ALLEGHENY ELECTRIC COOPERATIVE, INC. APPLICATION FOR LOW IMPACT HYDROPOWER RECERTIFICATION

for the

Raystown Hydroelectric Project
FERC P-2769

July 2022

ALLEGHENY ELECTRIC COOPERATIVE, INC.
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FOR THE
RAYSTOWN HYDROELECTRIC PROJECT:
FERC PROJECT NO. P-2769

1. Facility Information

a. Introduction

The Raystown Hydroelectric Project, William F. Matson Generating Station is a 21,000 kW generating plant which is constructed at the US Army Corps of Engineers Raystown Lake Dam near Huntingdon, Pennsylvania (Figure 1). The Project is licensed by the Federal Energy Regulatory Commission (FERC) under License No. 2769-PA issued November 10, 1982, as amended. The Licensee and Operator of the Project is Allegheny Electric Cooperative, Inc. (Allegheny). Allegheny is a non-profit electric cooperative corporation incorporated under the Electric Cooperative Law of the Commonwealth of Pennsylvania. Allegheny is a generation and transmission cooperative and is the exclusive wholesale supplier of its 14 distribution cooperative members, which constitute Allegheny's owners. Allegheny receives transmission service under the PJM OATT and is a PJM Transmission Owner.

As noted by the license, the Raystown Project is "located at the existing Raystown Lake Dam and Reservoir owned and operated by the U.S. Army Corps of Engineers . . . . The project would occupy lands of the United States and would use a government dam." 21 FERC ¶ 62,239 at p. 63,394 (Figure 2). Specifically, the Project works include a multi-level gated intake structure near the right abutment of the dam (see Figure 5), a power tunnel and steel penstock (see Figure 7), a two-unit powerhouse immediately downstream of the dam with units having a total installed capacity of 21,000 kW (See Figure 3). Accordingly, the licensed project works do not include the Raystown Dam itself, which is owned and operated solely by the Army Corps of Engineers (COE). Allegheny has no control whatsoever over the operations of the dam or the amount of releases, which are authorized and effected solely by the COE.

Raystown Dam, managed by the COE, is located on the Raystown Branch of the Juniata River, about 5.5 miles upstream from its confluence with the Juniata River and 92 miles above the confluence of the Juniata River with the Susquehanna River. Raystown Dam and Raystown Lake are located in south central Pennsylvania in Huntingdon County, near the borough of Huntingdon. Construction of the dam began in October 1968 and was completed in October 1973. Raystown Dam, which is 225 feet high, consists of a rolled earth and rockfill embankment with a gated spillway in the right abutment, the top 3.5 feet of ungated spillway being a fuse plug of erodible backfill material. The gated spillway is controlled by two 45-foot square tainter gates and is equipped with a warm water outlet system with a 4.75-foot by 6.75-foot slide gate served by inlet ports at three levels. There is a low-level outlet tunnel with two 5.5-foot by 10-foot gates.

Allegheny operates the 21 megawatt (rated capacity) Raystown Hydroelectric Project (William F. Matson Generating Station) at Raystown Lake. The hydroelectric station, completed in 1988, is located at the base of Raystown Dam and is operated in close cooperation with the COE. The COE gives all flow and temperature regulating instructions to Allegheny. Constant flow discharges are adjusted on a daily basis to minimize fluctuations downstream. The hydroelectric station control facilities are separate from those of the COE facilities. The hydroelectric station intake structure has the capability of withdrawing water from different levels of the lake for downstream temperature control. Intake trash rack clear spacing is 3 inches. Flow velocities at the intake are maintained at less than or equal to 3 feet per second. The concrete tunnel stretching from the intake tower to the powerhouse is 12 feet in diameter and 930 feet long. The steel lined penstock is 12 feet in diameter and 550 feet long. There are two power generating units in the powerhouse. Unit 1 has a flow range of 200 to 600 cubic feet per second (cfs) and a rated output of 7 megawatts. Unit 2 has a flow range of 500 to 1100 cfs and a rated output of 14 megawatts. 22 adjustable wicket gates control flow through each unit. Flow is also regulated by the closure of two turbine shut-off valves located upstream of the generating units. Flow through the tunnel, penstock, and powerhouse can be regulated by the closure of a 12-foot square wheel gate located in the intake structure.

b. Compliance Status

The Project is licensed by the Federal Energy Regulatory Commission (FERC) under License No. 2769-PA issued November 10, 1982, as amended. The license expires in October 31, 2032. There are no current open issues with FERC compliance. The facility was the first Low Impact Hydro Institute certified facility in Pennsylvania. The initial certification was granted in August 2006 and was recertified in August 2014.

c. Overview

i. Project Location

The Raystown Hydroelectric Project is located in central Pennsylvania at the base of Raystown Dam and approximately 125 miles and 2.5 hours east of Pittsburgh.

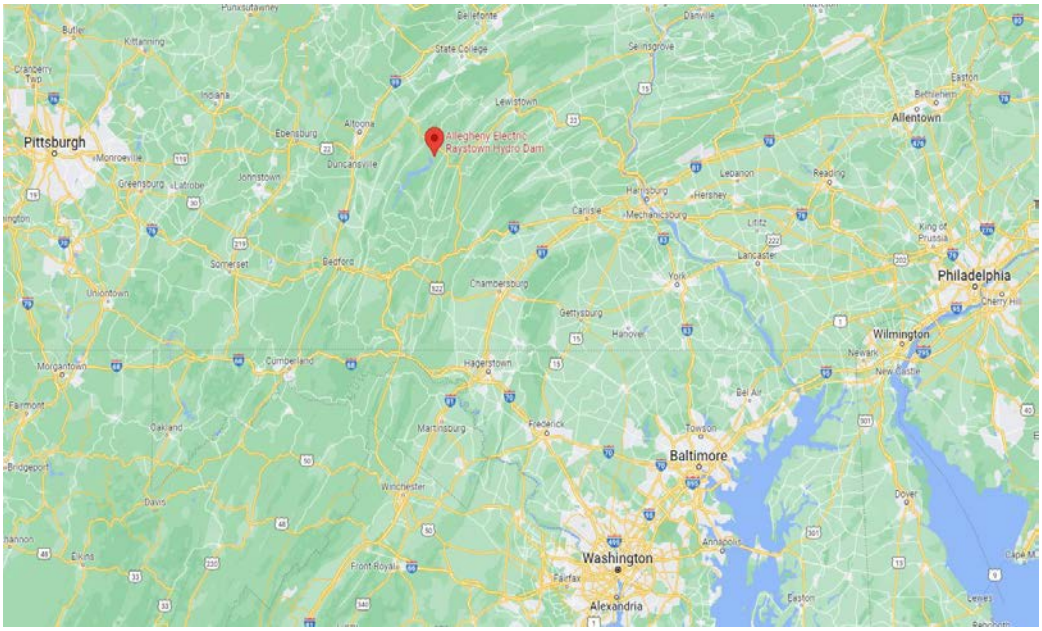

Figure 1. Project Location.

ii. Dam overview

See Figure 2 below for the Dam works and powerhouse. Attachment J shows the FERC project boundaries for a total of approximately 11.5 acres**.**

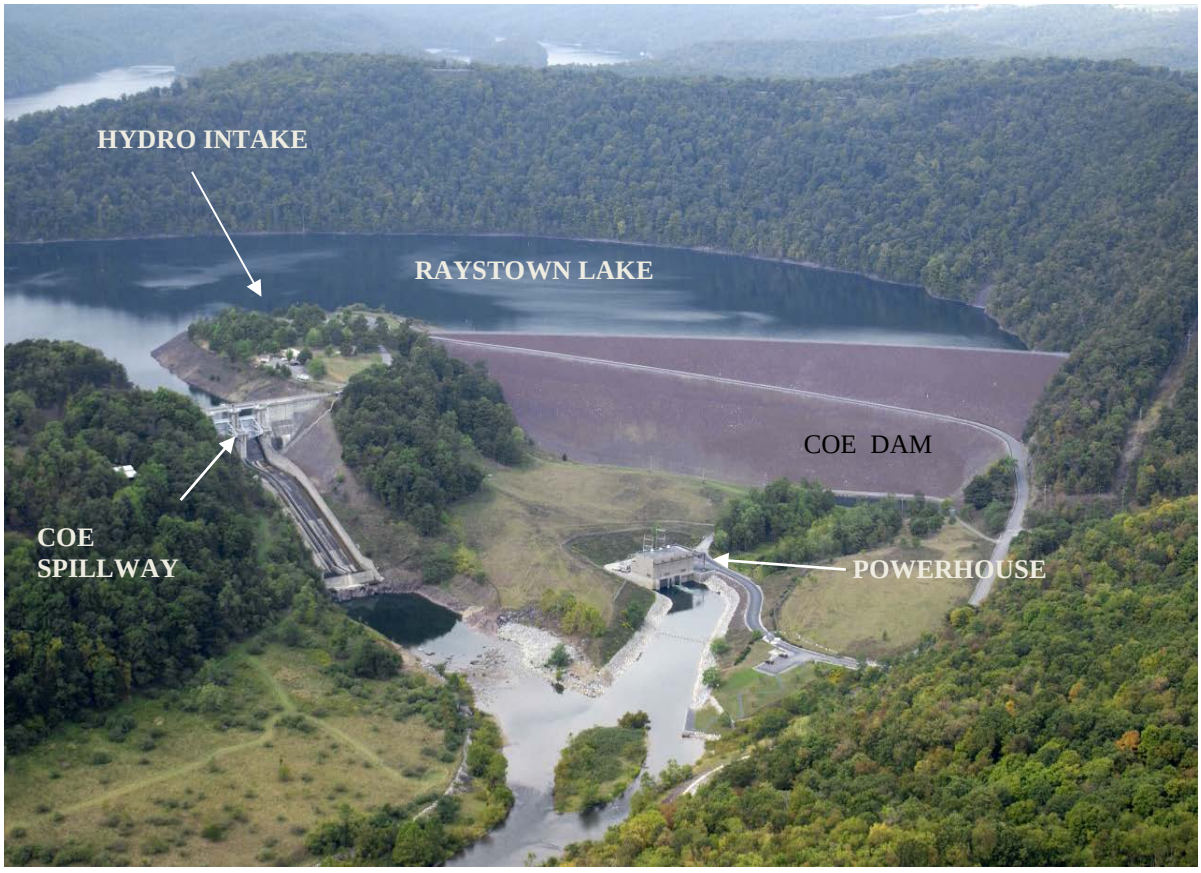

Figure 2. Dam and Powerhouse overview.

iii. Powerhouse

The powerhouse is approximately 4000 square feet. The outlet of Unit 2 and its draft tube gate are on the left and Unit 1, on the right**.**

Figure 3. Dam and Powerhouse overview.

iv. Tailrace

This view from tailrace landing shows the downstream side of the powerhouse.

Figure 4. Tailrace

v. Intake

The intake structure is accessed by a bridge seen to the right in Figure 5 below. The intake is designed to pull water from the top of the lake according to the settings of the temperature control gates. The motors and cable structures as well as the inlet trash racks can be seen in Figure 6.

Figure 5. Intake structure overview

Figure 6. Intake trash racks and temperature control equipment

vi. Cut and cover area above steel penstock

Figure 7. Area above penstock.

d. Zone of Effects Overview

Figure 8. Zones of Effect.

i. Impoundment

Zone 1 is the Impoundment ZOE. The dam and Raystown Lake are described in the "dam or diversion" and "impoundment and watershed" portions of Table 1a, the Facility Information Table in Section e.

ii. Tailrace

Zone 2 is the Tailrace and Downstream Reach ZOE. Information on the tailrace and downstream reach can found in Table 1a and section 2-A.

Table 1a Facility Information Table

The Army Corps of Engineer's Raystown Lake Master Plan 2019 revision is referred to several times in this table and can be found at the following link:
https://www.nab.usace.army.mil/Portals/63/docs/Recreation/Raystown/Master%20Plan/Raystown%20Lake%20Master%20Plan%20DRAFT%2010-23-2019.pdf

Item	*Information Requested*	*Response (include references to further details)*
Name of the Facility	Facility name (use FERC project name or other legal name)	Raystown Hydroelectric Project (FERC p-2769)
Reason for applying for LIHI Certification	1. To participate in state RPS program 2. To participate in voluntary REC market (e.g., Green-e) 3. To satisfy a direct energy buyer's purchasing requirement 4. To satisfy the facility's own corporate sustainability goals 5. For the facility's corporate marketing purposes 6. Other (describe)	(select and describe only applicable reasons) 1. ☐X State Program: PA, NJ. 2. ☐ 3. ☐ 4. ☒ 5. ☐ 6. ☐ describe: Click or tap here to enter text.
	If applicable, amount of annual generation (MWh and % of total generation) for which RECs are currently received or are expected to be received upon LIHI Certification	Amount of MWh participating: Click or tap here to enter text. % of total MWh generated: Click or tap here to enter text.
Location	River name (USGS proper name)	Raystown Branch Juniata River below Raystown Dam
	Watershed name - Select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html	Raystown HUC:02050303
	Nearest town(s), county(ies), and state(s) to dam	Huntingdon, PA Huntingdon County PA
	River mile of dam above mouth	COE mile marker 5.5; 5.5 miles upstream from the confluence with the Juniata River.
	Geographic latitude and longitude of dam	Lat: N 40° 25.975' Long: W 78° 00.181.
Facility Owner	Application contact names	Bill Carbaugh

Item	*Information Requested*	*Response (include references to further details)*
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the effective date of the change.**	Allegheny Electric Cooperative Bill Carbaugh No change
	FERC licensee company name (if different from owner)	N/A
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC Licensed Project No. 2769. Issued November 10, 1982, expires October 31, 2032.
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", “non-jurisdictional”)	major
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	Pennsylvania, Water Quality Management Bureau, June 24, 1980 (see Attachment A)

	Hyperlinks to key electronic records on FERC e-Library website or other publicly accessible data repositories	License; direct link to the .tif file: https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01C32B12-66E2-5005-8110-C31FAFC91712 *Allegheny Elec. Coop., Inc.*, 27 FERC ¶ 62,308 (1984) (approving partial transfer of license solely to Allegheny and extending license compliance dates) (attached because no hyperlink is available; Attachment E). *Allegheny Elec. Coop., Inc.*, 36 FERC ¶ 62,176 (1986) (approving revised exhibit F drawings) (attached because no hyperlink is available; Attachment F). *Allegheny Elec. Coop., Inc.*, 41 FERC ¶ 62,311 (1987) (approving and modifying water temperature monitoring plan) (attached because no hyperlink is available; Attachment G). FERC filed letter of As Built drawings per Article 35 (attached because no hyperlink is available; Attachment H). *Allegheny Elec. Coop., Inc.*, 52 FERC ¶ 62,035 (1990) (modifying water temperature monitoring plan), *available at* https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19900726-0507. *19900831* FERC ORDER (1999) (confirming compliance with Raystown Article 35 P-2769) (attached because no hyperlink is available; Attachment I).

Item	*Information Requested*	*Response (include references to further details)*
		Allegheny Elec. Coop., Inc., 63 FERC ¶ 62,217 (1993) (modifying water temperature target levels) at https://elibrary.ferc.gov/eLibrary/filelist?accession_number=19930604-0280. FERC Letter to T. Sallade, Vice President – Power Supply & Eng., Allegheny Elec. Coop., Inc., Project No. 2769 (Dec. 31, 2018) (Accession No. 20181231-3018) (approving Public Safety Plan), *available at* https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20181231-3018. FERC Letter to T. Sallade, Vice President – Power Supply & Eng., Allegheny Elec. Coop., Inc., Project No. 2769 (June 29, 2020) (Accession No. 20200629-3033) (approving Dam Safety Surveillance Monitoring Plan), *available at* https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20200629-3033.
Powerhouse	Date of initial operation (past or future for pre-operational applications)	June 15, 1988.
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	21 MW; no change
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	87,162 MWh (1989-2021); 1 % increase

Item	*Information Requested*	*Response (include references to further details)*
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	Run of river; Raystown Dam is managed by the U.S. Army Corps of Engineers. The hydroelectric facility is operated in close cooperation with the COE. Constant flow discharges from the Facility are adjusted on a daily basis to minimize fluctuations downstream. No change since last certification.
	Number, type, and size of turbine/generators, including maximum and minimum hydraulic capacity and maximum and minimum output of each turbine and generator unit	Two units (flows and output when run separately): Unit 1 200 – 550 cfs, 2.2 MW – 6.8 MW Unit 2 480 – 1150 cfs, 6.1 MW – 14.4 MW
	Trashrack clear spacing (inches) for each trashrack	3 inches
	Approach water velocity (ft/s) at each intake if known	3 ft./sec maximum
	Dates and types of major equipment upgrades **For recertifications: Indicate only those since last certification**	2015-2016; new Unit 1 and Unit 2 hydraulic power units 2017-2018; new air compressors 1 and 2 2020; new powerhouse roof 2021 new Unit 1 and Unit 2 water strainers
	Dates, purpose, and type of any recent operational changes **For recertifications: Indicate only those since last certification**	None
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	None

Item	*Information Requested*	*Response (include references to further details)*
Dam or Diversion	Date of original dam or diversion construction and description and dates of subsequent dam or diversion structure modifications	The existing U.S. Army Corps of Engineers Raystown Dam was constructed for flood control, recreation, fish, and wildlife management purposes. Construction of the dam began in October 1968 and was completed in October 1973. The flood storage elevation of Raystown Lake is 812 ft. above MSL. At this elevation the surface area of the lake is 10,800 acres. The Raystown Hydroelectric Project (William F. Matson Generating Station), which was completed in 1988, inundated no land.
	Dam or diversion structure length, height including separately the height of any flashboards, inflatable dams, etc. and describe seasonal operation of flashboards and the like	Length 1700 feet Height 225 feet Please see Raystown Lake Master Plan 2019 revision, Table 1.1 for more information. https://www.nab.usace.army.mil/Portals/63/docs/Recreation/Raystown/Master%20Plan/Raystown%20Lake%20Master%20Plan%20DRAFT%2010-23-2019.pdf
	Spillway maximum hydraulic capacity	Gated spillway: 89,000 cfs Ungated spillway: 212,00 cfs Please see Raystown Lake Master Plan 2019 revision, Table 1.1 for more information
	Length and type of each penstock and water conveyance structure between the impoundment and powerhouse	12 foot diameter tunnel consisting of approximately 900 feet of concrete lined tunnel with the last 100 feet also lined with steel which continues as approximately 550 feet of steel penstock in an cut and cover installation including the bifurcation at the powerhouse ending at the 5ft diameter Unit 1 turbine shutoff valve and the 7 ft. Unit 2 turbine shutoff valve.

Item	*Information Requested*	*Response (include references to further details)*
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	The operation of Raystown Lake provides for: • Flood risk management, • Hydroelectric power, • Recreation, • Fish and wildlife conservation and mitigation • Downstream low-flow augmentation for water quality improvement. Please see Raystown Lake Master Plan 2019 revision, Section 1.3 for more information.
Conduit Facilities Only	Date of conduit construction and primary purpose of conduit	N/A
	Source water	N/A
	Receiving water and location of discharge	N/A
Impoundment and Watershed	Authorized maximum and minimum impoundment water surface elevations **For recertifications: Indicate if these values have changed since last certification**	N/A Run of the river. However The Raystown Dam is managed by the U.S. Army Corps of Engineers, and during flooding conditions releases may be managed to store excess flow in the lake. Please see Raystown Lake Master Plan 2019 revision, Section 2.2 for more information. No Change
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	786.0 NGVD +/- 1.0 ft. Please see Raystown Lake Master Plan 2019 revision, Section 2.2 for more information. No Change
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	The flood storage elevation of Raystown Lake is 812 ft. above MSL. At this elevation the surface area of the lake is 10,800 acres and stores 761,000 acre-feet. At normal pool, 786.00 ft. above MSL, the surface area is 8,300 acres surface area and the storage is 513,000 acre-feet. Please see Raystown Lake Master Plan 2019 revision, Section 2.2 for more information. Slight change to acre feet of storage in 2017 Master Plan

Item	*Information Requested*	*Response (include references to further details)*
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	N/A Run of the river. Raystown Dam is managed by the U.S. Army Corps of Engineers. The hydroelectric facility is operated in close cooperation with the COE. Constant flow discharges from the Facility are adjusted on a daily basis to minimize fluctuations downstream. No Change
	Describe requirements related to impoundment inflow and outflow, elevation restrictions (e.g., fluctuation limits, seasonality) up/down ramping and refill rate restrictions.	N/A Raystown Dam is managed by the U.S. Army Corps of Engineers. Please see Raystown Lake Master Plan 2019 revision, Section 2.2 for more information.
	Upstream dams by name, ownership (including if owned by an affiliate of the applicant's company) and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	None
	Downstream dams by name, ownership (including if owned by an affiliate of the applicant's company), river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	None
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	None
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control. Indicate locations and acres of flowage rights versus fee-owned property.	The FERC Project boundaries for this Hydroelectric facility occupy approximately 11.5 acres. See Attachment J for the FERC defined project boundaries.
Hydrologic Setting	Average annual flow at the dam, and period of record used	1,241 cfs; 2015-2021

Item	*Information Requested*	*Response (include references to further details)*
	Average monthly flows and period of record used	January 1140 cfs February 1989 cfs March 1945 cfs April 1745 cfs May 1841 cfs June 1097 cfs July 667 cfs August 456 cfs September 1450 cfs October 525 cfs November 1105 cfs December 1122 cfs 2015-2021
	Location and name of closest stream gaging stations above and below the facility	**Upstream:** USGS 01562000 Raystown Branch Juniata River at Saxton, PA. Lat 40`12'57", long 78`15'56" **Downstream:** USGS 01563200 Raystown Branch Juniata River below Raystown Dam near Huntingdon, PA Lat 40`25'44", long 77`59'29",
	Watershed area at the dam (in square miles). Identify if this value is prorated from gage locations and provide the basis for proration calculation.	The watershed above the dam site drains an area of 960 square miles and is approximately 57 miles long with a maximum width of 35 miles. The streambed descends from an elevation of about 2,720 feet National Geodetic Vertical Datum (NGVD) at its upper end to an elevation of 601 feet NGVD at the dam site. Please see Raystown Lake Master Plan 2019 revision, Section 1.5 for more information.
	Other facility specific hydrologic information (e.g., average hydrograph)	See section 2a for the daily average hydrograph below the facility.
Designated Zones of Effect	Numbers and names of each zone of effect (e.g., "Zone 1: Impoundment")	Zone 1: Impoundment Zone 2: Tailrace/downstream reach
	River mile of upstream and downstream limits of each zone of effect (e.g., "Zone 1 Impoundment: RM 6.3 - 5.1")	Zone 1: RM 35.5 to 5.5 miles upstream Zone 2: RM 5.5 to 0 miles downstream to confluence of the mainstream of the Juniata River
Pre-Operational Facilities Only		

Item	*Information Requested*	*Response (include references to further details)*
Expected operational date	Date generation is expected to begin	N/A
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	N/A
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	N/A

e. Table 2.b Standards Matrix for ZoE 1 and ZoE 2.

