

**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
U.S. ARMY CORPS OF ENGINEERS  
AND  
U.S. DEPARTMENT OF ENERGY  
BONNEVILLE POWER ADMINISTRATION**

**ARTICLE I. Purpose**

This Memorandum of Understanding (MOU) is entered into by and between the parties, the U.S. Army Corps of Engineers (USACE) and the U.S. Department of Energy, Bonneville Power Administration (BPA). The purpose of this MOU is to establish the respective roles and responsibilities of the parties regarding existing and future passive integrated transponder (PIT) tag detection systems located at USACE Columbia and Snake River hydroelectric dams, Albeni Falls Dam on the Pend Oreille River, and for “off-site” systems, such as the PIT trawl detection system in the lower Columbia River. This MOU is intended to address all design, construction, operations, maintenance, and coordination work related to these systems, including PIT-related hydrosystem monitoring actions being implemented as a result of actions proposed in the January 2020 Biological Assessment (BA) and resulting consultation under Section 7(a)(2) of the Endangered Species Act (ESA) on the effects of the operations and maintenance of the 14 Federal multiple-use projects of the Columbia River System on ESA-listed species under the jurisdiction of the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) (collectively, the “Services”).

**ARTICLE II. PIT Tag Program Overview**

Since 1987, PIT tags have been used to tag fish for a variety of BPA and USACE monitoring programs and research studies in the Columbia River system. The PIT tags and detection systems have been a vital tool for evaluating USACE facilities, juvenile travel time, juvenile transportation programs, overall system survival, and guidance of hydrosystem operations.

PIT tag data collected throughout the region is managed through the Passive Integrated Transponder Tag Information System (PTAGIS) program. PTAGIS was formed to operate and maintain the electronic components of the PIT tag systems and to manage the extensive amount of data being collected. BPA funds this data management by contracting the administration of the PTAGIS program to the Pacific States Marine Fisheries Commission.

Historically in the PIT tag program, USACE has funded the design and construction and/or modification of facility infrastructure, and BPA has funded the development, procurement, and installation of the electronic components, including antennas, for the PIT tag systems.

Existing detection system at Columbia River System (CRS) dams covered by this agreement include the following:

- Lower Granite Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection system; Spillway detection system.
- Little Goose Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection system.
- Lower Monumental Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection systems.
- Ice Harbor Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection systems.
- McNary Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection systems.
- John Day Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection systems.
- The Dalles Dam: Adult Fish Ladder detection systems.
- Bonneville Dam: Juvenile Fish Facility detection system; Adult Fish Ladder detection systems; Powerhouse Two (B2) Corner Collector detection system; Lamprey Bypass (Lamprey Passage Structure) detection systems.
- Off-site systems, including:
  - PIT trawl detection system in the lower Columbia River below Bonneville Dam
  - Pile dike array in the lower Columbia River below Bonneville Dam
  - Flexible array in the lower Columbia River below Bonneville Dam
  - Experimental PIT barge(s), varying location(s)

Each year, modeling is used to estimate the expected hydro-system in-river benefits from dam modifications. The modeling estimates for survival through different reaches are also compared to empirical PIT-tag based in-river survival estimates. Various off-site systems, some operational and others in development, are used to supplement PIT detections at dams. Data collected by these off-site arrays are critical for making the empirical PIT-based survival estimates through different reaches. As of 2023, these “off-site” arrays have included the arrays listed above.

Historically, the parties have shared the cost of development and operation of the PIT trawl detection system in the lower Columbia River, while BPA has historically been responsible for development of new off-site PIT array technologies, including the flexible and pile dike arrays in the lower Columbia River and experimental PIT barges.

Ongoing research and development of PIT tag detection system improvements at existing and new sites, including those at Bonneville and McNary Dams, are underway at the time of this agreement. These efforts are designed to meet Term and Condition 1(B)(i) of the 2020 NOAA CRS Biological Opinion (BiOp), which stipulates the Action Agencies must monitor survival estimates of Snake River and upper Columbia River ESA-listed species between Lower Granite and McNary dams, between McNary and Bonneville dams, and between Lower Granite and Bonneville dams.

During the effective period of this MOU, ineffective PIT detection systems may be retired if new methods or technologies improve detection capabilities and cost effectiveness. Electronics will also require replacement to maintain system functionality across the Columbia River System during the lifespan of this MOU (see Section 3-4, *Incorporating New Technology into Existing Facilities*).

## **ARTICLE III. Roles and Responsibilities**

This MOU is not intended to affect other arrangements between the parties. This MOU shall not be used as a vehicle for authorizing or transferring funds between the parties. If required for a specific activity, a separate formal agreement will be written to transfer funds between the parties.

**3-1. Design and Construction of PIT Detection Systems at Dams.** USACE shall be responsible for designing and constructing new PIT tag facilities authorized and funded through the normal USACE appropriation process. Funding for USACE's portion of design and construction of new PIT tag detection facilities is anticipated to be provided through the Columbia River Fish Mitigation (CRFM) program or other capital improvement programs. USACE will coordinate the scope, function, and design of new facilities with BPA. USACE shall be responsible for designing and constructing the basic fish (juvenile and adult) sampling and PIT tag detection facilities including: all fish passage avenues; holding tanks; water supplies; electrical conduits, grounding and power requirements; compressed air; separation gates; heating, ventilation, and air conditioning; a secure room in the sampling facilities for housing PIT tag computer and electronics equipment; electrical enclosures, and a secure, high-speed data communication link to the internet via lines separate from USACE secure lines. BPA will be responsible for the PIT tag system monthly IPS charges. These items will be included in the basic facility, which is designed and constructed with USACE funding. USACE will lead coordination of the design of new PIT tag facilities with the region through the Fish Facility Design Review Work Group (FFDRWG) or similar regional work groups.

