600 m from the southeast corner of the Project area. All were collected from 2003–2007.
- Reports of Eastern Spadefoots from the vicinity of the Project are also present in the literature (Moody, Davis, and Eggan, 2005; Davis 2013) but refer to the same specimens and localities discussed above. Johnson (2003) reported two populations that were documented from Mason County, West Virginia, which borders Meigs County across the Ohio River.
- An estimated 900 breeding pairs of Eastern Spadefoots were observed in three breeding pools between 2:30 a.m. and 4:15 a.m. in Meigs County (Davis 2013). During previous surveys conducted for American Municipal Power, adult and juvenile Spadefoots were found on rainy nights on East Letart, Adams, Plants, and Hill Roads, ranging from about 0.35 – 1 mile from the Project (Davis 2007, 2009).

Soil Evaluation

- The Conotton gravelly loam, the predominant soil at the Project, is used as burrowing habitat by Eastern Spadefoots at a site in Morgan County and the similar Chili gravelly loam is used at two sites in Tuscarawas County.

Site Visit

- During the site visit, the area inside the fence around the Project and the tailrace fishing access area were inspected on foot. Soil was examined for its suitability as Spadefoot burrowing habitat, burrow openings, and a search for potential breeding sites was conducted.
- During the September 9, 2019, site visit, it was noted that much of the area within the fenced area was covered with gravel and was being used as a staging area for construction materials. Soils were hard-packed or covered by the materials described above. The remaining areas (those not used as a staging area) were observed for evidence of burrows, but none were found. The tailrace recreation area northeast of the site was covered in dense sod, unsuitable for burrowing. However, between the area managed by AEPGR and the junction of Hill Road and State Route 124, there was a depression in which the vegetation differed from that of the surrounding area. The presence of hydrophilic plants suggest that it could serve as a potential breeding site for Eastern Spadefoots.

Eastern Spadefoot Toad Habitat Suitability Assessment

Habitat Quality at Project

- The Project is located on an inside bend of the Ohio River on a wide floodplain which has an extant population of Eastern Spadefoots. The soil type, gravelly loam, present at the Project, is used by the species within this same bend in the Ohio River and at other known sites in Ohio. Three known breeding sites have been documented in Meigs County and at least two potential breeding sites are within 170 m of the Project. Much of the potential burrowing habitat inside the fenced area has been severely disturbed by the installation of the laydown yard, the area paved with gravel, and the piles of soil and gravel.
- The tailrace recreation site at the north end of the site is of particular interest. Immediately outside the area maintained by AEPGR, there is a depression that has flooded historically and could serve as an Eastern Spadefoot breeding site.

Recommendations

- The habitat survey ranks the Project area as providing moderate quality Eastern Spadefoot habitat based on the findings reviewed above. A Presence – Absence Survey to determine if and how the Project area is used by this species is recommended as a follow up to the Habitat Survey.
- Field surveys were expected to occur through June 2020, during the time with the highest probability of finding Eastern Spadefoot. However, due to COVID-19, all field efforts have been suspended at this time. AEPGR will continue to consult with resource agencies and stakeholders to determine the next best steps regarding this study.

Variances from FERC-approved Study Plan

The Eastern Spadefoot Toad Habitat Suitability Assessment was conducted in full conformance with the Commission's SPD.

ISR Meeting: Stakeholder Participation

- AEPGR will file the Initial Study Report Meeting Summary with FERC by May 29, 2020.
- Meeting summary disagreements, requests for modifications to studies, or requests for new studies should be filed with FERC by June 28, 2020.
- AEPGR will file responses to meeting summary disagreements by July 28, 2020.
- FERC will make a determination on any disputes/amendments to the approved study plan by August 27, 2020.
- Stakeholders can contact AEPGR with questions or comments:

Jonathan Magalski
Environmental Specialist Consultant
American Electric Power Service Corporation
c/o AEP Generation Resources Inc.
1 Riverside Plaza, Columbus, OH 43215
(614) 716-2240
jmmagalski@aep.com

BOUNDLESS ENERGY℠

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

Closing

BOUNDLESS ENERGY℠

Yayac, Maggie

Subject: FW: AEPGR Racine Hydro Cultural Resources Report

From: Jonathan M Magalski [mailto:jmmagalski@aep.com]
Sent: Tuesday, May 19, 2020 7:20 AM
To: Belinda.M.Weikle@usace.army.mil; Lesli.F.StoneSmith@usace.army.mil
Cc: Hanson, Danielle <Danielle.Hanson@hdrinc.com>; Elizabeth B Parcell <ebparcell@aep.com>
Subject: AEPGR Racine Hydro Cultural Resources Report

Good morning Belinda and Lesli,

We appreciated your attendance and participation during the Racine ISR meeting last week. Per your request, below is a link to the Cultural Resources Study Report that was filed with FERC as privileged. Please let me know if you have any difficulties downloading the report. Also, please let me know if you have any questions regarding the report, any of the studies or questions in general. We look forward to working with you as we continue through the relicensing process….Jon

https://p2p.aep.com:443/AEPLargeFile/fileDownload.dsp?isEncrypted=true&isEnSet=true&fileStage=30&fileName=HzDWiCHazhased4dWhzt%2Fn5Z%2BvHj9sTFyPgxVlcZdv3W8f6KEmf1ojDR73RPnN%2Bov4JzYWkCpo0K%0D%0AeCc9xcm8qw%3D%3D&fop=bfe6a453a9ed4b4eb48f3217ff0781ac1&version=v2

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY

JONATHAN M MAGALSKI | **ENVIRONMENTAL SPEC CONSULT**
JMMAGALSKI@AEP.COM | D:614.716.2240
1 RIVERSIDE PLAZA, COLUMBUS, OH 43215