Facility Name: Raystown Hydroelectric Project

Zone:		**1: Impoundment**	**2. Downstream Reach**
	River Mile at upper and lower extent of Zone:	RM 5.5 to 35.5 miles upstream	RM 5.5 to 0 miles
Criterion		**Standard Selected**	
A	Ecological Flows	A1	A1
B	Water Quality	B3	B3
C	Upstream Fish Passage	C1	C1
D	Downstream Fish Passage	D1	D1
E	Shoreline and Watershed Protection	E1	E1
F	Threatened and Endangered Species	F2	F2
G	Cultural and Historic Resources	G1	G1
H	Recreational Resources	H2	H2

2. Supporting information for each Criterion and each ZOE

a. Ecological Flows Standards

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to any dam/diversion structures and demonstrate that there are no bypassed reaches in the designated Zone of Effect. • For run-of-river facilities, provide details on operations and describe how flows, water levels, and operations are monitored to ensure such an operational mode is maintained. In a conduit facility, identify the source waters, location of discharge points, and receiving waters for the conduit system within which the hydropower facility is located. This standard cannot be used for conduits that discharge to a natural waterbody. • For impoundment zones, explain water management (e.g., fluctuations, ramping, refill rates, restrictions) and how those requirements support fish and wildlife habitat within the ZoE.

Zone 1, the impoundment, qualifies for Standard A-1. There is no bypassed reach, and the project operates in a run-of-river release mode based on discharges from Raystown Lake that are managed by COE, Baltimore District Water Control Branch. According to the Raystown Lake Master Plan (Master Plan), 2019 revision, Section 1.3, the operation of Raystown Lake provides for:

- Flood risk management,
- Hydroelectric power,
- Recreation,
- Fish and wildlife conservation and mitigation, and
- Downstream low-flow augmentation for water quality improvement.

Section 1.7 of the Master Plan provides more information on the operation of the Raystown Lake and the hydroelectric plant as a run of the river project. Referenced in the Master Plan is the Master Manual for Reservoir Regulation for Raystown Lake which is a COE Baltimore district document (not publicly available) and acts as the overall guide for flows from the reservoir and through the downstream reach.

Zone 2, the downstream reach, qualifies for Standard A-1. The facility is in compliance with Resource Agency Recommendations included in the FERC operating license issued November 11, 1982 (link provide in Table 1-A), and the Operating Agreement between the U.S. Army Corps of Engineers and Allegheny Electric Cooperative (Operating Agreement, see Attachment B). There have been no deviations since plant startup. The Allegheny plant operators do not have control over the flows, rather per the FERC license and the Operating Agreement, the hydroelectric facility is operated in close cooperation with the

COE of Engineers with daily direction given from the COE to the hydroelectric plant operators. The facility is in compliance with minimum flows contained the Operating Agreement: 200 cfs minimum flow from May 15 through November 14, and 480 cfs minimum flow from November 15 through May 14.. See Figure 9 below for the average daily flow chart for 2021. The hydroelectric plant provides for all flows (in blue) below 1650 cfs. The run of the river operation can be seen with larger flows, including COE involvement (red line above blue flows), during wet periods and low hydroelectric flows during dry periods. The Pennsylvania Fish & Boat Commission has stated that flows are appropriately protective of fish, wildlife, and water quality (see Attachment C).

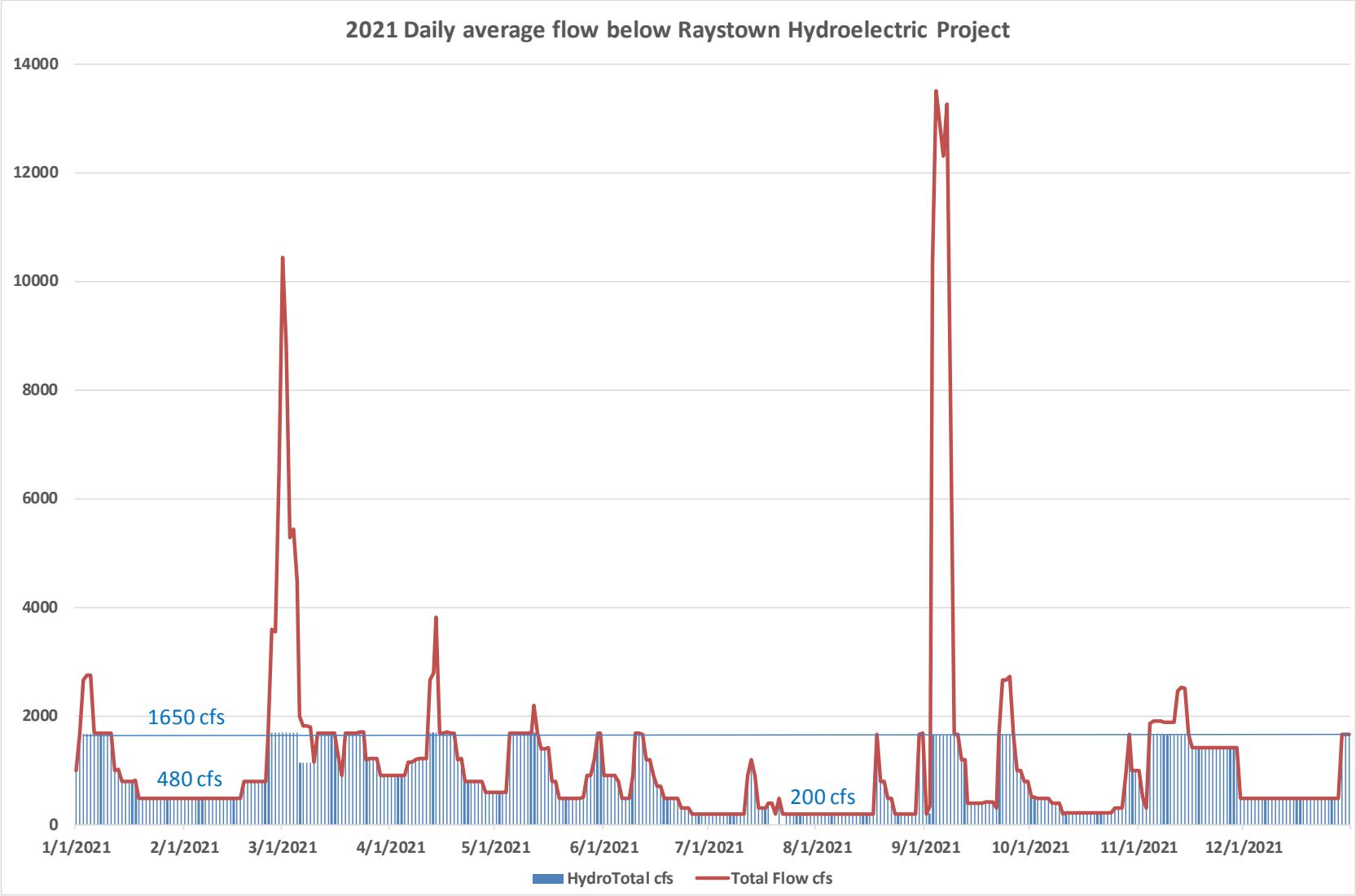

Figure 9 2021 Daily Flows

b. Water Quality Standards

Criterion	*Standard*	*Instructions*
B	3	Site-Specific Studies: • Document consultation with the appropriate water quality agency to determine what water quality parameters and sampling methods are required. • Present recent water quality data from the facility or from other sources in the vicinity of the facility (e.g., data collected from the state, watershed associations, or others who collect data under generally accepted sampling protocols and quality assurance procedures) and explain and demonstrate how it satisfies current applicable water quality standards including designated uses or provide a letter from the appropriate state or other regulatory agency accepting the data.

Zone 1, the impoundment qualifies for Standard B-3. Section 2.4 of the Master Plan, provides information on the Water Quality Management program at Raystown Lake. Two water quality sampling trips are completed annually. The Master Plan states "The water quality of Raystown Lake ranges from fair in upstream reaches to excellent near the dam. Nutrient loading (specifically phosphorous) in the upper end of the reservoir is moderately high compared to the Environmental Protection Agency (EPA) standard due to upstream municipalities and agricultural runoff. However, the long retention time of the reservoir results in a significant reduction of the nutrients with distance downstream in the lake… Over the past 10 years, the outflow from Raystown Lake has been sampled and analyzed 21 times. The only analyte that does not meet EPA standards consistently is phosphorous. Of the 21 sampling events, 10 instances had phosphorous readings higher than the EPA maximum standard of 0.05 mg/l." The DEP integrated water quality monitoring and assessment report (https://gis.dep.pa.gov/IRViewer2022/) shows no impairment in the impoundment zone, Raystown Lake, or the downstream reach. This indicates that not only are neither zone impaired but are managed in a way that fully supports Pennsylvania's designated uses for the each zone.

Zone 2, the downstream reach, qualifies for Standard B-3. As discussed above the downstream reach is part of the COE Water Quality Management Program at Raystown Lake and the DEP integrated water quality report shows no impairment. The Pennsylvania Department of Environmental Resources, Bureau of Water Quality Management, issued a Clean Water Act Section 401 water quality certification for the facility on June 24, 1980 (Attachment A). The facility is in compliance with the following Raystown Branch Juniata River protected water uses: water supply, recreation, aquatic life, trout stocking, and warm water fisheries. The facility is also in compliance with Article 34 of its FERC operating license. In August 11, 1986 FERC issued an order (Attachment F) approving the

design of the intake and acknowledging the design inherently addresses dissolved nitrogen levels. The order established the need for a water temperature monitoring program which was initially approved in part in December 29, 1987 (Attachment G), modified in 1990 and further modified in 1993 (links provided in Table 1a). The 2021 Water Temperature Monitoring Report is shown in Attachment D. The facility is operated in accordance with the Operating Agreement between the U.S. Army Corps of Engineers and Allegheny Electric Cooperative (Attachment B). As shown in Attachment C, the Fish & Boat Commission has stated that flows are appropriately protective of fish, wildlife, and water quality.

c. Upstream Fish Passage

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated ZoE. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no additional facility barrier to further upstream movement. • Document available fish distribution data and the lack of migratory fish species in the ZoE. • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

Both Zone 1, the impoundment, and Zone 2, the downstream reach, quality for Standard C-1. American shad and American eel were once numerous in the Juniata River. In the early 1900's, four large hydroelectric dams were built on the Susquehanna River, blocking shad and eel passage. An earlier Raystown dam, constructed about three miles upstream of the existing dam in 1904, also blocked shad and eel passage. The existing U.S. Army Corps of Engineers Raystown Dam, which inundated the earlier dam, was completed and operational in 1973. The Raystown Hydroelectric Project (William F. Matson Generating Station), located at the base of Raystown Dam, was completed and operational in 1988. No mandatory fish passage prescriptions or resource recommendations have been made.

d. Downstream Fish Passage

Criterion	*Standard*	*Instructions*
D	1	<u>Not Applicable / De Minimis Effect:</u> • Explain why the facility does not impose a barrier to downstream fish passage in the designated ZoE, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no additional facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective, and timely downstream migration. • For riverine fish populations that are known to move downstream, explain why the facility in the designated ZoE does not contribute adversely to the species populations or to their access to habitat necessary for successful completion of their life cycles; or • Document available fish distribution data and the lack of fish species requiring passage in the ZoE; or • If migratory fish species have been extirpated from the area, explain why the facility is not or was not the cause of the extirpation.

Both Zone 1, the impoundment, and Zone 2, the downstream reach, quality for Standard D-1. According to the Master Plan, Section 6.7, the following fish are present in the lake: muskellunge, tiger muskellunge, largemouth bass, walleye, black and white crappie, bluegill, striped bass, yellow perch, channel catfish, and brown bullhead. Pumpkinseed, carp, white sucker, rock bass, and several species of minnows are also present. The downstream reach, the Raystown Branch of the Juniata River, below the Raystown Dam, is stocked with mixed trout species (which generally include brown and rainbow trout). The Master Plan states that the Raystown Lake fisheries management objectives are to develop a warm water fishery for bass, muskellunge, panfish, and striped bass, and a cold water fishery for trout species, notably brown and lake trout. The 2014 and 2017 letters in Appendix C from the Pennsylvania Fish and Boat Commission support the Raystown Hydroelectric Project as an important part of the warm water fishery in the Raystown branch of the Juniata below the dam.

American shad and American eel were once numerous in the Juniata River. In the early 1900's, four large hydroelectric dams were built on the Susquehanna River, blocking shad and eel passage. An earlier Raystown dam, constructed about three miles upstream of the existing dam in 1904, also blocked shad and eel passage. The existing U.S. Army Corps of Engineers Raystown Dam, which inundated the earlier dam, was completed and operational in 1973. The Raystown Hydroelectric Project (William F. Matson Generating

Station), located at the base of Raystown Dam, was completed and operational in 1988. No mandatory fish passage prescriptions or resource recommendations have been made. The FERC license, linked in Table 1a, further states on page 3 that no further turbine mortality studies were necessary as FERC and resource agencies (the Fish and Wildlife Office and Pennsylvania Fish Commission) accepted an assessment by Harza Engineering that stated fish mortality from the reservoir would be less with the hydroelectric project due to the large drop in velocity from approximately 20 feet per sec to 3 feet per second.

e. Shoreline and Watershed Protection Standards

Criterion	*Standard*	*Instructions*
E	1	<u>Not Applicable / De Minimis Effect:</u> • If there are no lands with significant ecological value associated with the designated ZoE, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary, and absence of critical habitat for protected species). • Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

Both Zone 1, the impoundment, and Zone 2, the downstream reach, qualify for Standard E-1. Allegheny has no control over the impoundment shoreline. Further there is no requirement for shoreline protection or plan in the downstream reach. Please see attachment J for the project boundaries with Allegheny as a leasee of an area which totals approximately 11.5 acres. The U.S. Army Corps of Engineers, which manages the Raystown Lake shoreline and adjacent lands, owns and has dedicated for conservation purposes all undeveloped land within 300 feet horizontal from elevation 812 ft. above MSL.

f. Threatened and Endangered Species Standards

Criterion	*Standard*	*Instructions*
F	2	Finding of No Negative Effects: • Identify all federal and state listed species that are or may be in the immediate area of the designated ZoE based on current data from the appropriate state and federal natural resource management agencies. • Provide documentation that there is no demonstrable negative effect of the facility on any listed species in the area from an appropriate natural resource management agency; or provide documentation that habitat for the species does not exist within the designated ZoE or is not impacted by facility operations.

Zone 1, the impoundment, qualifies for Standard F-2. Numerous species are listed as occurring in the areas surrounding the lake according to Section 2.8.4 and Table 2.2 of the Master Plan. Several sections of the Master Plan including section 5.4 refer to protections given to areas that may contain endangered species.

Zone 2, the downstream reach, qualifies for Standard F-2. Bald eagles (removed from endangered and threatened species list on 28 June 2007) are known to nest in the vicinity of Raystown Dam and the hydroelectric plant. Virginia mallow (state endangered) is also known to occur in the vicinity of the facility. The 2019 Shale Barren Mapping and Threatened and Endangered Species Surveys for Raystown Lake by the U.S. Army Corps of Engineers, Baltimore District (https://apps.dtic.mil/sti/pdfs/AD1081748.pdf), identifies several species of bats as being previously present in the vicinity of the downstream reach. The Indiana bat is federal and state endangered, the little brown bat is state listed, and the northern long eared bat is federal threatened and state endangered. The US Fish and Wildlife Service (IPac) resource list (shown in Attachment K) also lists northeastern bulrush as possibly present. In all cases no report identifies any activities of the Raystown hydroelectric project as a negative effect, and the staff at the project will continue to work with local resources to understand any efforts or concerns regarding threatened or endangered species. In fact, the staff of the project have worked with the COE to provide locations for two bat boxes, several acres of pollinator plantings, and in the protection of a wetland adjacent to the project parking lot.

g. Cultural and Historic Resources Standards

Criterion	*Standard*	*Instructions*
G	1	<u>Not Applicable / De Minimis Effect:</u> • Document that there are no cultural or historic resources located on facility lands associated with the designated ZoE that can be affected by construction or operations of the facility; or • Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands in the designated ZoE; and • Provide a letter from the state and tribal (if applicable) historic preservation office that confirms no effect (this may be newly obtained or issued during prior FERC licensing or exemption proceedings).

Zone 1, the impoundment, qualifies for Standard G-1. Numerous historic cultural resource studies are listed in Section 2.11 of the Master Plan. Section 2.11.4 discusses how the Cultural Resources Management Plan (CRMP) for Raystown Lake, developed in 2012, governs the management of cultural and historic sites within the project. The Raystown Hydroelectric Project facility land in the impoundment zone and therefore has no involvement with the CRMP.

Zone 2, the downstream reach, qualifies for Standard G-1. The FERC license (link shown in Table 1a) states on page 4 that the Pennsylvania State Historic Preservation Officer indicated that the project would not affect any known archaeological or historic sites. The facility is in compliance with Article 33 of the FERC license, which requires consultation with the State Historic Preservation Office prior to the commencement of any construction or alteration. There were no issues that arose from construction, or since operation to present, that required consultation or mitigation with the State Preservation Office.

h. Recreation Resources Standards

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any resource agency recommendations and any enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility in the designated ZoE is in compliance with all such recommendations and plans.

Both Zone 1, the impoundment, and Zone 2 qualify for Standard H-2. The U.S. Army Corps of Engineers at Raystown Lake has an extensive history of supporting and expanding recreational opportunities. Section 2.15, Chapter 5, and Chapter 6 of the Master Plan document the inventory and plan for recreational improvements in the areas surrounding Zone 1.

The Raystown Hydroelectric Project is in compliance with Article 35 of the FERC license, which required finalizing the recreation plan in consultation with the U.S. Army Corps of Engineers and filing of as-built recreation drawings. On March 15, 1989, Allegheny submitted as built drawings to FERC pursuant to Article 35 (Attachment H) and on August 31, 1990, FERC acknowledged the submittal satisfied the requirements of Article 35 (Attachment I). The approved recreation plan required installation of an ADA-accessible fishing pier in the facility tailrace area. Photographs of the pier and parking lot are shown in Figures 10 and 11. The has been no specific Environmental and Recreational Inspection, however the fishing pier and parking lot have been noted in all recent FERC inspections, including the self-inspection completed in 2021. There have been no issues noted or follow up actions issued by FERC for the recreational facilities at the Raystown facility.

Figure 10. Fishing Pier

Figure 11. Fishing pier parking lot and fishing pier

3.0 Attestation and Waiver Form

All applications for LIHI Certification must include the following statement before they can be reviewed by LIHI:

ATTESTATION

As an Authorized Representative of the Raystown Hydroelectric Project, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to the final certification decision and prior to marketing the electricity product as LIHI Certified® (which includes selling RECs in a market that requires LIHI Certification).

The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board, and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

FOR PRE-OPERATIONAL CERTIFICATIONS:

N/A - Recertification

Authorized Representative:

Name: ___Todd A. Sallade_____

Title: ___VP of Power Supply & Engineering_____

Authorized Signature: 

Date: July 29, 2022

4. Facility and Stakeholder Contact Forms

a. Table 11. Facility Contacts.

Facility Owner:	
Name and Title	Click or tap here to enter text.
Company	Allegheny Electric Cooperative
Phone	Click or tap here to enter text.
Email Address	Click or tap here to enter text.
Mailing Address	Click or tap here to enter text.
Facility Operator (if different from Owner):	
Name and Title	Bill Carbaugh, Superintendent Raystown Operations
Company	Allegheny Electric Cooperative
Phone	814-643-4931, 814-599-5418 (mobile)
Email Address	Bill_Carbaugh@ allegheny-prea.com
Mailing Address	13797 Point Road, PO Box 395 Huntingdon, PA 16652
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Todd Sallade
Company	Allegheny Electric Cooperative
Phone	717-233-5704
Email Address	Todd_Sallade@ allegheny-prea.com
Mailing Address	212 Locust Street, Suite 100, PO Box 1266 Harrisburg, PA 17108
Party responsible for accounts payable:	
Name and Title	Kent Springman, Manager Finance
Company	Allegheny Electric Cooperative
Phone	717-233-5704
Email Address	Kent_Springman@allegheny-prea.com
Mailing Address	212 Locust Street, Suite 100, PO Box 1266 Harrisburg, PA 17108

b. Table 12. Agency Contacts.

Agency Contact		***Area of Responsibility (check applicable boxes)***
Agency Name	Department of the Army US Army Corps of Engineers, Raystown Lake	☒ Flows ☒ Water Quality ☒ Fish/Wildlife ☒ Watershed ☒ T&E Species ☒ Cultural/Historic ☒ Recreation
Name and Title	Jude Harrington, Operations Manager, Raystown Lake	
Phone	814-658-6801	
Email address	Jude.T.Harrington@usace.army.mil	
Mailing Address	Raystown Lake Office 6145 Seven Points Road Hesston, PA 16647	

Agency Contact		***Area of Responsibility (check applicable boxes)***
Agency Name	PA Fish and Boat Commission	☐ Flows ☒ Water Quality ☒ Fish/Wildlife ☐ Watershed ☐ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Heather Smiles; Chief, Division of Environmental Services	
Phone	Office: 814.359.5194	
Email address	hsmiles@pa.gov	
Mailing Address	PA Fish and Boat Commission 595 East Rolling Ridge Drive Bellefonte, PA 16823	

Agency Contact		*Area of Responsibility (check applicable boxes)*
Agency Name	U.S. Fish & Wildlife Service	☐ Flows ☒ Water Quality ☒ Fish/Wildlife ☐ Watershed ☐ T&E Species ☐ Cultural/Historic ☐ Recreation
Name and Title	Richard C. McCorkle, Fish and Wildlife Biologist	
Phone	814-206-7470	
Email address	richard_mccorkle@fws.gov	
Mailing Address	U.S. Fish & Wildlife Service Pennsylvania Field Office 110 Radnor Road, Suite 101 State College, PA 16801	

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Water Quality Management
736 West Fourth St.
Williamsport, PA 17701
June 24, 1980

Proposed Raystown Hydroelectric Generating Station
Raystown Branch, Juniata River
File: 2-23.7

Floyd R. Duncan, Sr., Engineer,
Environmental - Water
Pennsylvania Electric Company
1001 Broad Street
Johnstown, PA 15907

Dear Mr. Duncan:

We have considered your request for State Certification that the proposed construction of a 21 megawatt hydroelectric station utilizing the existing Raystown Dam will not violate applicable water quality standards under Section 401 of the 1972 amendments to the Federal Water Pollution Control Act.

We have reviewed your application for license entitled "The Raystown Hydroelectric Project" submitted to the Federal Energy Regulatory Commission and we in general have no objections to the project based upon that review. It appears that all necessary precautions have been considered and incorporated into the design of the facility. This should insure minimal downstream impact on the water quality of the lake and the Raystown Branch. We therefore grant your request for State Certification required under Section 401.

Very truly yours,

Stuart I. Gansell, Chief
Planning Section

SIG:jka
cc: Theodore Clista
Daniel Lenyo
Central Office Files

AGREEMENT

Between the

U. S. Department of the Army

Baltimore District

Corps of Engineers

and

Allegheny Electric Cooperative, Inc.

