OFFICIAL COORDINATION REQUEST FOR NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE – 17 IHR 011 MOC Trolley and Fish Pipe Install Outage
COORDINATION DATE – 27 July 2017
PROJECT- Ice Harbor Dam
RESPONSE DATE – 10 August 2017

Description of the problem: The installation of the new turbine runner in Unit 2 at Ice Harbor Dam is scheduled for completion in late winter of 2017/2018. Biological testing for Unit 2 is scheduled for fall of 2018. Fish are currently being cultured for use in this testing by PNNL. Biological testing of Unit 3 would occur following the Unit 3 install. Additional studies would occur after the installation of Unit 1. Trolley pipes, to be used for study fish releases in the tailrace for these studies were not installed in January and February 2017 because of early high water and multiple turbine outages at Ice Harbor Dam. We request an extension of the work window (November 15, 2017 through February 28, 2018) for installation of the trolley pipes required for this and future testing. This time extension would allow for flexibility to complete all pipe installs in one work window that would save time and money.

Other outage times considered included late summer and early fall. These alternatives are associated with greater negative impacts to fisheries resources and were discarded for that reason.

Type of outage required: Work will be performed during an extended winter work window (November 15, 2017 – February 28, 2018). The outage will require different combinations of turbines and fish pumps depending on the trolley or fish pipe being installed (See Attachment 1). Pipe installs on the power house will require the unit for the install and any adjacent units be out of service for the duration of the install. For example, when unit 2 pipes are installed, units 1 through 3 will need to be out of service. Pipe installs on the fish pumps will require the fish pumps to be out of service as well as units 1 through 3. Due to the complexity of the work and conditions, all installations (dives) will be performed during the day. To the degree possible, work that directly impacts priority units, fish pumps, and fishways will be performed during the normal winter maintenance period. Outage includes time for project staff to dewater and secure fish pumps and fishways.

Dates of impacts/repairs: November 15, 2017 – February 28, 2018.

Length of time for repairs: Total time of work on site is estimated between 40 to 60 d (See Attachment 1). Actual number of work days will depend on river flows and climate conditions.

Impact on fish facility operation: Short term impacts will include fish pump and fishway outages during pipe installs.

This work may be performed before and/or after the unit 2 commissioning; depending on commissioning schedule. Attachment 1 shows proposed outage needs, but does not yet provide specific dates. Priority units (1 and 3) will require outages to allow fish pipe and trolley pipe installs. For example, unit 1 will require outages totaling 276 hours to complete all installs. Dive safety will require all spillbays to be out of operation for all dive times.

Analysis of potential impacts to fish:

1. 10-year average passage during the dates of impact for adults and juveniles for each affected listed species.

   On average 2,935 (0.6%) adult salmon and steelhead pass Ice Harbor Dam from November 15 to December 31. Of these, 2,879 are steelhead, 48 are Chinook, and 8 are Coho. No adult sockeye or lamprey pass during this time period. At least one of the two ladders at the project will be in operation at all times, but priority units and fish pumps may be out of service. The north fish ladder and fish pumps will be operational for fish passage while the south ladder is out of service.

   Juvenile fish facilities are not in operation during the proposed outage. Very few juvenile fish are expected to pass the project during this time period.

2. Statement about the current year's run (e.g., higher or lower than 10-year average).

   Steelhead forecast for the Snake River to Lower Granite dam is 59,700 for 2017, with B run component estimated to be 5,475. This is below the 10 yr average run of 151,687.

3. Estimated exposure to impact for adults and/or juveniles, as appropriate, by species (number or percentage of the 10 yr average that occurs during dates of action).

   See number 1 above - To the degree possible, work that directly impacts priority units, fish pumps, and fishways will be performed during the normal winter maintenance period. Short term delays may occur for a small portion of adult populations as priority units are switched to accommodate dives and fish search for fishways. No anticipated future impacts to fish from proposed actions.

4. Type of impact for adults and/or juveniles, as appropriate, by species (increased delay, exposure to predation, exposure to a route of higher injury/mortality rate, exposure to higher TDG, etc.).