BPA shall be responsible for purchasing all electronic components and computers required to make the new facilities a completely operable PIT tag detection system. BPA will purchase the antennas and furnish them to USACE for installation. BPA and any BPA contractors will be engaged in the USACE design process to ensure components to be provided (e.g., antennas) are effectively integrated into designs.

**3-2. Evaluations and Testing at Dams.** USACE shall be responsible for funding and executing initial post-construction biological testing associated with new PIT detection facilities at dams, including direct injury and survival of fish through new structures and field validation of PIT detection efficiency. BPA shall be responsible for post-construction validation of performance of PIT electrical components provided by BPA (e.g., antennas).

**3-3. Operation and Maintenance of PIT Detection Systems at Dams.** The successful operation and maintenance of a fish monitoring facility with PIT tag detection is a mutual objective of both BPA and USACE. BPA and USACE shall work cooperatively in evaluating the operation of PIT tag facilities for determining the required maintenance of the facilities. USACE shall be responsible for the operation and maintenance of the basic fish sampling facilities at dams. USACE responsibility includes all avenues of fish passage within the facility, including flumes, pipes, switch gates, drop gates, rotating gates, holding tanks, water supply systems, slots, or orifices for housing the antennas, data communications systems, and electrical power systems. These are items that are normally included by USACE in the design of a new facility. The operation and maintenance of the electronic and

computer components of the PIT tag systems, including the antennas shall be the responsibility of BPA. These are the components of the PIT tag facilities that are normally funded by BPA. BPA personnel or contractors (e.g., Pacific States Marine Fisheries Commission) tasked with operating and maintaining PIT tag systems at dams must follow standard USACE project access processes and obtain, if pertinent, required real estate permits. Each party shall be responsible for removal and appropriate disposal of equipment or facilities they operate and maintain, as needed.

**3-4. Off-site PIT Detection Systems.** The suite of off-site PIT detection systems required to effectively support empirical PIT-tag based in-river survival estimates continues to evolve as hydrosystem operations are modified and as new systems (e.g., flexible array, pile dike array) are developed. BPA and USACE shall work cooperatively on an ongoing basis to make timely, determinations regarding responsibilities for the annual costs of funding development, operation, and maintenance of off-site PIT detection systems such as the PIT trawl.

**3-5. Incorporating New Technology into Existing Facilities.** All funding to incorporate new technology into existing fish sampling (juvenile and adult) or PIT tag detection facilities shall be provided by the MOU party originating the request for the change in the facility, unless otherwise agreed. The originating party will also be responsible for coordinating with region fishery agencies, tribes, and interested parties as necessary. The PIT tag program has been an evolving program as new techniques, equipment, and facilities have been developed and incorporated into the program. BPA continues to fund a program to develop new technology for the PIT tag program (BPA contract 1983-319-00). New technology may be incorporated into the existing PIT tag facilities as either a prototype test or as a permanent component. BPA will coordinate with regional fishery agencies, tribes, and interested parties as necessary when designing a new PIT tag technology.

**3-6. Regional Coordination.** Additionally, USACE and BPA will continue regional coordination as appropriate through existing coordination groups or routine meetings, including but not limited to: FFDRWG, System Configuration Team (SCT), Fish Passage Operations and Maintenance work group (FPOM), Studies Review Work Group (SRWG), and Albeni Falls Dam Fish Passage Coordination Meeting.

#### **ARTICLE IV. Interagency Coordination**

To provide consistent and effective communications between USACE and BPA, each USACE District and BPA shall designate a representative for coordinating PIT tag program activities with the other parties. Additional or changes in representatives may be designated by a written notification from one party to the other party of this MOU. USACE and BPA representatives shall coordinate all PIT tag program activities under this MOU and shall serve as points of contact between USACE and BPA on matters relating to this MOU.

## **ARTICLE V. Effective Date, Amendment, and Termination**

This MOU is effective upon the date of the last signature of the parties and shall remain effective for a five-year period from the effective date unless terminated in accordance with terms set forth herein. This MOU may be terminated upon 90 days prior written notice by either party. This MOU may be modified by mutual consent of both parties. At the end of the period to be covered, the MOU shall be reviewed, and a decision made on whether to renew, revise and reissue, or to terminate this MOU.

On a regular basis, or upon request by either party, both parties shall review this MOU to assure that it continues to reflect the appropriate understandings and procedures to provide for current needs and capabilities. This MOU may be modified by written agreement by both parties.

### **Accepting the terms of this agreement on behalf of the parties:**

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Frances E. (Beth) Coffey  
SES, Director of Programs  
Northwestern Division  
U.S. Army Corps of Engineers

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Date

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Scott Armentrout  
Executive Vice President  
Environment, Fish, and Wildlife  
Bonneville Power Administration

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Date