Regarding

OPERATING AGREEMENT

RAYSTOWN HYDROELECTRIC PROJECT

FERC Licensed Project No. 2769 - PA

Pursuant to Article 44

TABLE OF CONTENTS

AGREEMENT

Between the

U. S. Department of the Army

Baltimore District

Corps of Engineers
and
Allegheny Electric Cooperative, Inc.

Regarding

OPERATING AGREEMENT

RAYSTOWN HYDROELECTRIC PROJECT

FERC Licensed Project No. 2769 - PA

Pursuant to Article 44

AGREEMENT, made and entered into this 25th day of March, 1988, by and between the ALLEGHENY ELECTRIC COOPERATIVE, INC., an electric cooperative corporation, organized and conducting business under the laws of the Commonwealth of Pennsylvania, (hereinafter referred to as "Allegheny"), and the UNITED STATES OF AMERICA, represented by the UNITED STATES ARMY CORPS OF ENGINEERS - BALTIMORE DISTRICT, (hereinafter referred to as the "Government").

W I T N E S S E T H:

WHEREAS, Allegheny and its former partner, the Pennsylvania Electric Company, were granted a License under the terms of Section 4(e) of the Federal Power Act (16 U.S.C. § 797(e)) by the Federal Energy Regulatory Commission (hereinafter referred to as "FERC") on November 10, 1982, for the construction, operation, and maintenance of a Hydroelectric Project at the Raystown Lake

Dam and Reservoir, the terms and conditions of which, as amended, are made a part of this Agreement as Attachment A; and

WHEREAS, pursuant to a divestiture agreement by and between the said Pennsylvania Electric Company and Allegheny dated January 20, 1984, Allegheny assumed all duties and obligations imposed by the aforesaid License concerning the design, construction, operation and maintenance of the said Hydroelectric Project, which transferal of interest was approved by FERC in its Order of June 19, 1984, granting an Application filed under Part I of the Federal Power Act which requested that Allegheny be designated as the sole, individual licensee herein; and

WHEREAS, the Government as the owner and operator of the lands and dam structures of the Federal Government under the conditions and terms set forth by Congress in the act which authorized the project and all regulations promulgated thereunder, is responsible for protecting the federally-authorized project purposes and operations, and has entered into an agreement with FERC entitled, "Memorandum of Understanding between the Federal Energy Regulatory Commission and the Department of the Army regarding Non-Federal Hydro Power Development," dated November, 1981 (hereinafter referred to as "MOU") regarding mutual cooperation for expediting non-Federal hydropower developments, a copy of which is attached as Attachment B; and

WHEREAS, Allegheny, during the feasibility studies, licensing and review process, has consulted with the Government regarding matters relating to the design, construction and operation of hydroelectric facilities at Raystown Lake; and

WHEREAS, FERC has issued the aforesaid License which contains provisions which require execution of Memoranda of Understanding between the Government and Allegheny; and

WHEREAS, pursuant to Article 41 of the License, the parties have duly entered into an agreement dated February 20, 1985 in order to coordinate plans for access to and construction of the Hydropower Project on lands administered by the Government, inter alia, which at Article XI provides that Allegheny and the Government agree to enter into an agreement concerning the mode of operation of the subject Hydroelectric Project; and

WHEREAS, the agreement of February 20, 1985 provides at Article II B.(ii) that Allegheny shall, at least sixty (60) days prior to the start of construction, submit a plan to the Government describing the designed mode of hydropower operation; and

WHEREAS, Article 44 of the License calls specifically for such an agreement between Allegheny and the Government describing the mode of hydropower operation; and

WHEREAS, Allegheny and the Government are desirous of entering into such an agreement because they recognize the need to ensure a clear agreement of the mutual rights and responsibilities of the parties consonant with the MOU and with the terms and conditions of the said License; and

WHEREAS, in accordance with the terms of Article 44 of the subject License, the Regional Engineer of FERC has participated in meetings concerning the preparation of this Agreement; and

WHEREAS, both Allegheny and the Government wish to promote the development of Pennsylvania's renewable hydropower resources;

NOW THEREFORE, in consideration of the mutual cooperation hereinafter provided for, and with intent to be legally bound hereby, Allegheny and the Government hereby agree to the following:

ARTICLE I - PROJECT DESCRIPTION

A description and denotation of the subject Hydroelectric Project is contained in the said FERC Order issuing license (Major) for Project No. 2769, together with the pertinent portions of the corresponding application for license referenced and incorporated therein. The subject Hydroelectric Project of this Agreement shall be and constitute the same lands, properties, structures, facilities, fixtures and equipment therein, as may be amended from time to time by action before FERC.

ARTICLE II - COOPERATION

The Government and Allegheny agree to cooperate in the coordinated operation of the Hydroelectric Project at Raystown Lake Dam and Reservoir to protect the authorized project purposes and federal interests of the Government as set forth by Congress, and to provide for the generation of electric power and energy at the Hydroelectric Project for the benefit of the rural electric consumers of Pennsylvania and New Jersey, consonant with those Federal interests.

ARTICLE III - DULY AUTHORIZED AGENTS

A. Allegheny's Authorized Agents.

Allegheny shall provide written notice to the Government specifying the names and telephone numbers of any agents who, from time to time, may be authorized to act on behalf of Allegheny in carrying out its responsibilities and obligations under this Agreement, or in supervising the operation or maintenance of the Hydroelectric Project. Hereinafter in this Agreement references to "Allegheny" shall include both Allegheny Electric Cooperative, Inc. and any duly authorized agents of Allegheny Electric Cooperative, Inc.

B. Government's Agents.

The Baltimore District Engineer shall provide written notice to Allegheny indicating the names and telephone numbers of the authorized agents who will coordinate with Allegheny on the regulation of flows as hereinafter provided.

C. Coordination.

Coordination of Allegheny's operation of its Hydroelectric Project with the Government's facilities will be maintained by daily communication between the Government's authorized agents and Allegheny's duly authorized representative stationed at the designated point of control for the power station. Arrangements shall be made to assure the maintenance of ready communication between the aforementioned persons, or their assigned assistants, during off duty and holiday periods; it being understood, however, that either such representative, or assigned assistant, shall communicate with the respective office of the other should the

need for such communication arise due to the unavailability of either such representative or to other circumstances requiring such communication. It will be the responsibility of each such representative to provide the other in writing the names and home and office telephone numbers of at least two responsible officials qualified to respond to such communication. All information required by this Article and Notices under Article VI shall be provided at least ninety (90) days prior to testing and commissioning of the Hydroelectric Project, and will be updated as appropriate and reconfirmed in writing not less than once a year on or before August 24.

D. Government's Site Personnel.

The District Engineer shall also provide to Allegheny the names and telephone numbers of on site personnel who are responsible for the operation and maintenance and management of the Raystown Lake Project including, but not limited to, the dam and its appurtenances, recreational and visitor services program, and the natural resources.

E. Operation Task Force

In order to facilitate initial communication and operations, the parties agree to the establishment of an Operation Task Force, to be comprised of six (6) members from Allegheny and the Government. The FERC New York Regional Office will also be invited to participate. This Task Force will meet as needed to discuss and review overall operation of the Raystown Lake Dam and Reservoir and the Hydroelectric Project.

ARTICLE IV - OPERATIONAL REQUIREMENTS

A. General.

Allegheny shall operate the Hydroelectric Project in accordance with this instrument and in such manner as required by the License. Allegheny shall pass all flows through the Hydroelectric Project at all times consistent with the operating directives of the Government.

Allegheny recognizes that recreational enhancement is one of the authorized purposes of the Raystown Lake Dam and Reservoir. If an emergency situation arises which threatens any substantial interest of the Government, as hereinafter set forth in Articles IV F, and XIII, Allegheny agrees to operate in accordance with the Baltimore District - Corps of Engineers, or FERC directives pertaining to the emergency.

B. Operating Procedures

The parties agree that input from Allegheny shall be sought regarding revisions to the Corps Regulation Manual or other Government studies which may affect the operating strategy and procedures for Raystown Lake as they relate to flow discharges and lake level changes. Notice of such studies shall be made in accordance with Article VI of this Agreement.

C. Specific Operational Elements - Normal Operation.

1. Releases. To the greatest extent possible and giving full consideration to the Hydroelectric project, it is agreed that, during normal operation of the Raystown Lake Dam Reservoir, the Government will make available to the Hydroelectric Project all releases that are within the operating range of

the Allegheny facility insofar as they are consistent with applicable laws and the authorized purposes of the Raystown Lake Dam Reservoir. The above releases will be consistent with the currently approved version of the Corps Regulation Manual which presently reflects 200 cfs as the minimum release for the Raystown Lake Dam and Reservoir during the period each year from May 15 through and including November 15, and 480 cfs during the period each year from November 15 through and including May 15. By Government regulation (ER 1110-2-240) this manual is periodically revised; therefore, the minimum release and other operational objectives are subject to such revisions.

2. Changes in Releases. Changes in flow rates through the Hydroelectric Project shall be made at all times as directed by the Government. Allegheny agrees that it will make releases through the Hydroelectric project only at times and at the flow rates as directed by the Government. Allegheny further agrees to make such changes in rates or flow within one (1) hour after notification.

3. Release in Excess of Hydropower Project. When, in the judgment of the Government, releases from the Reservoir should exceed 1620 cfs, such excess releases shall, at the sole and exclusive option of the Government, be released downstream through the Government facilities or stored during a flood or high water event as determined by the Government in the furtherance of its interest and authorized project purposes.

4. Intake Operation. Allegheny will operate the Hydroelectric Project intake structure control gates in concert

with the Government in order to meet the environmental objectives of the Raystown Lake and Dam Reservoir Project and the FERC license.

5. Communications. Under normal conditions, in concert with the above terms, the Government, acting through the Water Control Management Section of its Baltimore District office, shall communicate with Allegheny. Instrumentation will be provided, by Allegheny, at the Government facilities denoting the conditions of the Hydroelectric Project relative to flow rate, water temperature and temperature gate position. In the event of a loss of communications with Allegheny for whatever reason, the Government reserves the right to shut down the Hydroelectric facility until communications can be reestablished in order to protect the operating objectives thereof.

6. Written Reports. In accordance with the FERC license, on a monthly basis, Allegheny will submit a written report to the Government, with a copy to the Manager-Raystown Lake, providing water temperature and flow data over the previous one-month period, including all changes of release rates and all changes of temperature gate settings. On an annual basis, Allegheny will submit a written report to the Government, with a copy to the Manager-Raystown Lake, summarizing the operational performance of the Hydroelectric Project, including the generated power in kilowatts and energy produced in kilowatt-hours.

7. Safety. The parties agree to cooperate fully in all reasonable functions to ensure a minimization of risk to public health and property in the operations of the Government

facilities and the Hydroelectric Project. Prior to any increase in flow from the Hydroelectric Project, Allegheny will institute a public warning system, including, but not necessarily limited to, the sounding of a claxon in a similar fashion to that employed at the Government facility.

D. Operation During Hydroelectric Project Shutdown.

1. Release Through Corps' Structures. When, for whatever reason, the Hydroelectric Project is not operating, or is otherwise unable to meet release rates as directed by the Government, all releases in excess of that being passed through the Hydroelectric Project, shall be passed through the Government facilities at the Government's discretion.

2. Notification of Scheduled Hydroelectric Project Outage. Allegheny shall notify the Government's authorized agent or agents by telephone communication with confirming letter, as far in advance as possible, and in no event later than one (1) week prior to any scheduled Hydroelectric Project outage.

3. Notification of Unanticipated Shutdowns. If for any reason Allegheny cannot regulate Hydroelectric Project discharge rates to meet release rates as directed by the Government, including but not limited to equipment malfunction or a forced outage event, Allegheny shall provide telephonic communication of this event as soon as possible both to the Government's authorized agent and to the Raystown Lake Manager or his designee. Allegheny shall also, as soon as possible, provide the Government with an estimate of its schedule for the resumption of normal Hydroelectric Project operation. Operation of the Hydroelectric

Project will be resumed upon notice to and concurrence with the Goyernment.

E. Maintenance or Construction.

1. Right to Perform Work. The Government may maintain, repair, and construct at the Raystown Lake Dam and Reservoir, consistent with the authorized Project purposes and other Federal interests.

2. Bypass Flows. If the Government finds it necessary to shutdown the Raystown Lake Dam for non-routine maintenance or other unusual conditions, Allegheny shall provide for total bypass flows, as determined by the Baltimore District during that period. The said bypass flows will pass through Allegheny's Hydroelectric Project but will not exceed the maximum discharge capability of the Hydroelectric Project.

3. Hydroelectric Project Maintenance. Allegheny agrees that prior to the performance of any maintenance activity beyond the powerhouse structure and switchyard of the Hydroelectric Project, it will provide telephonic notice of the event to the Manager-Raystown Lake or other site personnel as denoted under Article III D.

Allegheny agrees to maintain an unobstructed channel from the Government's outlet plunge pool to the natural channel of the river. This channel shall be no less than 2 feet deep and 10 feet wide at 200 cfs throughout its length to provide free passage for fish.

F. Emergency Conditions.

1. Emergency Operation. When, in the sole judgment of the Government, an emergency situation arises, constituting conditions hazardous to life or property which requires an operation different from that provided for in normal operation, as set forth above, normal operating procedures may be suspended. When the Government determines that the emergency situation no longer exists, normal operating procedures shall be reinstated.

2. Emergency Procedure. The parties agree that Allegheny shall provide an emergency shutoff device to be installed at the Government project. An authorized agent of the Government at the site of the Government facilities shall at all times have the right to activate the device for the limited and express purpose of accomplishing a shutdown of the Hydroelectric Project when an emergency situation, limited to conditions hazardous to life or property warrants such action and Allegheny is unable, for whatever reason, to take this action.

The parties agree that the Government's use of the emergency shutoff device, for the purposes stated herein, only represents a backup to the capability of Allegheny to shut down the Hydroelectric Project in the event of an emergency.

3. Emergency Condition Communications. In the event of any such suspension of normal operating procedures as provided above, or in the event that an authorized agent of the Government finds it necessary to utilize the emergency shutoff device for the Hydroelectric Project, as provided above, the Government shall provide telephonic communication of this event as soon as

possible to Allegheny's authorized agent. The Government shall also, as soon as possible, provide Allegheny with an estimate of its schedule for the resumption of normal operation.

ARTICLE V - INSPECTIONS

A. Periodic Inspections

Pursuant to Article 43 of the License, Allegheny shall permit the Baltimore District to inspect the Hydroelectric Project as part of the Corps of Engineers Periodic Inspection and Continuing Evaluation of Completed Civil Works Structure Program. The initial inspection shall be conducted in August of 1989 and will be made at one-year intervals for the next four years, at two-year intervals for the following four years, and then may be extended to each five years if warranted by the results of the previous inspections. Intervals between inspections may be increased up to five years pending results of a request from Allegheny and the results of the initial inspection.

B. Testing of Emergency Shutoff Device

The parties agree to establish times for periodic testing of the emergency shutdown device to ensure that the device is in proper working order. The periodic testing will be coordinated at mutually agreed upon times to minimize interference with the Hydroelectric Project, and will occur at least one and not more than three times annually.

ARTICLE VI - NOTICES

Any notices required by the terms of this Agreement shall be served at the following addresses:

Allegheny Electric Cooperative, Inc.:

Jesse C. Tilton III, President
Allegheny Electric Cooperative, Inc.
P. O. Box 1266
Harrisburg, PA 17108-1266

and

Anthony C. Adonizio, Esquire
Deputy General Counsel
Allegheny Electric Cooperative, Inc.
P. O. Box 1266
Harrisburg, PA 17108-1266

and

Mary Ann Hosko, P.E.
Hydroelectric Projects Manager
Allegheny Electric Cooperative, Inc.
P. O. Box 1266
Harrisburg, PA 17108-1266

Government:

District Engineer
U.S. Army Corps of Engineers
Baltimore District
P. O. Box 1715
Baltimore, MD 21203-1715

and

Park Manager
U.S. Army Corps of Engineers
Raystown Lake
Hesston, PA 16647

and

Chief
Water Control Management Section
U. S. Army Corps of Engineers
Baltimore District
P. O. Box 1715
Baltimore, MD 21203-1715

ARTICLE VII - DISPUTES

Any disputes or controversies between the parties concerning any matter or subject dealt with in this Agreement which cannot be resolved in a reasonable time between the parties shall be referred to FERC for resolution pursuant to the applicable provisions of the said License at Article 48.

No legal proceedings may be instituted involving any disputes or controversies between the parties concerning any matter or subject dealt with in this Agreement unless good faith negotiations between the parties have resulted in an impasse.

ARTICLE VIII - REOPENER PROVISION

A. Provision For Amendment.

Recognizing that Article 44 of the License denotes that this Agreement shall be subject to revision, the parties agree that, upon the written request of either party, this Agreement shall be reviewed and, by mutual assent, amended in writing, as operating experience is gained and as conditions warrant.

B. Meetings to Review.

In further recognition of the evolving nature of the parties' relationship as operating experience is gained, the parties agree to meet annually and also periodically in addition as requested by either party, for the purpose of reviewing the performance under this Agreement.

ARTICLE IX - SAVINGS CLAUSE

Nothing in this Operating Agreement shall be deemed as a waiver of any requirement or obligation imposed by the terms and conditions of the said License or any amendment to the License issued by FERC.

ARTICLE X - EFFECT OF LICENSE AMENDMENT

Insofar as any duty or right, as provided herein, relates to, is determined by, or otherwise incorporates a provision of the aforesaid License, as amended, the parties acknowledge and agree that a modification, amendment, amplification or cancellation of a term of the said License by FERC may necessarily have an impact upon, or otherwise work a change in duty or right arising hereunder. The parties further agree to be bound by any such change of a duty or right herein.

ARTICLE XI - SEVERABILITY

If any part, term, or provisions of this Agreement shall be held illegal, unenforceable, or in conflict with any applicable law, the validity of the remaining portions or provisions shall not be affected thereby.

ARTICLE XII - FORCE MAJEURE

Neither party to this Agreement shall be liable for, or be considered to be in breach of or default under this Agreement because of causes or conditions beyond the party's reasonable control, and without the fault or negligence of either party.

Such causes shall include, but are not limited to: fire, explosions, earthquakes, storms, flood, wind, drought and acts of God or the elements (unless avoidable by reasonable care), strikes or other industrial disturbances (reasonably justified), insurrections, terrorist activities and war. No delay in performing will be justified under the term "Force Majeure" excepting so far as the nonperforming party, within two (2) weeks after the occurrence of the force majeure, gives the other party written notice describing the particulars of the occurrence. The suspension of performance shall be of no greater scope and of no longer duration than is required by the force majeure.

ARTICLE XIII - STOP WORK

The parties agree that, pursuant to Article 43 of the subject License, in an emergency situation causing imminent danger to the structural integrity or safety of the Government's facilities, the Government inspector shall have the authority to order Allegheny to cease operation or maintenance of the Hydroelectric Project while awaiting resolution of the problem as provided in the subject License. As used in this Article, "Government inspector" shall mean the District Engineer, the Government's authorized agents as denoted under Article III B., and the Manager-Raystown Lake.

ARTICLE XIV - RESTORATION

In the event that Allegheny abandons the Hydroelectric Project prior to completing construction or prior to placing the facility in operation, or at any time during operation, the

Government shall notify Allegheny that it is taking possession of the facility and shall remove all construction whether completed or not and shall restore the area to the condition existing prior to the start of construction. The cost of restoration shall be borne by Allegheny.

ARTICLE XV - HOLD HARMLESS

1. Allegheny agrees to hold harmless and indemnify the Government, its employees and agents from any losses and damages and from any liability including but not limited to personal injury, death, property damage or liability of any kind or of any nature whatsoever and by whomsoever arising directly or indirectly by virtue of the activities of Allegheny, its agents, or contractors in the course of the general operations and maintenance of FERC License Project No. 2769 - PA.

2. Allegheny shall have no claim against the United States arising from the effect of any changes made in the operating pool levels at the Raystown Dam.

3. In the event that the Government, in its sole discretion, acts, or fails to act under the Emergency Procedure designated under Article IV F Emergency Conditions, Allegheny agrees to hold the Government harmless from any and all damage, loss or claim, including but not limited to those caused by the fault or negligence of the Government, its employees, agents, or contractors.

ARTICLE XVI - OTHER PERMITS

In the course of its activities hereunder, Allegheny agrees to secure and obtain all necessary federal, state and local permits as may be required.

ARTICLE XVII - CONSTRUCTION

Whenever the context requires, the singular shall be substituted for the plural and vice versa.

Headings are for convenience only and do not constitute a part of this Agreement.

ARTICLE XVIII - NO WAIVERS

Failure of either Allegheny or the Government to insist in any one or more instances on performance of any of the terms and conditions of this Agreement, or to exercise any right or privilege contained in this Agreement, or the waiver of any breach of the terms and conditions of this Agreement, shall not be considered as thereafter waiving any such terms, conditions, rights or privileges, and the same shall continue and remain in force and effect as if no waiver had occurred.

ARTICLE XVIX - TERM

This Agreement shall be and remain in force and effect until the expiration of the subject License, or any renewal or extension thereof, by FERC or its successor entity.

ARTICLE XX - GOVERNING LAW

This Agreement shall be construed and enforced in accordance with the laws of the United States of America.

ARTICLE XXI - REQUISITE AUTHORITY

The parties hereto warrant that their respective signatories have the requisite authority to execute and bind their respective bodies. In verification hereof, Allegheny attaches, as Attachment C, the affidavit of its executing officer.

ARTICLE XXII - SUCCESSORS AND ASSIGNS

Allegheny shall not transfer or assign this contract nor any rights acquired thereunder nor grant any interest, privilege or license whatsoever in connection with this contract without the approval of the Government, such approval not to be withheld insofar as Allegheny enters into a sale-leaseback transaction in which Allegheny retains complete responsibility for operation of the Hydroelectric Project.

ARTICLE XXIII - ADDITIONAL STANDARD PROVISIONS

The following standard civil relocation contract provisions are hereby made a part of this Agreement:

A. Covenant Against Contingent Fees.

Allegheny warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or

bona fide established commercial or selling agencies maintained by Allegheny for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

B. **Officials Not to Benefit.**

No member of or delegate to Congress, or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

C. **Gratuities.**

1. The Government may, by written notice to Allegheny, terminate the right of Allegheny to proceed under this contract if it is found, after notice and hearing, by the Secretary of the Army, or the Chief of Engineers, Department of the Army, as his duly authorized representative, that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by Allegheny or any agent or representative of Allegheny to any officer or employee of the Government with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such contract; provided, that the existence of the facts upon which the Secretary or his duly authorized representative makes such findings shall be in issue and may be reviewed in any competent court.

2. The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

D. Equal Opportunity.

The following clause is applicable unless this contract is exempt under the rules and regulations of the Secretary of Labor (41 C.F.R. Chapter 60 and ASPR 7-103.18).

During performance of this contract, Allegheny agrees as follows:

Allegheny will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Allegheny will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Allegheny agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the District Engineer setting forth the provisions of this nondiscrimination clause.