   Short term delays may occur for a small portion of adult populations as priority units are switched to accommodate dives and fish search for fish ways. No anticipated future impacts to fish from proposed actions.

Final judgement on scale of expected impacts (negligible, minor, significant**) on:**

   a. **Downstream migrants:** Negligible. Less than $1/10^{th}$ of a percent of juvenile fish are moving during this time period. Installation would have no direct effect on those that are.

b. Upstream migrants (including Bull Trout): Negligible. Less than 1 percent of adult fish are migrating during this time period and at least one ladder will remain open at all times.

c. Lamprey: Negligible. No adults are passing at this time and about $1/10^{th}$ of one percent of all juveniles pass during this time. Passage will still be open.

Comments from agencies

From: Bettin,Scott W (BPA) - EWP-4 [mailto:swbettin@bpa.gov]
Sent: Thursday, July 27, 2017 9:26 AM
To: Peery, Christopher A CIV (US) <Christopher.A.Peery@usace.army.mil>
Subject: [Non-DoD Source] RE: [EXTERNAL] Coordination: 17 IHR 11 MOC Trlly and Fish Pipe Installation (UNCLASSIFIED)

-----Original Message-----
From: Tom Lorz [mailto:lort@critfc.org]
Sent: Monday, July 03, 2017 10:29 AM
To: Hockersmith, Eric E CIV USARMY CENWW (US) <Eric.E.Hockersmith@usace.army.mil>
Subject: [Non-DoD Source] RE: Official Coordination 17 IHR 11 MOC for Ice Harbor tailrace Trolley and Fish Release Pipe Installation

Should be fine with this one will wait to see what the Ice Harbor czar Trevor has to say.

tom

That's an awful lot of time to have three units out. Are you just asking for a huge range and the actual install time will be a lot less? These usually only take days to do. Can the work happen in November when flows will likely still be low?

> From: Peery, Christopher A CIV (US)
> Sent: Thursday, July 27, 2017 10:13 AM
> To: 'Bettin,Scott W (BPA) - EWP-4' <swbettin@bpa.gov>
> Subject: RE: [EXTERNAL] Coordination: 17 IHR 11 MOC Trlly and Fish Pipe Installation (UNCLASSIFIED)
>
> CLASSIFICATION: UNCLASSIFIED
>
> It is 24-36 hrs per pipe but there are a lot of pipes because this addresses unit 2 and 3 testing. Unfortunately, because of the nature of the work, installing pipes on the pier noses between units, the units and adjacent units need to be idle. So, working on unit 1, units 1&2 are out, then switch to unit 2 so units 1,2,3 are out, then switch to unit 3, units 2,3,4 are out, etc. So for that period, unit 2 is out for at least three consecutive days. They targeted Jan-Feb to match when fishways and fish pump were down as much as possible.

-----Original Message-----
From: Bettin,Scott W (BPA) - EWP-4 [mailto:swbettin@bpa.gov]
Sent: Thursday, July 27, 2017 11:20 AM
To: Peery, Christopher A CIV (US) <Christopher.A.Peery@usace.army.mil>

Subject: [Non-DoD Source] RE: [EXTERNAL] RE: [EXTERNAL] Coordination: 17 IHR 11 MOC Trlly and Fish Pipe Installation (UNCLASSIFIED)

When is unit 2 executed back in service with the new runner? I haven't been keeping track of that lately.

> From: Peery, Christopher A CIV (US)
> Sent: Thursday, July 27, 2017 11:48 AM
> To: 'Bettin,Scott W (BPA) - EWP-4' <swbettin@bpa.gov>
> Subject: RE: [EXTERNAL] RE: [EXTERNAL] Coordination: 17 IHR 11 MOC Trlly and Fish Pipe Installation (UNCLASSIFIED)
>
> CLASSIFICATION: UNCLASSIFIED
>
> According to Ann's outage table is April or May 2018.