ARTICLE XXIV - ENTIRE AGREEMENT

While the parties have entered into an agreement relative to the specific requirements of Article 41 of the subject License,

and while the parties may deem it necessary or appropriate to enter into an agreement or agreements concerning other particular subjects, this Agreement constitutes the entire understanding and agreement between the parties with regard to all matters herein, and there are no other agreements, conditions or representations, oral or written, express or implied, with regard thereto. This agreement may be amended only in writing signed by both parties hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers as of the date first above written.

ALLEGHENY ELECTRIC COOPERATIVE, INC

By Jesse C. Tilton III
Jesse C. Tilton III, President

ATTEST:

William E. Mowatt
William E. Mowatt
Assistant Secretary

THE UNITED STATES OF AMERICA

By Bernard E Stalmann
Bernard B. Stalmann
Colonel, Corps of Engineers
District Engineer

Pennsylvania Fish & Boat Commission

established 1866

BUREAU OF FISHERIES
450 ROBINSON LANE
BELLEFONTE, PA 16823
814-359-5177 – 814-359-5153 (FAX)
E-MAIL: LEYOUNG@PA.GOV

April 25, 2014

Raystown Hydroelectric Project
13797 Point Rd., P.O. Box 395
Huntingdon, PA 16652

Re: Low Impact Hydropower Institute (LIHI) annual compliance update
Raystown Hydroelectric Project, Allegheny Electric Cooperative, Inc.
Raystown Dam, Huntingdon County, PA (FERC Project No. 2769-PA)
Low Impact Hydropower Institute Certificate No. 23

Dear Mr. Shearn,

I am writing in response to your March 10, 2014 letter requesting an update on the status of fishery restoration programs or initiatives that affect the Raystown Hydroelectric Project. We have reviewed our current and anticipated fishery management objectives for Lake Raystown, the Raystown Branch of the Juniata River, and the Juniata River in the vicinity of the Raystown project. We have no outstanding issues that we believe Allegheny Energy Cooperative should address at this time. We have provided some comments below based on LIHI's December 2013 on-line questionnaire to substantiate this position.

Flows
The Operating Agreement between the U.S. Army Corps of Engineers and Allegheny Electric Cooperative, Inc. requires that Allegheny Electric pass flows required by the Corps at all times. It also specifies that recreational enhancement is one of the authorized purposes of the dam and that the Corps may make directives in response to an emergency situation. PFBC is not aware of any operation contrary to the Operating Agreement and flows that are released support habitat downstream of the dam.

Water Quality
Operation is consistent with Commonwealth of Pennsylvania Fishing and Boating Regulations, Title 58, Pennsylvania Code §57.24, which states that "Water quality must not be adversely affected by the hydrodevelopment."

Fish Passage and Protection
Anadromous and catadromous fish passage was not required in the hydropower licensing process at Raystown Dam and is not being considered currently.

Threatened and Endangered Species Protection
PFBC is not aware of any actual or projected impacts to state or federally threatened or endangered aquatic species, reptiles and amphibians.

Recreation
At the direction of our Board of Commissioners, Pennsylvania Fish and Boat Commission staff are in the process of is evaluating the potential of waters across the state for their potential as a tailwater trout fishery. This evaluation has included the Raystown Branch of the Juniata River downstream of Raystown Dam due to the significant quantity of cold water available in Lake Raystown. As you know, on March 5, 2013 our staff met with you and representatives of the U. S. Army Corps of Engineers to discuss options that might make a tailwater trout fishery possible. As a result of that meeting we recognize that the development of such a fishery could require such things as major structural changes to the hydropower intake and an evaluation of the potential effects changes in operation on the existing fisheries of both the lake and the river downstream of the dam. While we may be interested in further discussions about this matter in the future, we recognize, as was expressed at the March 5 meeting, that the Corps of Engineers is not interested in considering changes in operation in the near term.

We currently manage Raystown Lake as a two story fishery with both coldwater and warmwater game fish at different depths. We recognize the presence and value of a warmwater fishery in the Raystown Branch and Juniata Rivers and we are currently managing the area downstream of the hydroelectric facility for this purpose.

Facilities Recommended for Removal
Our agency is not aware of any recommendation to remove this dam or associated facilities.

Thank you for considering our comments. If you have any questions, please contact Mark Hartle at (814) 359-5133 or mhartle@pa.gov.

Sincerely,

Leroy M. Young, Jr.
Director

c: William Shearn, Raystown Hydroelectric Project
PFBC – K. Kuhn, D. Miko, M. Hartle
USACOE – Nicholas Krupa

Carbaugh, Bill

From: Shearn, Bill
Sent: Wednesday, October 25, 2017 8:12 AM
To: 'Shannon Ames'
Cc: Sallade, Todd; Ricci, Ben; Carbaugh, Bill; Schaeffer, Bill
Subject: Raystown 2017 Recert Attachment
Attachments: 017 PA Fish LIHI Ltr.pdf

Shannon,

Per our previous discussions, we have finally received the requested correspondence from the PA Fish Commission.

This letter addresses the LIHI question on downstream management as part of the 2017 recertification.

This along with the previous correspondence and fee paid should satisfy all requested information.

Thank you for your patience.

Bill Shearn

Allegheny Electric Cooperative, Inc.
Supt. of Operations
Raystown Hydroelectric Project (LIHI #23)

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
595 E. Rolling Ridge Drive
Bellefonte, PA 16823
Phone: 814-359-5237
Fax: 814-359-5175

William Shearn, Superintendent of Operations
Allegheny Electric Cooperative
P.O. Box 395
13797 Pont Road
Huntingdon, PA 16652

Re: Low Impact Hydropower Institute (LIHI) annual compliance update
Raystown Hydroelectric Project, Allegheny Electric Cooperative, Inc.
Raystown Dam, Huntingdon County, PA (FERC Project No 2769-PA)
Low Impact Hydropower Institute Certificate No. 23

Dear Mr. Shearn,

I am writing in response to your request for an update on the status of the downstream fisheries management objectives or initiatives that may affect the Raystown Hydroelectric Project. The fisheries at Lake Raystown, Raystown Branch of the Juniata River and the Juniata River in the vicinity of Raytown Project, continue to be managed in the same manner as stated in our April 25, 2014, letter to you.

We currently manage Raytown Lake as a two-story fishery with both coldwater and warmwater game fish at different depths. We recognize the presence and values of a warmwater fishery in the Raystown Branch and Juniata Rivers and we are currently managing the area downstream of the hydroelectric facility for this purpose.

If you have any questions, please contact me at (814)359-5194 or hsmiles@pa.gov.

Sincerely,

Heather Smiles

Heather Smiles
Chief

c: PFBC – K. Kuhn

ELECTRIC COOPERATIVE, INC.

212 LOCUST ST. • P.O. BOX 1266 • HARRISBURG, PA 17108-1266 • PHONE 717/233-5704 • FAX 717/234-1309

March 30, 2022

Re: Raystown Hydroelectric Project; William F. Matson Generating Station
FERC Project No. 2769-PA
Water Temperature Monitoring Plan; 2021 Annual Report

The Honorable Secretary Bose:

Please find enclosed the annual report of the Water Temperature Monitoring Plan ("Report") covering the period January through December 2021, submitted to the Federal Energy Regulatory Commission ("Commission") pursuant to Article 34 of the Raystown Hydroelectric Project license as well its July 23, 1990 order directing these submissions..

Sincerely,

William I. Schaeffer Jr.

William I. Schaeffer Jr.
Billing & Reporting Coordinator

Enclosures

DISTRIBUTION LIST
Water Temperature Monitoring Plan

Todd Sallade, V.P. Power Supply & Engineering
Allegheny Electric Cooperative, Inc.
P.O. Box 1266
Harrisburg, PA 17108

William Schaeffer Jr., Billing & Reporting Coordinator
Allegheny Electric Cooperative, Inc.
P.O. Box 1266
Harrisburg, PA 17108

Julie Fritz
Chief, Water Resources Section
U.S. Army Corps of Engineers
Room 07-A-05
Baltimore, MD 21201

Jude Harrington, Operations Manager
U.S. Army Corps of Engineers
Raystown Lake Office
6145 Seven Points Road
Hesston, PA 16647

Heather Smiles, Chief
Pennsylvania Fish and Boat Commission
595 E. Rolling Ridge Drive
Bellefonte, PA 16823

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

John Spain, P.E.
Federal Energy Regulatory Commission
19 West 34th Street, Suite 400
New York, NY 10001

William D. Carbaugh, Superintendent
Operations & Maintenance
Raystown Hydroelectric Project
William F. Matson Generating Station
P.O. Box 395
Huntingdon, PA 16652-0395

The Honorable Kimberly D. Bose (via e-filing)
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20426

ALLEGHENY ELECTRIC COOPERATIVE, INC.

Raystown Hydroelectric Project
William F. Matson Generating Station
FERC Project No. 2769-PA

ARTICLE 34
WATER TEMPERATURE MONITORING REPORT
2021 ANNUAL REPORT

March 2022

Prepared by:
Allegheny Electric Cooperative, Inc.
212 Locust Street
P.O. Box 1266
Harrisburg, PA 17108-1266

ALLEGHENY ELECTRIC COOPERATIVE, INC.
Raystown Hydroelectric Project
William F. Matson Generating Station
FERC Project No. 2769-PA

WATER TEMPERATURE MONITORING PLAN
2021 ANNUAL REPORT

I. PRESENTATION OF DATA (JANUARY–DECEMBER 2021)

A. Tables 1-12
B. Figure 1

II. AGENCY COMMENT LETTERS

A. Allegheny Solicitation of Comments (February 24, 2022)

III. ANALYSIS AND CONCLUSION OF LICENSEE

ALLEGHENY ELECTRIC COOPERATIVE, INC.
Raystown Hydroelectric Project
William F. Matson Generating Station
FERC Project No. 2769-PA

WATER TEMPERATURE MONITORING PLAN
2021 ANNUAL REPORT

I. PRESENTATION OF DATA (JANUARY–DECEMBER 2021)

In accordance with Article 34 of the FERC License for this project and with FERC's July 23, 1990 order[1] approving water temperature monitoring at the project site, Allegheny Electric Cooperative attaches the data associated with the operation of the Raystown Hydroelectric Project as follows:

- January–December 2021 (issued February 24, 2022)

- The data is shown on the attached twelve tables and shown in graphic form on Figure 1.

[1] *Allegheny Elec. Coop., Inc.*, 52 FERC ¶ 62,035 (1990).

ALLEGHENY ELECTRIC COOPERATIVE, INC.
Raystown Hydroelectric Project
William F. Matson Generating Station
FERC Project No. 2769-PA

WATER TEMPERATURE MONITORING PLAN
2021 ANNUAL REPORT

Temperature Control Gate Operational History

Year	Start	°F Lake/Tailrace	End	°F Lake/Tailrace
1988	May 1	50/49	October 18	60/58
1989	April 19	50/48	November 13	54/56
1990	April 26	59/50	October 20	64/61
1991	April 2	41/39	October 7	64/63
1992	April 21	49/44	October 15	62/59
1993	May 1	59/51	October 6	63/61
1994	April 19	51/47	October 6	66/63
1995	April 18	46/43	October 10	68/64
1996	April 18	45/41	October 10	63/63
1997	April 2	39/37	October 21	63/61
1998	April 1	50/45	October 20	55/57
1999	April 26	52/45	October 7	64/59
2000	April 3	46/39	October 11	63/55
2001	April 27	57/48	October 17	62/58
2002	April 17	59/50	October 28	57/55
2003	April 19	49/NA	October 7	63/62
2004	April 21	53/48	October 12	64/62
2005	April 15	51/44	October 18	62/63
2006	April 18	52/47	October 4	67/65
2007	April 24	53/48	October 29	63/62
2008	April 17	52/47	November 3	56/54
2009	April 28	57/51	October 26	58/56
2010	April 14	56/52	October 19	62/61
2011	April 12	47/45	November 1	58/54
2012	March 22	54/44	October 10	67/64
2013	May 6	61/53	October 21	65/62
2014	April 14	45/42	November 5	57/55
2015	April 27	51/48	October 15	66/63
2016	April 20	57/48	October 28	61/59
2017	May 15	60/56	October 25	67/64
2018	May 9	61/54	October 29	60/57
2019	May 2	58/54	October 16	68/65
2020	May 15	57/53	October 21	63/62
2021	April 9	58/47	October 29	64/63

ALLEGHENY ELECTRIC COOPERATIVE, INC.
Raystown Hydroelectric Project
William F. Matson Generating Station
FERC Project No. 2769-PA

ARTICLE 34
WATER TEMPERATURE MONITORING PLAN
2021 ANNUAL REPORT

II. AGENCY COMMENT LETTERS

In accordance with the Water Temperature Monitoring Plan, Allegheny, by letter of February 24, 2022, solicited comments on the effectiveness of the intake structure in maintaining the water temperature of the powerhouse discharge at levels that protect fish resources and also to solicit agency recommendations for changes in project operation or facilities necessary to maintain water temperature of the power house discharge at these levels.

The following responses were received:

U.S Fish & Wildlife Service – Richard C. McCorkle, Biologist (via March 14, 2022 email)

Mr. McCorkle thanked us for the opportunity to review the report and did not have any comments or concerns regarding the 2021 water temperature report.

Pennsylvania Fish and Boat Commission – Garret Kratina, Biologist (via March 17, 2022 email)

Mr. Kratina stated that it appears that the water temperature objectives were adequately met through the duration of the monitoring period.

III. ANALYSIS AND CONCLUSION OF LICENSEE

Allegheny will continue to operate the water temperature gates in concurrence with the Baltimore District Corps of Engineers, as outlined in the Water Temperature Monitoring Plan, with temperature objectives, as modified in the June 1, 1993 FERC Order. Water temperature gate operating and monitoring is satisfactory.

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #1 JANUARY 2021

		<-------- Hydro Project ---------->					<---------- Temperature in Degrees F ------ ------->							<---------- Temperature in Degrees C ------ ------->							
		U1 Flow	U2 Flow	AECTotal	COE Flow	TOTAL FLOW	Ts						Tr	Ts						Tr	Temperature Gate
Date		cfs	cfs	Flow cfs	cfs	CFS	785	780	775	770	765	760	Tailrace	785	780	775	770	765	760	Tailrace	Position
JAN	1	560	1185	1680	0	1680	42	40	40	40	40	40	42	6	4	4	4	4	4	6	Position 7
	2	390	795	1020	0	1020	42	41	40	41	41	41	42	6	5	4	5	5	5	6	
	3	560	1185	1680	0	1680	42	40	39	40	40	40	42	6	4	4	4	4	4	6	
	4	560	1185	1680	1060	2740	42	41	40	41	41	41	42	6	5	4	5	5	5	6	
	5	560	1185	1680	1060	2740	42	40	39	40	40	40	42	6	4	4	4	4	4	6	
	6	560	1185	1680	0	1680	42	40	40	41	40	40	42	6	4	4	5	4	4	6	
	7	560	1185	1680	0	1680	41	40	39	40	40	40	42	5	4	4	4	4	4	6	
	8	560	1185	1680	0	1680	41	40	39	40	40	40	42	5	4	4	4	4	4	6	
	9	560	1185	1680	0	1680	41	40	39	40	40	40	41	5	4	4	4	4	4	5	
	10	560	1185	1690	0	1690	41	39	39	40	39	40	41	5	4	4	4	4	4	5	
	11	560	1185	1680	0	1680	41	39	39	40	39	39	41	5	4	4	4	4	4	5	
	12	560	1185	1680	0	1680	41	39	38	39	39	39	41	5	4	3	4	4	4	5	
	13	0	1055	1010	0	1010	41	39	39	40	39	39	41	5	4	4	4	4	4	5	
	14	0	880	798	0	798	41	40	39	40	40	40	41	5	4	4	4	4	4	5	
	15	0	885	804	0	804	41	40	39	40	40	40	41	5	4	4	4	4	4	5	
	16	0	885	804	0	804	41	39	38	39	39	39	41	5	4	3	4	4	4	5	
	17	0	885	804	0	804	41	40	39	40	40	40	41	5	4	4	4	4	4	5	
	18	0	885	810	0	810	41	40	39	40	40	40	41	5	4	4	4	4	4	5	
	19	0	885	804	0	804	41	39	38	39	39	39	41	5	4	3	4	4	4	5	
	20	0	605	489	0	489	40	39	38	39	39	39	41	4	4	3	4	4	4	5	
	21	0	605	489	0	489	40	39	38	39	39	39	41	4	4	3	4	4	4	5	
	22	0	605	493	0	493	41	39	38	40	39	39	41	5	4	3	4	4	4	5	
	23	0	605	489	0	489	40	39	38	39	39	39	41	4	4	3	4	4	4	5	
	24	0	605	489	0	489	40	38	37	39	38	38	40	4	3	3	4	3	3	4	
	25	0	605	489	0	489	40	38	37	38	38	38	40	4	3	3	3	3	3	4	
	26	0	605	489	0	489	40	38	37	38	38	38	40	4	3	3	3	3	3	4	
	27	0	605	489	0	489	40	38	37	38	38	38	40	4	3	3	3	3	3	4	
	28	0	605	489	0	489	40	38	37	38	38	38	40	4	3	3	3	3	3	4	
	29	0	605	489	0	489	39	38	37	38	38	38	40	4	3	3	3	3	3	4	
	30	0	605	489	0	489	39	38	37	38	38	38	40	4	3	3	3	3	3	4	
	31	0	605	489	0	489	39	37	37	38	37	37	39	4	3	3	3	3	3	4	Position 7

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

TABLE #2 FEBRUARY 2021

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

		<-------- Hydro Project ---------->					<---------- Temperature in Degrees F ------ ------->							<---------- Temperature in Degrees C ------ ------->							
		U1 Flow	U2 Flow	AECTotal	COE Flow	TOTAL FLOW	Ts						Tr	Ts						Tr	Temperature Gate
Date		cfs	cfs	Flow	cfs	CFS	785	780	775	770	765	760	Tailrace	785	780	775	770	765	760	Tailrace	Position
FEB	1	0	605	493	0	493	38	37	36	37	37	37	39	3	3	2	3	3	3	4	Position 7
	2	0	605	493	0	493	39	37	36	37	37	37	39	4	3	2	3	3	3	4	
	3	0	605	489	0	489	39	37	37	37	37	37	39	4	3	3	3	3	3	4	
	4	0	605	489	0	489	39	37	36	37	37	37	39	4	3	2	3	3	3	4	
	5	0	605	475	0	475	39	37	36	37	37	37	39	4	3	2	3	3	3	4	
	6	0	605	475	0	475	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	7	0	605	475	0	475	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	8	0	605	475	0	475	39	37	36	37	37	37	39	4	3	2	3	3	3	4	
	9	0	620	484	0	484	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	10	0	620	484	0	484	37	36	35	36	37	37	39	3	2	2	2	3	3	4	
	11	0	620	484	0	484	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	12	0	620	489	0	489	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	13	0	620	489	0	489	38	36	35	37	36	36	39	3	2	2	3	2	2	4	
	14	0	620	484	0	484	36	36	35	36	36	36	39	2	2	2	2	2	2	4	
	15	0	620	484	0	484	37	36	36	37	37	37	39	3	2	2	3	3	3	4	
	16	0	620	489	0	489	38	36	36	37	37	36	39	3	2	2	3	3	2	4	
	17	0	620	489	0	489	37	36	35	37	37	37	39	3	2	2	3	3	3	4	
	18	0	620	489	0	489	37	36	35	36	36	36	38	3	2	2	2	2	2	3	
	19	0	890	799	0	799	36	35	34	35	35	35	38	2	2	1	2	2	2	3	
	20	0	895	805	0	805	37	36	35	36	35	35	38	3	2	2	2	2	2	3	
	21	0	895	805	0	805	37	35	34	35	35	35	37	3	2	1	2	2	2	3	
	22	0	895	805	0	805	37	35	34	35	35	35	37	3	2	1	2	2	2	3	
	23	0	895	805	0	805	36	35	34	35	35	35	37	2	2	1	2	2	2	3	
	24	0	895	805	0	805	37	35	34	35	35	35	37	3	2	1	2	2	2	3	
	25	0	895	817	0	817	37	36	35	36	36	36	38	3	2	2	2	2	2	3	
	26	560	1185	1690	1900	3590	37	35	34	35	35	35	38	3	2	1	2	2	2	3	
	27	560	1185	1690	1860	3550	37	36	35	36	35	35	38	3	2	2	2	2	2	3	
	28	560	1185	1690	1860	3550	37	36	35	36	36	36	38	3	2	2	2	2	2	3	Position 7

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #3 MARCH 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
MAR	1	560	1185	1690	7650	9340	38	36	35	36	36	36	38	3	2	2	2	2	2	3	Position 7
	2	560	1185	1690	12310	14000	37	36	35	36	36	36	38	3	2	2	2	2	2	3	
	3	560	1185	1690	3600	5290	37	36	35	36	36	35	38	3	2	2	2	2	2	3	
	4	560	1185	1690	3740	5430	38	36	35	36	36	36	38	3	2	2	2	2	2	3	
	5	560	1185	1690	3710	5400	38	36	35	36	36	36	38	3	2	2	2	2	2	3	
	6	0	1185	1140	0	1140	37	36	35	36	36	36	38	3	2	2	2	2	2	3	
	7	0	1185	1140	670	1810	37	35	34	35	35	35	38	3	2	1	2	2	2	3	
	8	0	1185	1140	670	1810	37	36	35	36	36	36	38	3	2	2	2	2	2	3	
	9	0	1185	1140	660	1800	38	36	35	36	36	36	38	3	2	2	2	2	2	3	
	10	0	1185	1140	660	1800	38	36	36	37	36	36	38	3	2	2	3	2	2	3	
	11	0	1185	1150	0	1150	38	37	36	37	37	37	38	3	3	2	3	3	3	3	
	12	560	1185	1680	0	1680	39	37	36	37	37	37	38	4	3	2	3	3	3	3	
	13	560	1185	1690	0	1690	38	36	36	37	37	37	39	3	2	2	3	3	3	4	
	14	560	1185	1690	0	1690	39	37	36	38	37	37	39	4	3	2	3	3	3	4	
	15	560	1185	1690	0	1690	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	16	560	1185	1680	0	1680	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	17	560	1185	1680	0	1680	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	18	455	935	1250	0	1250	39	38	37	38	38	38	39	4	3	3	3	3	3	4	
	19	560	1185	1690	0	1690	38	37	36	37	37	37	39	3	3	2	3	3	3	4	
	20	560	1185	1690	0	1690	39	37	36	37	37	37	39	4	3	2	3	3	3	4	
	21	560	1185	1690	0	1690	39	37	37	38	37	37	39	4	3	3	3	3	3	4	
	22	560	1185	1690	0	1690	39	38	37	38	38	38	39	4	3	3	3	3	3	4	
	23	560	1185	1700	0	1700	40	39	38	39	39	39	40	4	4	3	4	4	4	4	
	24	560	1185	1700	0	1700	40	39	39	40	39	39	40	4	4	4	4	4	4	4	
	25	560	1185	1690	0	1690	41	39	38	39	39	39	40	5	4	3	4	4	4	4	
	26	445	910	1210	0	1210	48	47	44	43	42	43	41	9	8	7	6	6	6	5	
	27	445	910	1220	0	1220	47	45	43	42	41	42	41	8	7	6	6	5	6	5	
	28	445	910	1210	0	1210	49	48	45	44	43	44	43	9	9	7	7	6	7	6	
	29	445	910	1210	0	1210	47	45	43	42	41	42	42	8	7	6	6	5	6	6	
	30	355	730	897	0	897	48	47	44	44	43	44	43	9	8	7	7	6	7	6	
	31	355	730	903	0	903	49	48	46	45	44	45	44	9	9	8	7	7	7	7	Position 7

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

(7) Lake Temps & Tailwater Temp calibrated on 25-Mar-21

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #4 APRIL 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
APR	1	355	730	903	0	903	48	46	44	43	42	43	43	9	8	7	6	6	6	6	Position 7
	2	355	730	897	0	897	48	46	44	43	42	44	43	9	8	7	6	6	7	6	
	3	355	730	897	0	897	47	46	44	43	42	43	43	8	8	7	6	6	6	6	
	4	0	975	897	0	897	50	48	46	45	44	45	43	10	9	8	7	7	7	6	
	5	0	980	903	0	903	50	49	47	46	45	46	45	10	9	8	8	7	8	7	
	6	0	1185	1140	0	1140	52	51	49	48	47	48	45	11	11	9	9	8	9	7	
	7	0	1185	1140	0	1140	55	54	51	49	48	48	46	13	12	11	9	9	9	8	
	8	445	910	1210	0	1210	58	56	53	49	45	47	48	14	13	12	9	7	8	9	
	9	445	910	1210	0	1210	58	56	53	51	43	44	47	14	13	12	11	6	7	8	Position 2
	10	445	910	1210	0	1210	56	54	52	51	50	48	48	13	12	11	11	10	9	9	
	11	445	910	1220	0	1220	58	57	52	48	47	48	48	14	14	11	9	8	9	9	
	12	445	910	1230	0	1230	61	59	53	48	46	47	49	16	15	12	9	8	8	9	
	13	560	1185	1690	1100	2790	59	57	55	53	52	53	49	15	14	13	12	11	12	9	
	14	560	1185	1690	1180	2870	62	60	58	48	46	47	49	17	16	14	9	8	8	9	
	15	560	1185	1690	620	2310	60	59	57	55	50	51	50	16	15	14	13	10	11	10	
	16	560	1185	1690	0	1690	60	59	57	56	55	57	52	16	15	14	13	13	14	11	
	17	560	1185	1700	0	1700	59	58	56	55	54	55	53	15	14	13	13	12	13	12	
	18	560	1185	1690	0	1690	59	57	55	54	53	55	52	15	14	13	12	12	13	11	
	19	560	1185	1690	0	1690	60	59	56	55	53	55	52	16	15	13	13	12	13	11	
	20	560	1185	1690	0	1690	61	60	58	57	55	57	52	16	16	14	14	13	14	11	
	21	445	910	1210	0	1210	62	60	58	57	56	52	53	17	16	14	14	13	11	12	
	22	445	910	1210	0	1210	60	58	57	56	54	56	53	16	14	14	13	12	13	12	
	23	0	895	805	0	805	54	52	52	53	52	53	53	12	11	11	12	11	12	12	Position 1
	24	0	895	805	0	805	54	53	53	53	53	53	53	12	12	12	12	12	12	12	
	25	0	895	805	0	805	54	52	52	53	52	52	53	12	11	11	12	11	11	12	
	26	0	895	805	0	805	54	53	52	53	52	53	53	12	12	11	12	11	12	12	
	27	0	895	805	0	805	55	54	54	54	53	52	54	13	12	12	12	12	11	12	
	28	0	895	811	0	811	59	57	55	51	51	51	54	15	14	13	11	11	11	12	
	29	0	710	598	0	598	59	57	56	56	52	50	55	15	14	13	13	11	10	13	
	30	0	710	598	0	598	60	58	58	59	57	55	57	16	14	14	15	14	13	14	Position 1

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #5 MAY 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
MAY	1	0	710	598	0	598	58	56	56	57	56	57	56	14	13	13	14	13	14	13	Position 1
	2	0	715	598	0	598	59	58	57	54	53	53	56	15	14	14	12	12	12	13	
	3	0	720	603	0	603	60	58	58	57	55	54	57	16	14	14	14	13	12	14	
	4	0	720	603	0	603	61	57	56	55	54	54	56	16	14	13	13	12	12	13	
	5	0	720	603	0	603	63	61	57	56	54	54	57	17	16	14	13	12	12	14	
	6	560	1185	1680	0	1680	61	59	59	59	59	59	57	16	15	15	15	15	15	14	Position 2
	7	560	1185	1680	0	1680	61	60	59	57	55	52	56	16	16	15	14	13	11	13	
	8	560	1185	1680	0	1680	60	58	58	59	58	57	56	16	14	14	15	14	14	13	
	9	560	1185	1680	0	1680	59	57	57	58	57	58	56	15	14	14	14	14	14	13	
	10	560	1185	1680	0	1680	58	56	56	57	56	57	55	14	13	13	14	13	14	13	
	11	560	1185	1680	0	1680	59	57	57	58	57	58	56	15	14	14	14	14	14	13	
	12	560	1185	1690	0	1690	58	56	56	57	56	57	56	14	13	13	14	13	14	13	
	13	560	1185	1690	500	2190	59	57	57	58	57	58	56	15	14	14	14	14	14	13	
	14	560	1185	1690	0	1690	59	58	57	55	55	55	56	15	14	14	13	13	13	13	
	15	500	1025	1430	0	1430	61	59	56	57	56	56	56	16	15	13	14	13	13	13	
	16	495	1020	1410	0	1410	63	62	59	59	58	56	57	17	17	15	15	14	13	14	
	17	495	1020	1410	0	1410	60	57	56	57	56	57	57	16	14	13	14	13	14	14	
	18	0	895	805	0	805	63	61	59	57	56	56	58	17	16	15	14	13	13	14	Position 1
	19	0	895	805	0	805	67	64	61	56	55	56	59	19	18	16	13	13	13	15	
	20	530	0	475	0	475	70	64	59	58	55	54	60	21	18	15	14	13	12	16	
	21	540	0	489	0	489	69	65	62	58	56	53	60	21	18	17	14	13	12	16	
	22	540	0	489	0	489	71	69	63	60	55	54	62	22	21	17	16	13	12	17	
	23	540	0	489	0	489	73	72	66	59	53	52	62	23	22	19	15	12	11	17	
	24	540	0	489	0	489	74	73	68	57	54	54	63	23	23	20	14	12	12	17	
	25	540	0	489	0	489	70	69	69	62	57	55	64	21	21	21	17	14	13	18	
	26	540	0	489	0	489	71	70	67	60	54	53	63	22	21	19	16	12	12	17	
	27	0	620	489	0	489	73	72	71	60	55	52	53	23	22	22	16	13	11	12	
	28	360	735	903	0	903	74	73	73	61	55	55	64	23	23	23	16	13	13	18	Position 2
	29	360	735	903	0	903	70	66	62	57	55	52	59	21	19	17	14	13	11	15	
	30	445	910	1200	0	1200	66	63	60	57	54	53	57	19	17	16	14	12	12	14	
	31	560	1185	1680	0	1680	65	63	63	59	54	54	58	18	17	17	15	12	12	14	Position 2

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #6 JUNE 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
JUN	1	0	975	900	0	900	67	66	66	66	54	55	60	19	19	19	19	12	13	16	Position 2
	2	0	975	897	0	897	69	66	66	65	54	54	62	21	19	19	18	12	12	17	
	3	0	985	903	0	903	70	68	67	64	56	54	63	21	20	19	18	13	12	17	
	4	0	985	903	0	903	70	69	68	65	57	54	64	21	21	20	18	14	12	18	
	5	0	985	903	0	903	73	72	71	64	57	54	64	23	22	22	18	14	12	18	
	6	0	895	799	0	799	75	74	74	67	59	53	66	24	23	23	19	15	12	19	Position 1
	7	0	620	489	0	489	78	76	73	63	56	53	67	26	24	23	17	13	12	19	
	8	0	620	484	0	484	80	77	70	64	57	53	67	27	25	21	18	14	12	19	
	9	0	620	484	0	484	80	79	71	66	55	55	67	27	26	22	19	13	13	19	
	10	360	735	910	0	910	79	79	74	63	61	54	67	26	26	23	17	16	12	19	Position 2
	11	560	1185	1680	0	1680	79	78	73	64	56	55	65	26	26	23	18	13	13	18	
	12	560	1185	1670	0	1670	75	74	70	63	58	58	63	24	23	21	17	14	14	17	
	13	560	1185	1670	0	1670	75	74	74	66	57	55	65	24	23	23	19	14	13	18	
	14	445	910	1200	0	1200	76	75	73	71	56	55	67	24	24	23	22	13	13	19	
	15	445	910	1200	0	1200	77	76	76	62	58	57	67	25	24	24	17	14	14	19	
	16	0	985	897	0	897	77	76	76	76	60	55	69	25	24	24	24	16	13	21	
	17	0	815	706	0	706	76	75	76	76	61	54	69	24	24	24	24	16	12	21	Position 1
	18	0	815	700	0	700	76	75	76	70	56	55	69	24	24	24	21	13	13	21	
	19	0	620	484	0	484	77	76	76	75	62	55	71	25	24	24	24	17	13	22	
	20	0	620	484	0	484	77	76	76	74	62	54	71	25	24	24	23	17	12	22	
	21	0	620	484	0	484	78	77	77	72	61	57	71	26	25	25	22	16	14	22	
	22	0	620	484	0	484	80	79	80	76	68	55	74	27	26	27	24	20	13	23	
	23	0	620	484	0	484	78	77	77	77	58	55	72	26	25	25	25	14	13	22	
	24	375	0	290	0	290	77	76	77	71	60	54	73	25	24	25	22	16	12	23	
	25	385	0	298	0	298	77	76	76	76	61	54	74	25	24	24	24	16	12	23	
	26	385	0	298	0	298	77	76	77	77	64	57	75	25	24	25	25	18	14	24	
	27	255	0	190	0	190	78	77	77	77	70	57	76	26	25	25	25	21	14	24	
	28	270	0	200	0	200	80	78	77	75	65	56	77	27	26	25	24	18	13	25	
	29	0	0	0	200	200	81	80	78	76	63	54	78	27	27	26	24	17	12	26	
	30	270	0	200		200	84	83	79	75	62	55	80	29	28	26	24	17	13	27	Position 1

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #7 JULY 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
JUL	1	270	0	200	0	200	85	84	84	75	62	56	82	29	29	29	24	17	13	28	Position 1
	2	270	0	200	0	200	83	82	82	74	64	55	80	28	28	28	23	18	13	27	
	3	270	0	200	0	200	82	81	82	79	65	55	80	28	27	28	26	18	13	27	
	4	270	0	200	0	200	81	80	81	76	63	57	79	27	27	27	24	17	14	26	
	5	270	0	200	0	200	81	80	79	76	63	55	78	27	27	26	24	17	13	26	
	6	270	0	200	0	200	82	81	80	75	65	56	79	28	27	27	24	18	13	26	
	7	270	0	200	0	200	84	83	84	79	64	56	82	29	28	29	26	18	13	28	
	8	270	0	200	0	200	84	84	83	77	64	55	81	29	29	28	25	18	13	27	
	9	270	0	200	0	200	83	82	83	77	68	57	81	28	28	28	25	20	14	27	
	10	270	0	200	0	200	82	81	82	82	67	57	80	28	27	28	28	19	14	27	
	11	270	0	200	0	200	82	82	82	75	62	55	80	28	28	28	24	17	13	27	
	12	270	0	200	0	200	82	81	82	81	64	54	80	28	27	28	27	18	12	27	
	13	360	735	893	0	893	82	82	82	71	62	57	74	28	28	28	22	17	14	23	Position 2
	14	445	910	1190	0	1190	83	83	82	82	64	58	74	28	28	28	28	18	14	23	
	15	360	735	900	0	900	83	83	83	83	67	57	76	28	28	28	28	19	14	24	
	16	375	0	283	0	283	84	84	83	78	67	56	81	29	29	28	26	19	13	27	Position 1
	17	395	0	301	0	301	84	84	84	78	66	58	81	29	29	29	26	19	14	27	
	18	395	0	305	0	305	84	83	84	83	73	59	81	29	28	29	28	23	15	27	
	19	480	0	797	0	797	83	82	83	80	66	57	79	28	28	28	27	19	14	26	
	20	0	0	0	342	342	83	82	83	81	66	57	76	28	28	28	27	19	14	24	
	21	0	0	0	190	190	84	83	83	80	66	58	76	29	28	28	27	19	14	24	
	22	0	620	470	0	470	83	82	83	82	66	58	78	28	28	28	28	19	14	26	
	23	440	0	375	193	568	82	81	82	82	67	58	79	28	27	28	28	19	14	26	
	24	270	0	200	0	200	82	82	82	79	68	59	80	28	28	28	26	20	15	27	
	25	270	0	200	0	200	82	81	82	82	69	61	80	28	27	28	28	21	16	27	
	26	270	0	200	0	200	83	82	82	82	70	59	81	28	28	28	28	21	15	27	
	27	270	0	200	0	200	83	83	83	80	67	58	81	28	28	28	27	19	14	27	
	28	270	0	200	0	200	84	83	84	80	72	58	82	29	28	29	27	22	14	28	
	29	270	0	200	0	200	84	83	84	78	66	58	77	29	28	29	26	19	14	25	Position 4
	30	270	0	200	0	200	83	82	82	82	75	62	79	28	28	28	28	24	17	26	
	31	270	0	200	0	200	81	81	82	82	66	59	77	27	27	28	28	19	15	25	Position 4

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #8 AUGUST 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
AUG	1	270	0	200	0	200	82	81	82	81	70	59	78	28	27	28	27	21	15	26	Position 4
	2	270	0	200	0	200	81	80	81	81	70	61	77	27	27	27	27	21	16	25	
	3	270	0	200	0	200	80	80	80	80	67	57	76	27	27	27	27	19	14	24	
	4	270	0	200	0	200	81	80	81	78	71	62	76	27	27	27	26	22	17	24	
	5	270	0	200	0	200	80	79	80	80	69	59	76	27	26	27	27	21	15	24	
	6	270	0	203	0	203	81	80	80	80	71	60	77	27	27	27	27	22	16	25	
	7	270	0	203	0	203	81	80	81	77	73	62	77	27	27	27	25	23	17	25	
	8	270	0	203	0	203	81	80	81	81	70	60	77	27	27	27	27	21	16	25	
	9	270	0	203	0	203	81	81	81	81	72	61	78	27	27	27	27	22	16	26	
	10	270	0	203	0	203	82	82	82	78	71	60	77	28	28	28	26	22	16	25	
	11	270	0	203	0	203	82	81	82	82	69	61	78	28	27	28	28	21	16	26	
	12	270	0	203	0	203	83	82	83	82	72	63	79	28	28	28	28	22	17	26	
	13	270	0	203	0	203	84	83	84	83	70	62	79	29	28	29	28	21	17	26	
	14	270	0	203	0	203	84	83	84	82	76	61	79	29	28	29	28	24	16	26	
	15	270	0	203	0	203	83	82	83	82	70	60	78	28	28	28	28	21	16	26	
	16	270	0	203	0	203	82	82	82	79	70	60	77	28	28	28	26	21	16	25	
	17	270	0	203	0	203	81	81	81	81	73	62	78	27	27	27	27	23	17	26	
	18	270	0	206	0	206	81	81	81	81	73	61	78	27	27	27	27	23	16	26	
	19	560	1185	1680	0	1680	80	80	80	80	80	81	76	27	27	27	27	27	27	24	Position 2
	20	0	895	794	0	794	81	80	81	81	76	60	76	27	27	27	27	24	16	24	Position 1
	21	0	905	800	0	800	81	80	81	80	69	60	76	27	27	27	27	21	16	24	
	22	0	620	479	0	479	82	81	81	80	75	62	78	28	27	27	27	24	17	26	
	23	0	620	479	0	479	82	81	81	80	74	61	78	28	27	27	27	23	16	26	
	24	270	0	200	0	200	83	82	83	82	72	65	81	28	28	28	28	22	18	27	
	25	270	0	200	0	200	83	82	82	81	74	63	81	28	28	28	27	23	17	27	
	26	270	0	200	0	200	84	83	83	78	74	61	79	29	28	28	26	23	16	26	Position 4
	27	270	0	200	0	200	85	84	84	81	74	64	80	29	29	29	27	23	18	27	
	28	270	0	200	0	200	84	84	83	80	71	62	79	29	29	28	27	22	17	26	
	29	270	0	200	0	200	84	84	83	79	73	63	78	29	29	28	26	23	17	26	
	30	270	0	203	0	203	83	83	83	83	76	66	80	28	28	28	28	24	19	27	
	31	560	1185	1680	0	1680	83	82	83	83	81	62	76	28	28	28	28	27	17	24	Position 2

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
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(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT
Raystown Hydroelectric Project - FERC Project 2769PA
Allegheny Electric Cooperative, Inc.

TABLE #9 SEPTEMBER 2021

		<-------- Hydro Project ---------->					<---------- Temperature in Degrees F ------ ------->							<---------- Temperature in Degrees C ------ ------->							
		U1 Flow	U2 Flow	AECTotal	COE Flow	TOTAL FLOW	Ts						Tr	Ts						Tr	Temperature Gate
Date		cfs	cfs	Flow	cfs	CFS	785	780	775	770	765	760	Tailrace	785	780	775	770	765	760	Tailrace	Position
SEP	1	560	1185	1710	0	1710	82	82	82	82	75	64	76	28	28	28	28	24	18	24	Position 2
	2	270	0	200	146	346	80	79	79	69	63	57	77	27	26	26	21	17	14	25	Position 1
	3	270	0	200	165	365	79	78	78	70	65	56	76	26	26	26	21	18	13	24	
	4	560	1185	1650	11850	13500	78	77	78	67	64	63	71	26	25	26	19	18	17	22	Position 2
	5	560	1185	1650	11250	12900	78	77	77	73	63	61	72	26	25	25	23	17	16	22	
	6	560	1185	1650	10650	12300	78	77	77	75	66	67	72	26	25	25	24	19	19	22	
	7	560	1185	1650	11600	13250	77	76	77	69	68	69	72	25	24	25	21	20	21	22	
	8	560	1185	1650	9250	10900	77	76	77	73	69	68	71	25	24	25	23	21	20	22	
	9	560	1185	1650	2800	4450	77	76	77	74	68	67	72	25	24	25	23	20	19	22	
	10	560	1185	1660	0	1660	77	76	76	76	68	68	72	25	24	24	24	20	20	22	
	11	560	1185	1660	0	1660	76	75	75	75	65	66	71	24	24	24	24	18	19	22	
	12	445	910	1190	0	1190	75	75	75	74	67	67	71	24	24	24	23	19	19	22	
	13	450	915	1190	0	1190	77	76	76	75	66	66	72	25	24	24	24	19	19	22	
	14	480	0	397	0	397	76	75	76	70	65	65	72	24	24	24	21	18	18	22	Position 1
	15	480	0	397	0	397	77	76	76	74	70	60	74	25	24	24	23	21	16	23	
	16	490	0	410	0	410	77	77	77	73	67	66	73	25	25	25	23	19	19	23	
	17	485	0	406	0	406	77	76	75	70	66	66	72	25	24	24	21	19	19	22	
	18	485	0	406	0	406	77	76	74	71	66	66	72	25	24	23	22	19	19	22	
	19	485	0	410	0	410	78	77	76	72	65	66	72	26	25	24	22	18	19	22	
	20	485	0	410	0	410	77	76	74	71	66	65	72	25	24	23	22	19	18	22	
	21	485	0	410	0	410	75	74	75	72	68	65	71	24	23	24	22	20	18	22	
	22	395	0	308	0	308	75	74	74	70	66	65	72	24	23	23	21	19	18	22	
	23	560	1185	1700	0	1700	74	73	74	74	73	74	71	23	23	23	23	23	23	22	Position 2
	24	560	1185	1650	4200	5850	74	73	73	73	72	66	70	23	23	23	23	22	19	21	
	25	560	1185	1650	1080	2730	73	72	73	73	72	73	70	23	22	23	23	22	23	21	
	26	560	1185	1650	1090	2740	73	72	72	72	72	73	70	23	22	22	22	22	23	21	
	27	560	1185	1670	0	1670	72	71	72	72	71	72	70	22	22	22	22	22	22	21	
	28	0	1075	1000	0	1000	72	71	71	72	71	72	70	22	22	22	22	22	22	21	
	29	0	1075	1000	0	1000	72	71	71	71	71	71	70	22	22	22	22	22	22	21	
	30	0	905	800	0	800	71	70	71	71	70	66	69	22	21	22	22	21	19	21	Position 1

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions
Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #10 OCTOBER 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
OCT	1	0	905	800	0	800	71	70	70	70	68	66	69	22	21	21	21	20	19	21	Position 1
	2	0	635	493	0	493	71	70	70	70	66	66	68	22	21	21	21	19	19	20	
	3	0	645	503	0	503	70	69	69	70	69	65	68	21	21	21	21	21	18	20	
	4	0	620	480	0	480	72	70	69	70	67	65	69	22	21	21	21	19	18	21	
	5	0	620	479	0	479	73	70	70	70	67	65	69	23	21	21	21	19	18	21	
	6	0	625	484	0	484	73	71	70	68	67	66	69	23	22	21	20	19	19	21	
	7	0	625	484	0	484	72	71	69	69	67	65	69	22	22	21	21	19	18	21	
	8	480	0	402	0	402	71	70	70	69	68	65	69	22	21	21	21	20	18	21	
	9	480	0	402	0	402	71	70	70	70	66	65	68	22	21	21	21	19	18	20	
	10	480	0	402	0	402	70	69	69	68	66	64	68	21	21	21	20	19	18	20	
	11	293	0	209	0	209	70	69	69	68	64	64	68	21	21	21	20	18	18	20	
	12	293	0	209	0	209	70	69	69	68	66	64	68	21	21	21	20	19	18	20	
	13	293	0	209	0	209	69	68	68	69	68	65	68	21	20	20	21	20	18	20	
	14	293	0	209	0	209	70	69	68	69	67	65	68	21	21	20	21	19	18	20	
	15	293	0	209	0	209	70	69	69	69	66	64	68	21	21	21	21	19	18	20	
	16	293	0	209	0	209	71	70	69	69	68	65	69	22	21	21	21	20	18	21	
	17	293	0	209	0	209	69	68	68	68	68	69	68	21	20	20	20	20	21	20	
	18	293	0	209	0	209	68	67	67	68	67	68	67	20	19	19	20	19	20	19	
	19	293	0	209	0	209	67	66	66	67	66	67	66	19	19	19	19	19	19	19	
	20	293	0	209	0	209	67	66	66	66	66	66	66	19	19	19	19	19	19	19	
	21	293	0	209	0	209	67	66	66	66	65	66	66	19	19	19	19	18	19	19	
	22	293	0	209	0	209	67	66	66	66	65	66	66	19	19	19	19	18	19	19	
	23	293	0	209	0	209	66	65	65	66	65	66	65	19	18	18	19	18	19	18	
	24	293	0	209	0	209	66	64	65	65	64	65	64	19	18	18	18	18	18	18	
	25	293	0	209	0	209	65	64	64	64	64	65	64	18	18	18	18	18	18	18	
	26	395	0	308	0	308	65	64	64	64	64	65	64	18	18	18	18	18	18	18	
	27	395	0	308	0	308	64	63	63	64	63	64	63	18	17	17	18	17	18	17	
	28	395	0	308	0	308	64	63	63	63	63	63	63	18	17	17	17	17	17	17	
	29	360	735	906	0	906	64	63	63	63	63	63	63	18	17	17	17	17	17	17	Position 7
	30	560	1185	1680	0	1680	63	62	62	62	62	62	62	17	17	17	17	17	17	17	
	31	390	795	998	0	998	62	61	61	62	61	62	62	17	16	16	17	16	17	17	Position 7