-----Original Message-----
From: Tom Lorz [mailto:lort@critfc.org]
Sent: Monday, July 03, 2017 10:29 AM
To: Hockersmith, Eric E CIV USARMY CENWW (US) <Eric.E.Hockersmith@usace.army.mil>
Subject: [Non-DoD Source] RE: Official Coordination 17 IHR 11 MOC for Ice Harbor tailrace Trolley and Fish Release Pipe Installation

Should be fine with this one will wait to see what the Ice Harbor czar Trevor has to say.

tom

FPOM Meeting, 10 August 2017. Work outside the normal winter outage schedule was not approved. The need to install trolley pipes for biological testing that would be conducted on out years and for which there was not dedicated funded was questioned.

Final coordination results

MOC denied. Work will occur during winter maintenance window.

After action update

Please email or call with questions or concerns.
Thank you,

Charles Chamberlain, Fish Biologist
US Army Corps of Engineers
201 North Third Avenue
Walla Walla, WA 99362-1876
Phone: 509-527-7298
Email: charles.b.chamberlain@usace.army.mil

Attachment 1

Outage Needs and Schedules for Contract 17-C-0004 HLD Trolley and Fish Release Pipes

Outages Needed for FY 18 November to February												
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	South Fish Pumps	Fishway Entrance	South Fish Ladder	Spillway	Trolley Pipes (Future Studies)	Timing	Number of Turbines Available
36 hrs	36 hrs					1 pump 36 hrs	SSE1&2 36 hrs	36 hrs	36 hrs	Unit 1	Jan 1 - 31	4
36 hrs	36 hrs	36 hrs				1 pump 36 hrs	SSE 1&2 36 hrs	?	36 hrs	Unit 2	Jan 1 - 31	3
	36 hrs	36 hrs	36 hrs						36 hrs	Unit 3	Nov 15 - Dec 30	3
		36 hrs	36 hrs	36 hrs					36 hrs	Unit 4	Nov 15 - Dec 30	2
			36 hrs	36 hrs	36 hrs				36 hrs	Unit 5	Nov 15 - Dec 30	2
				36 hrs	36 hrs		NPE 1&2 36 hrs		36 hrs	Unit 6	Nov 15 - Dec 30	3
4 days	6 days	6 days	6 days	6 days	4 days	4 days	2 days	2 days	All	Turbine Trolley Pipe Sub Totals		

Outages Needed for FY 18 November to February												
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	South Fish Pumps	Fishway Entrance	South Fish Ladder	Spillway	Fish Release Pipes (Current Study)	Timing	Number of Turbines Available
60 hrs	60 hrs	60 hrs				1 Pump 60 hrs	SSE 1&2 60 hrs	?	60 hrs	Unit 2	Jan 1 - 31	3
	60 hrs	60 hrs	60 hrs						60 hrs	Unit 3	Nov 15 - Dec 30	3
3 days	6 days	6 days	3 days	0 days	0 days	3 days	0 days	0 days	All	Release Pipe Sub Total		

Outages Needed for FY 18 November to February												
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	South Fish Pumps	Fishway Entrance	South Fish Ladder	Spillway	Fish Pump Trolley Pipes (Future Studies)	Timing	Number of Turbines Available
36 hrs	36 hrs	36 hrs	?			36 hrs	SSE 1&2 36 hrs	?	36 hrs	1*	Jan 1 - 31	2-3
36 hrs	36 hrs	36 hrs	?			36 hrs			36 hrs	2	Jan 1 - 31	2-3
36 hrs	36 hrs	36 hrs	?			36 hrs			36 hrs	3	Dec 1 - 30	2-3
36 hrs	36 hrs	36 hrs	?			36 hrs			36 hrs	4**	Dec 1 - 30	2-3
8 Days	8 Days	8 days	0 days	0 days	0 days	8 days	0 days	0 days	All	Fish Pump Trolley Pipe Sub Totals		
15 days	20 days	20 days	9 days	6 days	4 days	15 days	2 days	2 days	All	Total Days Needed		

**Furthest Upstream **Furthest Downstream*

Possible Outage Needed **Priority Units Used**