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
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(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

TABLE #11 NOVEMBER 2021

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

		<-------- Hydro Project ---------->					<---------- Temperature in Degrees F ------ ------->							<---------- Temperature in Degrees C ------ ------->							
		U1 Flow	U2 Flow	AECTotal	COE Flow	TOTAL FLOW	Ts						Tr	Ts						Tr	Temperature Gate
Date		cfs	cfs	Flow cfs	cfs	CFS	785	780	775	770	765	760	Tailrace	785	780	775	770	765	760	Tailrace	Position
NOV	1	390	795	998	0	998	62	61	61	61	61	61	61	17	16	16	16	16	16	16	Position 7
	2	0	1075	1000	0	1000	62	60	60	61	60	61	61	17	16	16	16	16	16	16	
	3	555	0	493	0	493	61	60	60	60	60	60	60	16	16	16	16	16	16	16	
	4	395	0	305	0	305	60	59	59	59	59	59	59	16	15	15	15	15	15	15	
	5	560	1185	1650	250	1900	59	58	58	58	58	58	59	15	14	14	14	14	14	15	
	6	560	1185	1650	250	1900	58	57	57	57	57	58	58	14	14	14	14	14	14	14	
	7	560	1185	1650	250	1900	**38**	57	56	57	57	57	57	**3**	14	13	14	14	14	14	
	8	560	1185	1650	240	1890	**41**	56	56	57	56	57	57	**5**	13	13	14	13	14	14	
	9	560	1185	1650	240	1890	**43**	57	57	57	57	57	57	**6**	14	14	14	14	14	14	
	10	560	1185	1650	230	1880	**56**	57	57	57	57	57	57	**13**	14	14	14	14	14	14	
	11	560	1185	1650	240	1890	**42**	57	57	57	57	57	57	**6**	14	14	14	14	14	14	
	12	560	1185	1650	250	1900	**52**	57	56	57	57	57	57	**11**	14	13	14	14	14	14	
	13	560	1185	1650	870	2520	**48**	56	56	57	56	57	57	**9**	13	13	14	13	14	14	
	14	560	1185	1650	850	2500	**43**	55	55	56	55	56	56	**6**	13	13	13	13	13	13	
	15	560	1185	1650	850	2500	**41**	55	54	55	55	55	55	**5**	13	12	13	13	13	13	
	16	560	1185	1670	0	1670	**37**	54	54	54	54	54	55	**3**	12	12	12	12	12	13	
	17	505	1035	1420	0	1420	**36**	53	53	54	53	54	54	**2**	12	12	12	12	12	12	
	18	505	1035	1420	0	1420	**40**	53	53	53	53	53	54	**4**	12	12	12	12	12	12	
	19	505	1035	1420	0	1420	**37**	53	53	53	53	53	54	**3**	12	12	12	12	12	12	
	20	505	1035	1420	0	1420	**29**	52	51	52	52	52	53	**-2**	11	11	11	11	11	12	
	21	505	1035	1420	0	1420	**34**	51	51	51	51	52	52	**1**	11	11	11	11	11	11	
	22	505	1035	1420	0	1420	**47**	51	51	52	51	52	52	**8**	11	11	11	11	11	11	
	23	505	1035	1410	0	1410	**33**	**36**	50	50	50	50	51	**1**	**2**	10	10	10	10	11	
	24	505	1035	1410	0	1410	**26**	**28**	49	50	49	50	51	**-3**	**-2**	9	10	9	10	11	
	25	505	1035	1410	0	1410	**35**	**35**	48	49	49	49	50	**2**	**2**	9	9	9	9	10	
	26	505	1035	1410	0	1410	**40**	**39**	49	49	49	49	50	**4**	**4**	9	9	9	9	10	
	27	505	1035	1410	0	1410	**32**	**31**	47	48	48	48	49	**0**	**-1**	8	9	9	9	9	
	28	505	1035	1410	0	1410	**35**	**34**	47	48	48	48	49	**2**	**1**	8	9	9	9	9	
	29	505	1035	1410	0	1410	**36**	**35**	47	48	48	48	49	**2**	**2**	8	9	9	9	9	
	30	505	1035	1400	0	1400	**35**	**34**	47	47	47	47	48	**2**	**1**	8	8	8	8	9	Position 7

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

MONTHLY TEMPERATURE AND FLOW REPORT

Raystown Hydroelectric Project - FERC Project 2769PA

Allegheny Electric Cooperative, Inc.

TABLE #12 DECEMBER 2021

Date		<-------- Hydro Project ----------> U1 Flow cfs	U2 Flow cfs	AECTotal Flow	COE Flow cfs	TOTAL FLOW CFS	<---------- Temperature in Degrees F ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	<---------- Temperature in Degrees C ------ -------> Ts 785	780	775	770	765	760	Tr Tailrace	Temperature Gate Position
DEC	1	0	625	479	0	479	**41**	**40**	46	47	47	47	48	**5**	**4**	8	8	8	8	9	Position 7
	2	0	625	479	0	479	**43**	**42**	46	47	47	47	48	**6**	**6**	8	8	8	8	9	
	3	0	625	479	0	479	**42**	**40**	46	46	46	46	48	**6**	**4**	8	8	8	8	9	
	4	0	625	479	0	479	**40**	**38**	46	47	46	47	48	**4**	**3**	8	8	8	8	9	
	5	0	625	479	0	479	**35**	**33**	46	46	46	46	47	**2**	**1**	8	8	8	8	8	
	6	0	625	479	0	479	**47**	**45**	46	46	46	46	47	**8**	**7**	8	8	8	8	8	
	7	0	625	479	0	479	**32**	**30**	45	46	45	46	47	**0**	**-1**	7	8	7	8	8	
	8	0	625	475	0	475	**34**	**32**	45	46	45	46	47	**1**	**0**	7	8	7	8	8	
	9	0	625	475	0	475	**28**	**26**	44	45	44	45	46	**-2**	**-3**	7	7	7	7	8	
	10	0	635	484	0	484	**39**	**38**	44	45	45	45	46	**4**	**3**	7	7	7	7	8	
	11	0	635	484	0	484	**45**	**43**	44	45	45	45	46	**7**	**6**	7	7	7	7	8	
	12	0	635	484	0	484	**37**	**35**	44	44	44	44	46	**3**	**2**	7	7	7	7	8	
	13	0	635	484	0	484	**32**	**30**	44	44	44	44	46	**0**	**-1**	7	7	7	7	8	
	14	0	635	484	0	484	**35**	**33**	44	44	44	44	45	**2**	**1**	7	7	7	7	7	
	15	0	635	479	0	479	**31**	**29**	43	44	43	44	45	**-1**	**-2**	6	7	6	7	7	
	16	0	635	479	0	479	**43**	**41**	44	44	44	44	45	**6**	**5**	7	7	7	7	7	
	17	0	635	479	0	479	**48**	**46**	44	45	44	44	46	**9**	**8**	7	7	7	7	8	
	18	0	635	479	0	479	**40**	**38**	44	45	44	44	45	**4**	**3**	7	7	7	7	7	
	19	0	635	479	0	479	**37**	**35**	43	44	44	44	45	**3**	**2**	6	7	7	7	7	
	20	0	635	479	0	479	**23**	**21**	42	43	43	43	45	**-5**	**-6**	6	6	6	6	7	
	21	0	635	479	0	479	**25**	**23**	42	43	43	43	45	**-4**	**-5**	6	6	6	6	7	
	22	0	635	479	0	479	**26**	**27**	42	42	42	42	43	**-3**	**-3**	6	6	6	6	6	
	23	0	635	484	0	484	**29**	**28**	41	42	42	42	44	**-2**	**-2**	5	6	6	6	7	
	24	0	635	484	0	484	**33**	**32**	41	42	42	42	44	**1**	**0**	5	6	6	6	7	
	25	0	635	489	0	489	**40**	**39**	42	42	42	42	44	**4**	**4**	6	6	6	6	7	
	26	0	635	489	0	489	**38**	**35**	41	42	42	42	44	**3**	**2**	5	6	6	6	7	
	27	0	635	484	0	484	**33**	**31**	41	42	41	42	43	**1**	**-1**	5	6	5	6	6	
	28	0	635	484	0	484	**33**	**31**	41	41	41	41	43	**1**	**-1**	5	5	5	5	6	
	29	0	635	493	0	493	**38**	**36**	41	42	42	42	43	**3**	**2**	5	6	6	6	6	
	30	560	1185	1650	0	1650	**42**	**42**	42	43	42	42	43	**6**	**6**	6	6	6	6	6	
	31	560	1185	1650	0	1650	**43**	**41**	42	43	42	42	43	**6**	**5**	6	6	6	6	6	Position 7

(1) Generally, temperatures and flows are recorded between 0700 and 0900 daily.

(2) Temperature Gate Positions

Position 1 - 6' Opening 780'-786'
Position 2 - 12' Opening 774'-786'
Position 3 - 12' Opening 768'-780'
Position 4 - 6' Opening 768'-774'
Position 5 - 12' Opening 760'-772'
Position 6 - 6' Opening 760'-766'
Position 7 - 26' Opening 760'-786'

(3) **Bold numbers** indicates lake level is **below** the temperature probe.

(4) COE implemented new Downstream USGS flow criteria, May 18, 2004.

(5) No readings due to maintenance on equipment.

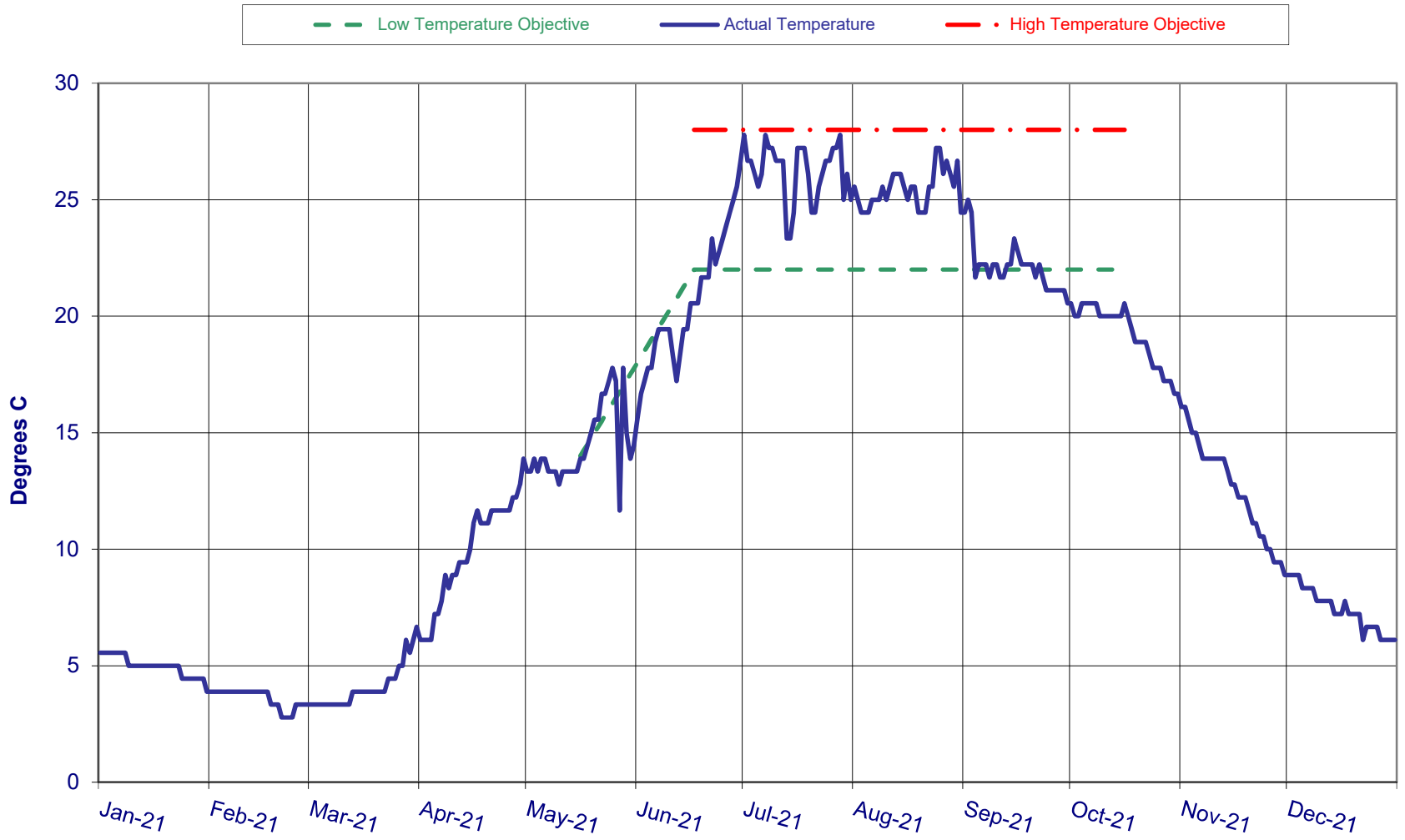
(6) AEC's maximum discharge changed from 1750 to 1650 cfs due to new USGS Downstream flow charts. 01-Apr-18

Figure: 1

RELEASE TEMPERATURE OBJECTIVE - 2021

Allegheny Electric Cooperative, Inc.

Raystown Hydroelectric Project - FERC 2769-PA



27 FERC P 62308 (F.E.R.C.), 1984 WL 57289
**1 Office Director Orders

Allegheny Electric Cooperative, Inc. and the Pennsylvania Electric Company
Allegheny Electric Cooperative, Inc.

Project No. 2769-004
Project No. 2769-005
Order Approving Transfer of License and Amending License
(Issued June 19, 1984)

*63565 Lawrence R. Anderson, Director, Office of Electric Power Regulation.

On January 26, 1984, Allegheny Electric Cooperative, Inc. (Allegheny/Transferee) and the Pennsylvania Electric Company (Penelec), Licensees for the Raystown Project No. 2769 filed an application for transfer of their license to Allegheny and for amendment of Articles 34 and 36 of the license. [1] [2] The project would be located on the Juniata River in Huntingdon County, Pennsylvania.

Allegheny is an Electric Cooperative Corporation organized under the laws of the Commonwealth of Pennsylvania and is currently a co-licensee with Penelec for Project No. 2769. The Transferee submits that it will comply with all applicable laws of the Commonwealth of Pennsylvania as required by Section 9(b) of the Federal Power Act (Act). The transfer is requested because Penelec has determined that its share of the output of power from the project is not needed. The Raystown Project has not commenced construction. Unilateral development by the Transferee will have a mitigative impact on the long-term rate structure of the Transferee, as all project output will be available to offset more expensive wholesale power purchases.

Allegheny and Penelec certify that they have fully complied with the terms of the license and obligate themselves to pay annual charges accrued to the date of transfer. Transferee agrees to accept all of the terms and conditions of the license and to be bound by it as if it were the original Licensee. The application sets forth the qualifications of the Transferee to hold the license and to operate the property under license.

Public notice of the application for transfer was given with April 27, 1984, as the last date to file comments, protests and motions to intervene. None were received.

Due to the delays caused by the divestiture negotiations and the proceeding of the transfer of interests from the Licensees to the Transferee, and the transfer of the license itself, the Transferee requests that License Articles 34 and 36 be amended. Article 34 requires Licensees to file for Commission approval, within 18 months after the issuance date of the license, revised Exhibit F drawings showing the location, geometry and final design of the intake structure. The design must be based on a mathematical model developed, in consultation with the appropriate Federal and State agencies, to ensure proper temperature regulation and dissolved nitrogen levels of water released downstream for fishery protection. Transferee requests that Article 34 be amended to require it to file the revised Exhibit F drawings within 30 months after the date of issuance of the license. Article 36 requires the Licensees to commence construction of the project within 2 years of the date of issuance of the license and to complete construction within 3 years from the start of construction. Transferee requests that Article 36 be amended to require commencement of construction within 4 years from the date of issuance of the license. Staff has reviewed the request and the reasons for amending Articles 34 and 36 are reasonable and the amendment will be approved granting the requested extensions of time.

**2 The Transferee has been diligent in unilaterally complying with the terms and conditions of the license. Transferee has met with the Corps of Engineers to discuss model requirements of Article 34 and to negotiate Memoranda of Understanding pursuant to Articles 41 and 44, has pursued project financing with the Rural Electrification Administration, has started the preliminary

design process, has selected a Board of Consultants per Article 45, and has consulted with the SHPO per Article 33. Transferee ***63566** states that it will diligently prosecute, and commence and complete construction within the requested extension.

Approval of the transfer of license and amendment of Articles 34 and 36 is an administrative action involving no proposed modifications of the project or its operation and is in the public interest. For this reason, approval of the transfer of license and the amendment of Articles 34 and 36 would not constitute a major Federal action significantly affecting the quality of the human environment.

The Transferee is put on notice that Section 13 of the Federal Power Act states that the period for commencement of construction may be extended once for no longer than two additional years, and thus no further extensions will be permitted.

It is ordered that:

(A) Transfer of the major license for the Raystown Project No. 2769 described in the application for transfer filed January 26, 1984, is hereby approved effective as of the first day of the month in which this order is issued, subject to the provisions of Section 9.3 of the Commission's regulations under the Federal Power Act. [3]

(B) Approval of the transfer of license is contingent upon transfer of title to the properties under license and the delivery of all license instruments to the Allegheny Electric Cooperative, Inc., which shall be subject to all the conditions of the Federal Power Act, as though it were the original Licensee. Allegheny Electric Cooperative, Inc. and the Pennsylvania Electric Company are responsible for the payment of annual charges that accrue prior to the date of transfer. The Allegheny Electric Cooperative, Inc. shall submit certified copies of all instruments of conveyance within 60 days from the date of issuance of this order.

(C) Article 34 of the license is amended to read:

Article 34. Licensee shall, within 30 months after the date of issuance of this license, file for Commission approval, revised Exhibit F drawings showing the location, geometry and final design of the intake structure. This design shall be based on a mathematical model, shall be developed in consultation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and the Pennsylvania Fish Commission, and shall ensure proper temperature regulation and dissolved nitrogen levels of water released downstream for fishery protection.

(D) Article 36 of the license is amended to read:

Article 36. The Licensee shall commence construction of the proposed project within 4 years from the date of issuance of the license and shall complete construction within 7 years from the date of issuance of the license.

Federal Energy Regulatory Commission

Footnotes

1 Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations, 18 C.F.R. §375.308 (1983). This order may be appealed to the Commission by any party within 30 days of its issuance pursuant to Rule 1902, 18 C.F.R. § 385.1902 (1983). Filing an appeal and final Commission action on that appeal are prerequisites for filing an application for rehearing as provided in Section 313(a) of the Act.

Filing an appeal does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically directed by the Commission.

2 The license for Project No. 2769 was issued on November 10, 1982, 21 FERC P 62,239.

3 ****3** 18 C.F.R. §9.3 (1981).

27 FERC P 62308 (F.E.R.C.), 1984 WL 57289

36 FERC P 62176 (F.E.R.C.), 1986 WL 78324

****1** Office Director Orders

Allegheny Electric Cooperative, Inc.

Project No. 2769-008
Order Approving Revised Exhibit F Drawings
(Issued August 11, 1986)

***63364** Richard T. Hunt, Director, Office of Hydropower Licensing.

On December 3, 1985, the Allegheny Electric Cooperative, Inc. (licensee) filed revised Exhibit F drawings of the project intake structure for the Raystown Project, as required by article 34 of the license. The intake structure was to be designed in a manner that would ensure proper temperature regulation of and appropriate dissolved nitrogen levels in the water released downstream for protection of the fishery indigenous to the Raystown Branch.

The U.S. Department of the Army, Corps of Engineers (Corps) states, in a letter dated April 28, 1986, that the existing outlet works have been operated in a manner that ensures that releases from the Raystown Reservoir approximates preimpoundment water temperatures as requested by the Pennsylvania Fish Commission (PFC). Available data indicate, however, that because of the physical constraints of the outlet works, the release temperatures are less than preimpoundment water temperatures during the spring season.

The Corps states that the proposed intake structure may not access the reserve of coldwater in the lower portions of the reservoir during the latter part of the summer and fall and, because the resulting release temperatures would be higher than preimpoundment temperatures, the licensee would be required to cease project operation and release water through the existing outlet works. The U.S. Fish and Wildlife Service, in a letter dated November 20, 1985, states that the proposed intake structure would meet target temperatures during the spring and summer months. The PFC states, in a letter dated June 16, 1986, that the proposed intake structure would withdraw water from a higher elevation than the existing outlet works thereby providing releases in the spring that more closely approximates preimpoundment temperatures. The PFC also states that with this ability to release water at warmer temperatures in the spring and the beneficial effect these warmer water temperatures would have on fish spawning, there could be some divergence in the preimpoundment temperature requirements during the fall without harming the fishery downstream of the dam.

The licensee, by letter dated April 10, 1986, objects to the Corps requirement that releases be directed through the existing outlet structure when releases from the project powerhouse do not meet the target temperature. The licensee contends that the ***63365** intake structure would enhance the ability of releases from the impoundment to meet preimpoundment levels during the spring because the proposed intake structure would withdraw water from higher elevations than the existing outlet and provide for the release of warmer water. In addition, the intake structure, according to the licensee would provide adequate temperature control during the remainder of the year to protect the fish resources of the Raystown Branch.

****2** The proposed intake structure would withdraw water nearer the surface of the reservoir during the spring, which would increase the temperature of the releases from the reservoir above preproject levels. The increased water temperature in the spring would more closely approximate the preimpoundment water temperatures and would provide temperatures more suitable for fish spawning. The structure would not, however, access the reserve of coldwater that exists within the reservoir during the latter part of the summer and fall and, as a result, the water temperature of the releases would exceed preimpoundment levels during these times of the year. Available data indicates that the temperature of the releases during this period would range from 18 to 22 degrees Celsius which would protect smallmouth bass. The PFC, in a letter dated May 5, 1986, states that smallmouth bass are the main game fish in the Raystown Branch.

In conclusion, the proposed intake structure should provide for the maintenance of water temperatures at levels that would protect the fish resources of the Raystown Branch. In addition, the intake structure would withdraw water from sufficient depth to minimize air entrainment and, as a result, ensure maintenance of the dissolved nitrogen levels of the powerhouse discharge at levels that would protect fish resources. To ensure that operation of the intake maintains the water temperature of the powerhouse releases at levels that would protect these resources, the licensee should, in cooperation with the appropriate resources agencies develop a water temperature monitoring plan.

Adverse environmental impacts associated with construction of the intake structure are expected to be minor and of short duration.

The Director orders:

(A) The revised exhibit F drawings of the intake structure filed on December 3, 1985, are approved.

(B) The licensee, in cooperation with the Pennsylvania Fish Commission, U.S. Fish and Wildlife Service, and U.S. Department of the Army, Corps of Engineer, shall develop a water temperature monitoring plan to evaluate the effectiveness of the intake structure for the Raystown Project in ensuring that the release water temperatures are maintained at levels that would protect the fish resources of the Raystown Branch. The plan shall be filed with the Commission, for approval, within 1 year from the date of issuance of this order along with comments from the aforementioned agencies on the plan. The plan shall include a schedule for filing the results of the monitoring and, if necessary, any recommendations for changes in project operation or facilities necessary to ensure maintenance of the temperatures of the powerhouse discharge within limits necessary to protect fish resources. The Commission reserves the right to require modifications to the plan.

(C) This order is issued under authority delegated to the Director and is final unless appealed to the Commission under Rule 1902 within 30 days from the date of this order.

Federal Energy Regulatory Commission
36 FERC P 62176 (F.E.R.C.), 1986 WL 78324

41 FERC P 62311 (F.E.R.C.), 1987 WL 118875
***1** Office Director Orders

Allegheny Electric Cooperative, Inc.

Project No. 2769-010
Order Modifying in Part and Approving in Part Water Temperature Monitoring Plan
(Issued December 29, 1987)

Fred E. Springer, Acting Director, Office of Hydropower Licensing.

On August 3, 1987, Allegheny Electric Cooperative, Inc. (licensee) filed a water temperature monitoring plan for the Raystown Hydroelectric Project pursuant to paragraph B of the Order Approving Revised Exhibit F Drawings issued on August 11, 1986. The licensee amended the plan by letter dated September 9, 1987. In general, the order required the licensee to develop a water temperature monitoring plan in cooperation with the Pennsylvania Fish Commission (PFC), the Fish and Wildlife Service (FWS), and the U.S. Department of the Army, Corps of Engineers (COE) to evaluate the effectiveness of the project intake structure in maintaining discharge water temperatures at levels that would protect the fish resources of the Raystown Branch.

The proposed plan would provide for monitoring water temperatures in the powerhouse discharge and in the reservoir at five foot increments down to twenty-five feet below the surface. The plan includes a schedule for filing the results of the licensee's monitoring and any recommendations for changes in project operations or facilities necessary to maintain the temperature of the river at levels that would protect fish resources. The licensee proposes to compile water temperature data for the calendar years, 1988 and 1989, and file annual reports by March 31, 1989, and March 31, 1990, with the Commission. The report would include an analysis of the effectiveness of the operation of the intake structure in maintaining the water temperature of the powerhouse discharge at levels that would protect fish resources.

According to the plan, temperature regulation of the project discharge would begin in the spring when thermal stratification in the reservoir starts to occur. The licensee would attempt to obtain a water temperature of 16 degrees Celsius in the project discharge by May 1, or as soon as possible thereafter. The licensee would then gradually increase the temperature of the discharge to 24 degrees Celsius by mid-June, and maintain the temperature between 24 and 28 degrees Celsius as late into the fall as possible. This temperature regime would protect growth and reproduction of smallmouth bass.

In developing the plan, the licensee consulted with PFC, FWS, and COE. FWS and PFC concurred with the plan by letters dated August 12, 1987, and September 18, 1987, respectively. In a letter dated August 26, 1987, the COE made recommendations regarding thermal sensors in the reservoir, transmitting data to an existing data collection platform operated by COE, and the threshold level for temperature management. By filing dated September 9, 1987, the licensee amended the plan to incorporate all of the recommendations made by COE except for transmitting data to the existing data collection platform.

The plan makes provisions to supply the temperature data to the hydropower operator's office located at the dam. These data would provide the operator with the necessary information to determine when adjustment in the intake gate setting is necessary. The operator could then make the appropriate adjustment to ensure that the water temperature of the project discharge is maintained at proper levels. Providing continuous data to COE's data collection platform would not be necessary. COE would have the opportunity to comment on the effectiveness of the intake structure in maintaining appropriate discharge water temperatures and to make recommendations for changes in operation of the intake structure that would ensure protection of smallmouth bass in Raystown Branch below the project discharge.

***2** To assist the Commission's staff in evaluating the effectiveness of the intake structure in maintaining water temperatures that protect fish resources in Raystown Branch, the licensee should include in their annual reports comments from the aforementioned agencies on the effectiveness of the structure in maintaining appropriate water temperature. In addition, the

licensee should include any agency recommendations for changes in operation of the intake structure necessary to maintain the temperature of the powerhouse discharge at appropriate levels.

The water temperature monitoring plan would provide sufficient data to enable the Commission to evaluate the effectiveness of the project intake structure in maintaining discharge temperatures at levels that would protect the fish resources of the Raystown Branch. Modification of the plan, as identified above, would assist the Commission in determining changes in project operations or facilities that would be necessary to maintain the water temperature of the powerhouse discharge at these levels.

The Director orders:

(A) The water temperature monitoring plan filed on August 3, 1987, and amended on September 9, 1987, with the modification required by paragraph B, is approved.

(B) The licensee must include in their annual report comments from the U.S. Department of the Army, Corps of Engineers, the Fish and Wildlife Service, and the Pennsylvania Fish Commission on the effectiveness of the intake structure in maintaining the water temperature of the powerhouse discharge at levels that protect fish resources. The report must also include any agency recommendations for changes in project operations or facilities necessary to maintain the water temperature of the powerhouse discharge at these levels. In the event that any agency fails to provide comments, the licensee must provide copies of letters requesting agency comments dated no later than 30 days before the reports are filed with the Commission. The Commission reserves the right to require changes in project operations or facilities.

(C) This order is issued under the authority delegated to the Director and is final unless appealed to the Commission under Rule 1902 within 30 days from the date of this order.

41 FERC P 62311 (F.E.R.C.), 1987 WL 118875

Allegheny
ELECTRIC COOPERATIVE, INC.

212 LOCUST ST. P.O. BOX 1266 • HARRISBURG, PENNSYLVANIA 17108-1266 • PHONE 717 233-5704

March 15, 1989

Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
Room 9310
825 North Capitol Street, N. E.
Washington, D. C. 20426

RE: FERC Project No. 2769-PA
Raystown Hydroelectric Project
William F. Matson Generating Station
Article 35 - As-Built Recreational Facilities

Dear Secretary:

Pursuant to Article 35 of the above-referenced FERC license, Allegheny Electric Cooperative hereby submits as-built drawings that show the type and location of recreational facilities provided at the project. These facilities were developed in consultation with the U. S. Army Corps of Engineers and are consistent with those proposed in Exhibit E, Report on Recreational Resources and as delineated on Figure 5-3 of Exhibit 3 of the license application. The principal components are shown on the attached sheet and Exhibit F sheet 1 of 5, and Exhibit G sheet 4 of 4 have been annotated for Article 35.

If you or your staff require additional information, please do not hesitate to contact me.

Very truly yours,

Mary Ann Hosko, P.E.
Project Manager
Hydroelectric Projects

MAH:ceb

Enclosures: Recreational Facilities Components
Exhibit F, Sheet 1 of 5 (annotated for Article 35)
Exhibit G, Sheet 4 of 4 (annotated for Article 35)

cc: Distribution List

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Raystown Hydroelectric Project
William F. Matson Generating Station

FERC PROJECT NO. 2769-PA

ARTICLE 35 - RECREATIONAL FACILITIES

1982 FERC License Application Recreational Facilities Proposed:

The following were the proposed recreational facilities delineated in Exhibit E, Section 5 Report on Recreational Resources and depicted on Figure 5-3, Recreational Development Concepts, by the Licensee:

(1) Provide public access and use adjacent to the Corps existing observation center (pagoda) with a display describing the hydroelectric project and its relationship to the Raystown Lake at the intake structure.

(2) Grade and landscape spoil disposal area.

(3) Provide a parking area.

(4) Provide pathways for ready access by public.

(5) Provide a fishing platform in the tailrace area.

(6) Provide a structure for interpretative display of project features in the tailrace area.

1988 Recreational Facilities Developed at FERC Project No. 2769

In addition, at the request of the Pennsylvania Fish Commission, U. S. Fish and Wildlife Service, and the U. S. Army Corps of Engineers, a gravel path (7) was provided on the exterior of the fence behind the powerhouse to provide fishermen access to the right-hand side of the tailrace on the center spit of land between the tailrace and the existing gated spillway discharge channel.

The following elements were provided by the Licensee at the project site and are depicted on the attached sheets, Exhibit F Sheet 1 of 5 and Exhibit G Sheet 4 of 5 both annotated for this Article 35 filing. All of these features were coordinated with the Baltimore District Corps of Engineers prior to implementation.

(1) At the intake structure adjacent to the COE observation pagoda, a three-sided and interpretative display structure was provided with panels describing hydroelectric generation and its relationship to the Raystown Lake. The structure, text and graphic displays for this panel were reviewed with the Baltimore District Corps of Engineers and with the Baltimore District Park Manager.

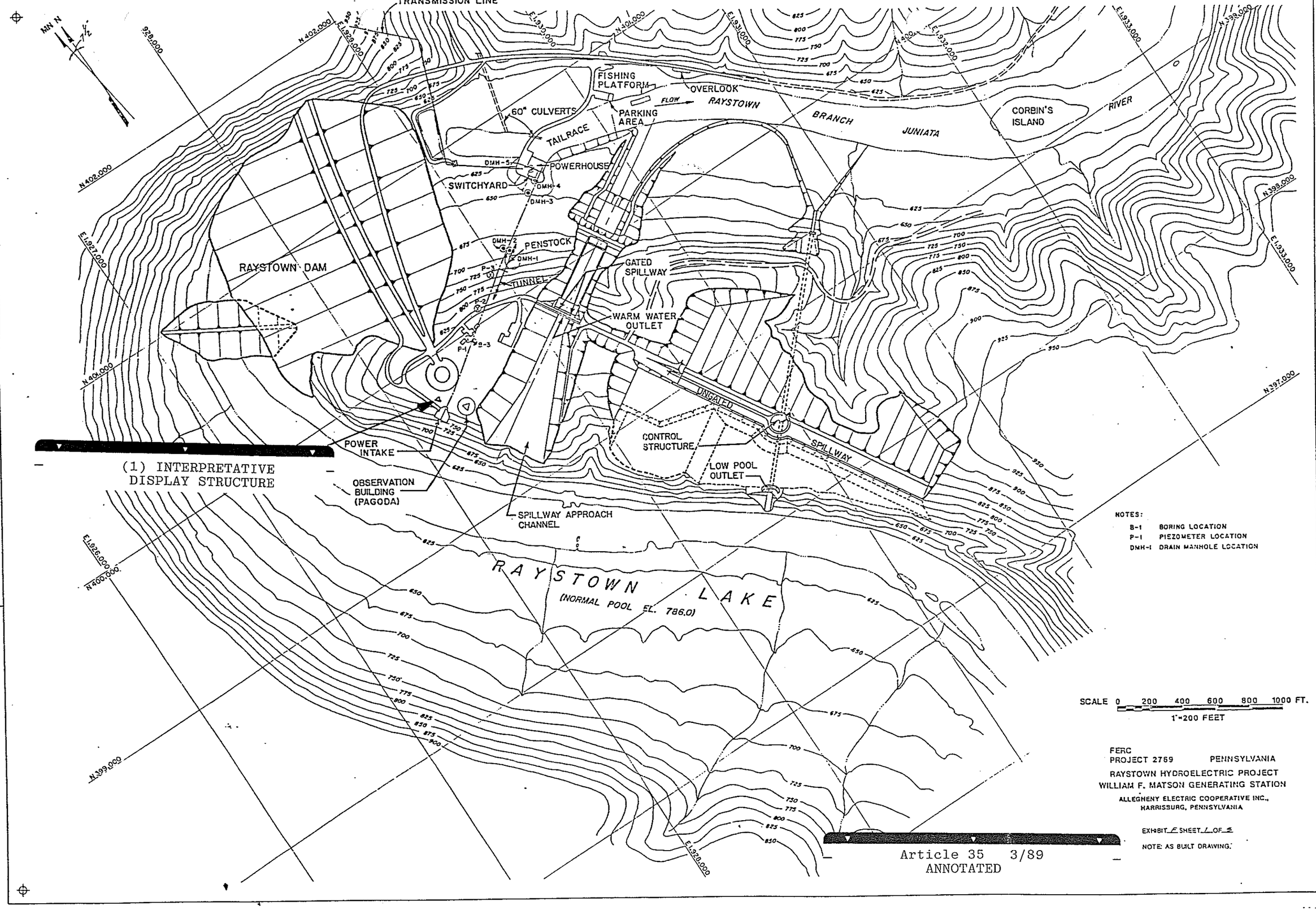
(2) The spoil disposal area was graded and landscaped in the Spring of 1988, including the planting of approximately 65 deciduous and 25 evergreen trees, as well as 975 barberry shrubs on the slopes. In addition, spoil areas were seeded with grass and slopes were seeded with crown vetch.

(3) A parking lot was provided for 8 cars, including handicapped designated spaces and two trash receptacles.

(4) A paved path to the fishing platform was provided with slope to accomodate wheelchairs.

(5) A paved fishing platform with guard rails was constructed approximately 100 feet long in the tailrace area.

(6) A three-sided interpretative display structure of project features, similar to that at the intake was provided at the entrance to the parking area.



(1) INTERPRETATIVE DISPLAY STRUCTURE

NOTES:

B-1 BORING LOCATION
P-1 PIEZOMETER LOCATION
DMH-1 DRAIN MANHOLE LOCATION

SCALE 0 200 400 600 800 1000 FT.
1"=200 FEET

FERC
PROJECT 2769 PENNSYLVANIA
RAYSTOWN HYDROELECTRIC PROJECT
WILLIAM F. MATSON GENERATING STATION
ALLEGHENY ELECTRIC COOPERATIVE INC.,
HARRISBURG, PENNSYLVANIA

EXHIBIT F SHEET 1 OF 2

NOTE: AS BUILT DRAWING.

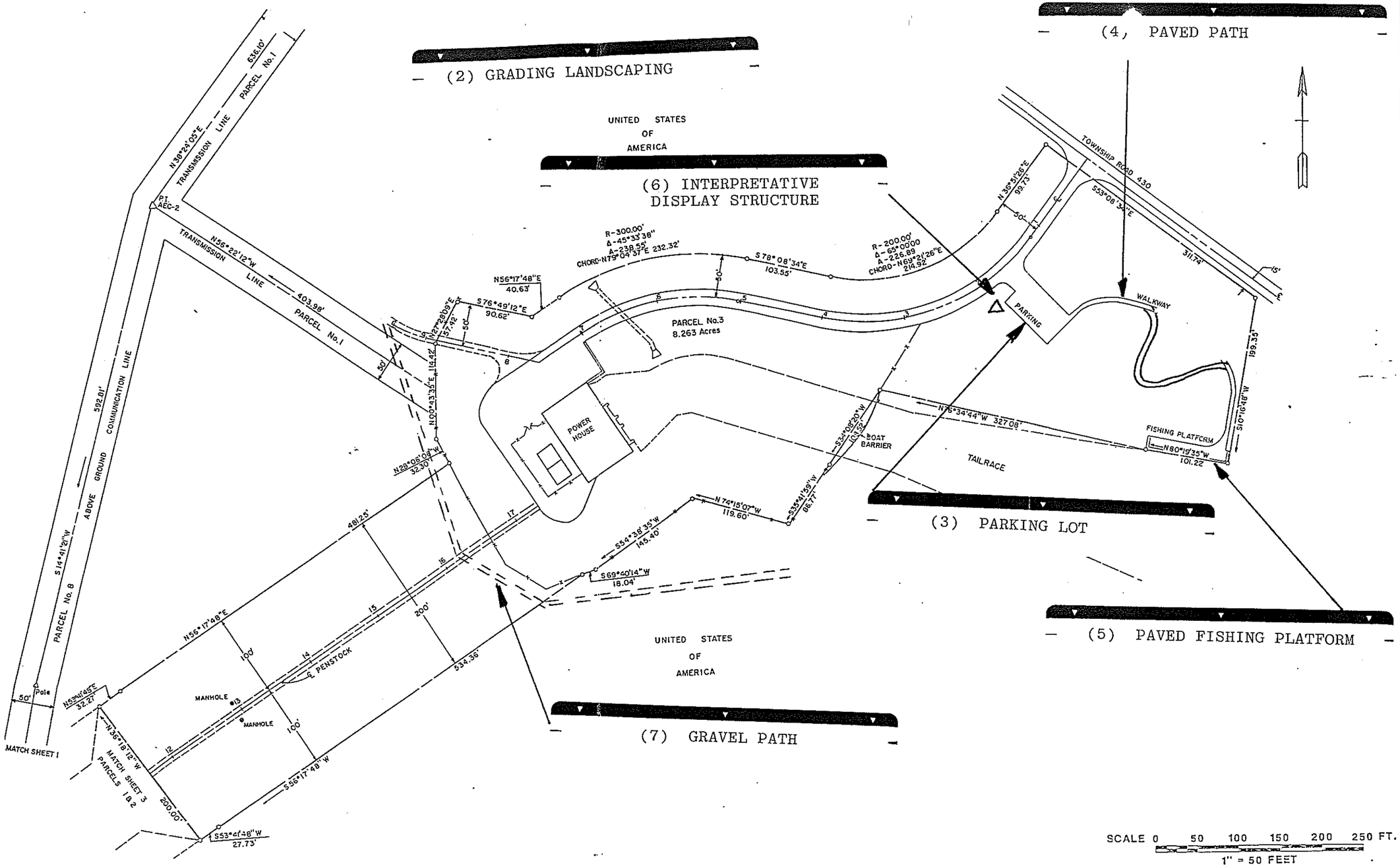
Article 35 3/89
ANNOTATED

(2) GRADING LANDSCAPING

(4, PAVED PATH

UNITED STATES OF AMERICA

(6) INTERPRETATIVE DISPLAY STRUCTURE



(3) PARKING LOT

UNITED STATES OF AMERICA

(5) PAVED FISHING PLATFORM

(7) GRAVEL PATH

SCALE 0 50 100 150 200 250 FT.

1" = 50 FEET

FERC
PROJECT 2769 PENNSYLVANIA

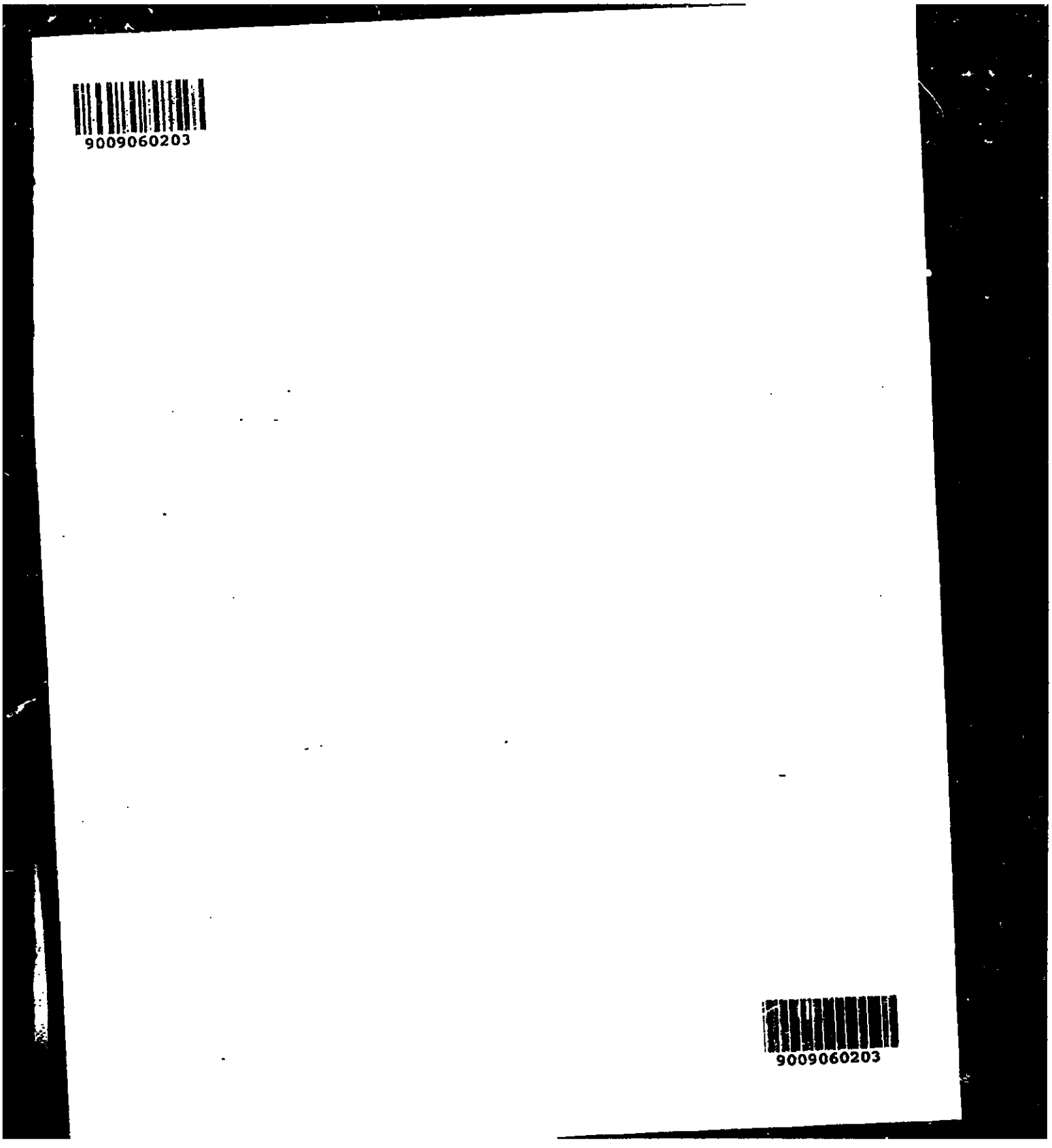
RAYSTOWN HYDROELECTRIC PROJECT
WILLIAM F. MATSON GENERATING STATION

ALLEGHENY ELECTRIC COOPERATIVE, INC.,
HARRISBURG, PENNSYLVANIA

Article 35 3/89
ANNOTATED

EXHIBIT G SHEET 4 OF 4

NOTE: AS BUILT DRAWING



FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D. C. 20426

AUG 31 1990

Project No. 2769-026--Pennsylvania
Raystown Hydroelectric Project
Allegheny Electric Cooperative, Inc.

A.C. Adonizio, Jr.
Project Manager
212 Locust Street
P.O. Box 1266
Harrisburg, PA 17108-1266

Dear Mr. Adonizio:

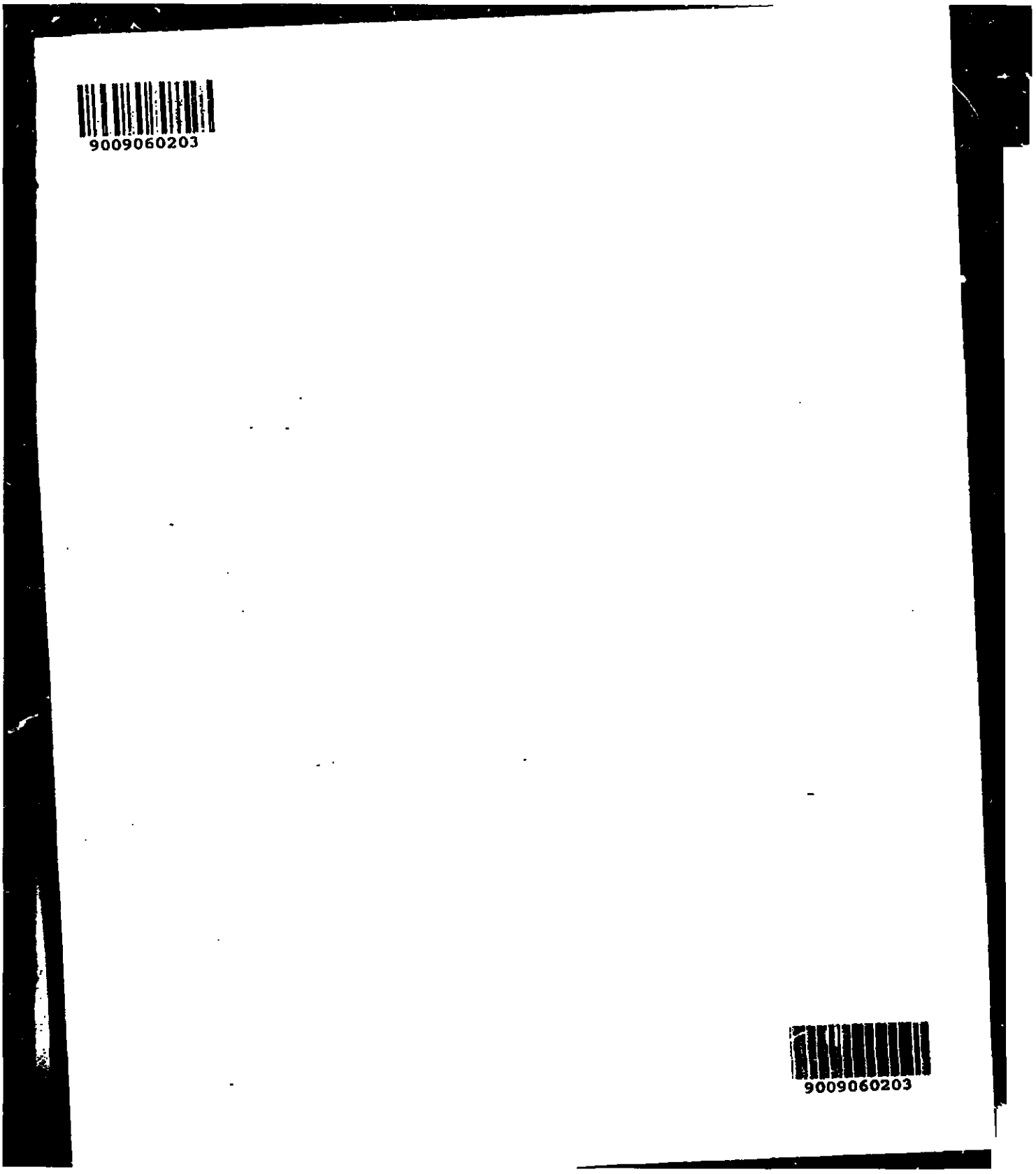
On March 20, 1989, you filed as-built drawings of recreational facilities provided at the project. The as-built drawings fulfill the requirements of license article 35.

Sincerely,

J. Mark Robinson
Director, Division of Project
Compliance and Administration

9009060203

D



FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D. C. 20426

AUG 31 1990

Project No. 2769-026--Pennsylvania
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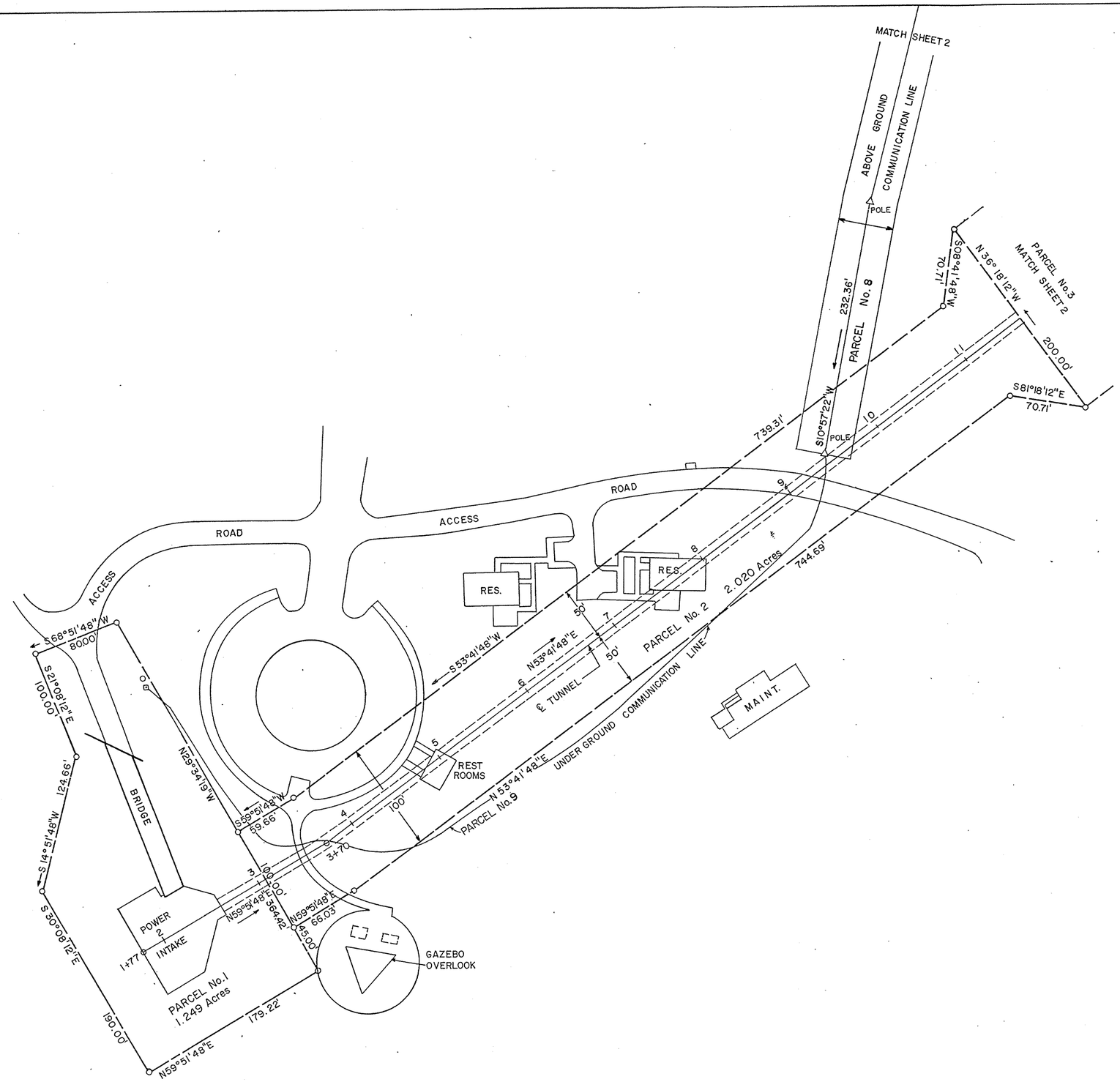
D

Document Accession #: 19900906-0203 **Filed Date: 08/31/1990**

Document Content(s)



THE UNDRESIGNED HEREBY CERTIFIES TO:

ALLEGHENY ELECTRIC COOPERATIVE, INC.
FORD MOTOR CREDIT COMPANY, CONNECTICUT BANK & TRUST COMPANY, NATIONAL ASSOCIATION, BALTIMORE BANK FOR COOPERATIVES, AND MERIDIAN TRUST COMPANY

THAT I HAVE SUPERVISED THE SURVEY AND THE PREPARATION OF THIS PLAN, AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

FORREST J. JONES
P.L.S. NO. 30164-E

BAR SCALE
50 0 50 100 150
SCALE: 1"= 50'

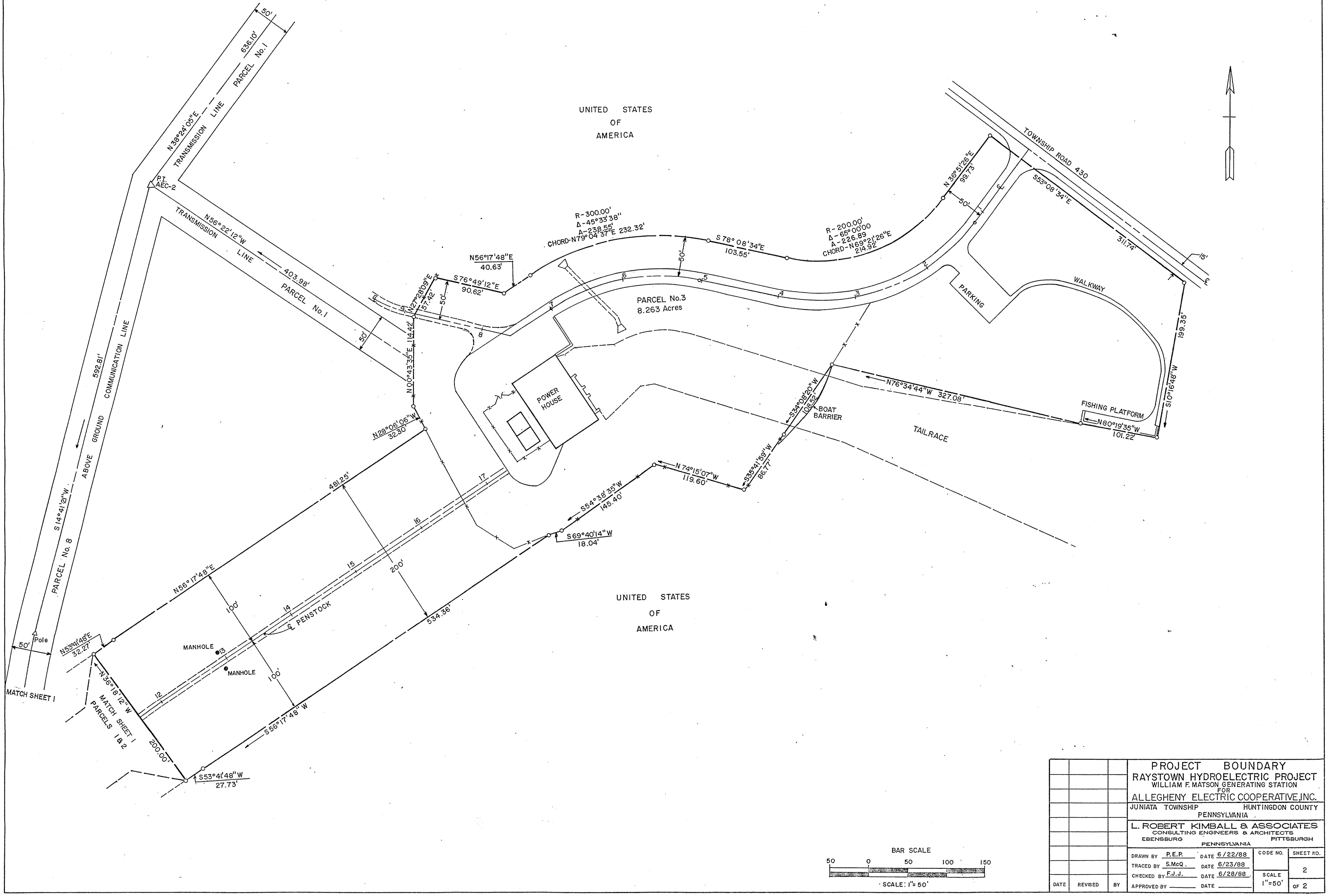
DATE	REVISED	BY

PROJECT BOUNDARY
RAYSTOWN HYDROELECTRIC PROJECT
WILLIAM F. MATSON GENERATING STATION
FOR
ALLEGHENY ELECTRIC COOPERATIVE, INC.

JUNIATA TOWNSHIP HUNTINGDON COUNTY
PENNSYLVANIA

L. ROBERT KIMBALL & ASSOCIATES
CONSULTING ENGINEERS & ARCHITECTS
EBENSBURG PENNSYLVANIA PITTSBURGH

DRAWN BY P.E.P	DATE 6/22/88	CODE NO.	SHEET NO.	
TRACED BY S.McQ.	DATE 6/23/88		1	
CHECKED BY F.J.J.	DATE 6/28/88	SCALE 1"=50'	OF 2	
APPROVED BY	DATE			


UNITED STATES
OF
AMERICA
50'
636.10'
N 38°24'05"E
TRANSMISSION LINE
PARCEL No. 1
P.I.
AEC-2
N56°22'12"W
TRANSMISSION LINE
403.98'
PARCEL No. 1
50'
592.81'
S 14°41'21"W
ABOVE GROUND COMMUNICATION LINE
PARCEL No. 8
Pole
50'
MATCH SHEET 1
R-300.00'
Δ-45°33'38"
A-238.55'
CHORD-N79°04'37"E 232.32'
S 78°08'34"E
103.55'
R-200.00'
Δ-65°00'00
A-226.89
CHORD-N69°21'26"E
214.92'
N 36°51'26"E
99.73'
50'
TOWNSHIP ROAD 430
S53°08'34"E
311.74'
15'
N56°17'48"E
40.63'
S 76°49'12"E
90.62'
N27°28'09"E
57.42'
50'
N00°43'35"E 114.42'
PARCEL No.3
8.263 Acres
PARKING
WALKWAY
199.35'
S10°16'48"W
POWER HOUSE
N28°06'06"W
32.30'
N76°34'44"W 327.08'
S34°08'20"W
108.52'
BOAT BARRIER
FISHING PLATFORM
N80°19'35"W
101.22'
TAILRACE
S35°41'59"W
86.77'
N 74°15'07"W
119.60'
S54°38'35"W
145.40'
S69°40'14"W
18.04'
481.25'
200'
N56°17'48"E
100'
100'
℄ PENSTOCK
534.36'
UNITED STATES
OF
AMERICA
N53°41'48"E
32.27'
MANHOLE
MANHOLE
N 36°18'12"W
MATCH SHEET 1
PARCELS 1 & 2
200.00'
S56°17'48"W
S53°41'48"W
27.73'
BAR SCALE
50 0 50 100 150
SCALE: 1"=50'

PROJECT BOUNDARY RAYSTOWN HYDROELECTRIC PROJECT WILLIAM F. MATSON GENERATING STATION FOR ALLEGHENY ELECTRIC COOPERATIVE, INC.		
JUNIATA TOWNSHIP HUNTINGDON COUNTY PENNSYLVANIA		
L. ROBERT KIMBALL & ASSOCIATES CONSULTING ENGINEERS & ARCHITECTS EBENSBURG PITTSBURGH PENNSYLVANIA		
DRAWN BY P.E.P. DATE 6/22/88 TRACED BY S.McQ. DATE 6/23/88 CHECKED BY F.J.J. DATE 6/28/88 APPROVED BY DATE	CODE NO. SCALE 1"=50'	SHEET NO. 2 OF 2

DATE	REVISED	BY

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Huntingdon County, Pennsylvania

Local office

Pennsylvania Ecological Services Field Office

(814) 234-4090

(814) 234-0748

MAILING ADDRESS

110 Radnor Road Suite 101
State College, PA 16801-7987

PHYSICAL ADDRESS

110 Radnor Road
Suite 101}
State College, PA 16801-7987

https://www.fws.gov/northeast/PAFO/index.html

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found This species only needs to be considered if the following condition applies: • The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: https://www.fws.gov/savethemonarch/FAQ-Section7.html). No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Northeastern Bulrush Scirpus ancistrochaetus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6715	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization

measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Black-capped Chickadee *Poecile atricapillus practicus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Jul 31
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10

Cerulean Warbler Dendroica cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20
Eastern Whip-poor-will Antrostomus vociferus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow Ammodramus henslowii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Northern Saw-whet Owl Aegolius acadicus acadicus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jul 31
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

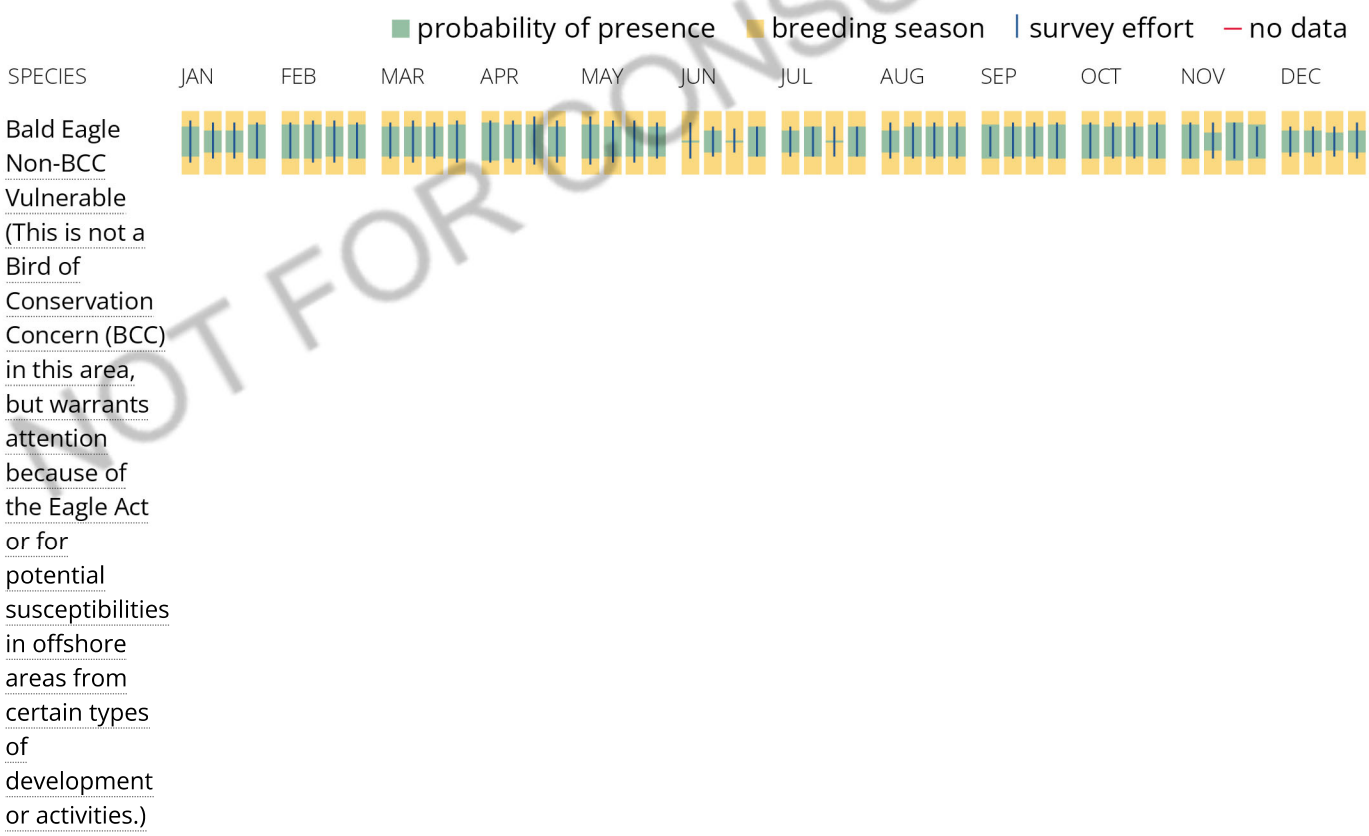
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

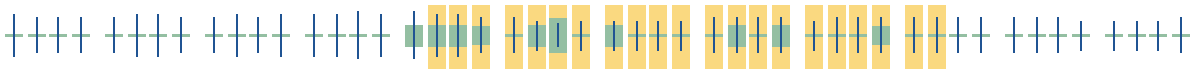
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



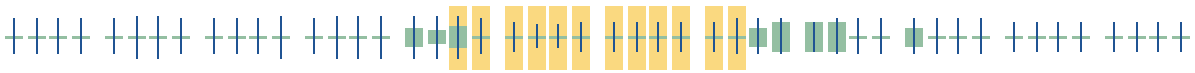
Black-billed Cuckoo BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



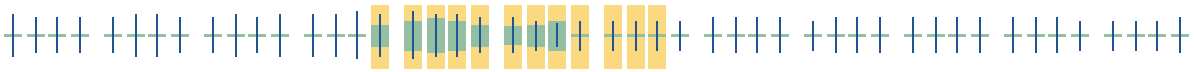
Black-capped Chickadee BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Bobolink BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

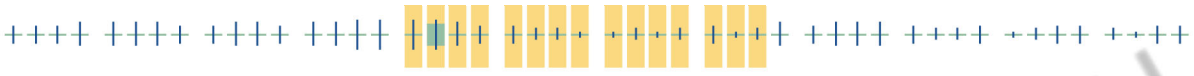
Canada Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Cerulean Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

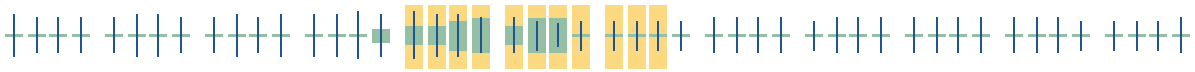


Eastern Whip-poor-will BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

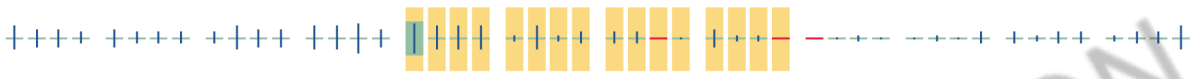


Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Golden-winged Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Henslow's Sparrow BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

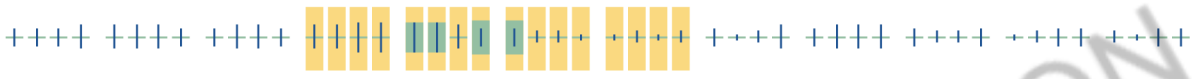


Northern Saw-whet Owl BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

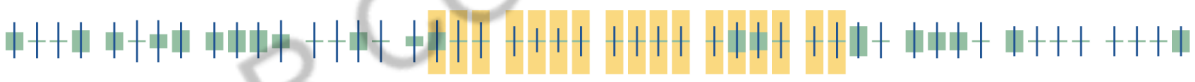
Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Prothonotary Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rusty Blackbird BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project

area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be

helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

THERE ARE NO KNOWN COASTAL BARRIERS AT THIS LOCATION.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.