

**OFFICIAL COORDINATION REQUEST FOR  
NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE-** 21BON010 ITS gate pre-installation inspection  
**COORDINATION DATE-** 08JUN21 (initial), 07JUL21 closure date change  
**PROJECT-** Bonneville Lock and Dam Powerhouse 1  
**RESPONSE DATE-**

**Description of the problem**

Work window for Ice and Trash Closure has changed from 9-26 August to 11-29 October 2021. Other urgent work has come up that will require use of the work area.

- PH1 Transformer Bank1/2 HO Bushing replacement has been scheduled for August. This work will span three weeks and will require a tanker trailer and oil processing trailer to be stationed directly above the Ice and Trash gate slot.

The ice and trash sluiceway (ITS) at Bonneville's Powerhouse (PH) 1 experienced a south end gate failure on 30 December 2018. The gate cables were frayed, and the guide wheels were either sheared off or damaged. The gate was removed for repairs, the gate guide slot was plated over, and the ITS returned to service until repairs could be completed and the gate reinstalled. The end gate allows the project to close the sluiceway in the event of an emergency and to float large woody debris free of the channel when it becomes a fish passage obstacle. The pre-installation inspection of the gate will require the ITS to be closed for a three-week period to dewater and provide access for the engineers to inspect the slot prior to gate installation.

BON would like to conduct this work during October instead of the winter maintenance period. There are several reasons for this.

-Staffing ability: This work will take 5-6 mechanical crew personnel for the duration of the work. Those staff would then not be available for critical winter maintenance work. BON is rarely able to keep up with winter maintenance work, even with a full staff. The duration of the work would be significantly extended if done in winter.

-Weather: several days will be spent in the wet shoring up leaking bulkheads, then building a cofferdam and installing pumps to move the remaining water around the work area. Icy and wet conditions will pose a serious safety hazard to BON crews doing the work.

-Forebay levels: Bon will communicate with Reservoir Control Center (RCC) about fluctuating forebay levels in October. A teletype may be required to control the forebay levels during the work window.

**Type of outage required-**The ITS will be out of service (OOS).

**Impact on facility-**The outage will not hinder powerhouse or spillway operations.

**Dates of impacts** – From 11-29 October 2021. If the inspection finishes earlier than the three-week predicted window, then the ITS will be restored sooner.

### **Analysis of potential impacts to fish**

**Expected impacts on fish passage** – PH1 units are rarely operating this time of year due to PH2 serving as the priority powerhouse. There would be no downstream surface passage route at PH1 for the duration of the work and reduced attraction flow in the tailrace. Without pull from the ITS, fewer juveniles than normal are expected to make their way into the PH1 forebay. Juvenile fish that do make their way into the PH1 forebay could be delayed in passage and thus exposed to higher predation levels. Adult fish that use routes other than PH1 fishway entrances (PH2) are not expected to experience higher levels of sea lion predation (per personal communication with Dr. Kyle Tidwell).

### **Summary statement - expected impacts on:**

**Downstream migrants (including Lamprey)** -- Downstream passage through the ITS will not be available from 11-29 October. Scheduling the outage during October will ensure that the DSM2 will be operating for juveniles and downstream migrating adults. Downstream migrants that are in the PH 1 forebay may experience an increase in predation and risk of injury if passed through a turbine. The number of fish exposed is expected to be minimal, as the vast majority of downstream migrants have already passed before this outage period.

According to the historic 10-year average passage indexes for sub-yearling Chinook at Bonneville Dam (2011-2020), 95% of the run has passed by 21 July (DART). With the outage occurring in October, the proportion of the run impacted is ~0.04 % of the total 10-year average passage (retrieved from DART, 2021). Yearling Chinook, Coho, Sockeye, and Steelhead all have smaller passage proportions in October than sub-yearling Chinook.

**Upstream migrants (including Bull Trout)** – The upstream and downstream entrances of the PH 1 CC will remain open during the ITS closure. With the loss of attraction flow, some of the fish that would normally be attracted to PH1 passage routes will instead be attracted to PH2 routes. The Sea Lion predation rate is thought to be similar between tailraces, so no increase predation is expected for fish that use routes other than PH. Refer to **Table 2** for 10-year average (2011-2020) total passage at Bonneville for 1-31 October.

**Lamprey** This outage will occur toward the end of the adult lamprey migration period. All ladder entrances and LPS systems should be operating at the time of the ITS outage. The loss of attraction flow provided by the ITS exit will impact lamprey that would use this flow to find PH1 collection channel entrances. However, this impact to lamprey is small, as most adults have already passed Bonneville at this time. Based on

the 10-year average between 2011-2020, 95% of the adult lamprey run has passed by 26 August (retrieved from DART, 2021).

**Table 2. 10-Year Average (2010-2019) of Total Daily BON Passage for October.**

Date	Chinook	Jack Chinook	Steelhead	Unclipped Steelhead	Coho	Jack Coho	Lamprey	Chum
1-Oct	3350	790	706	180	1107	106	10	
2-Oct	3058	771	629	161	1184	92	9	
3-Oct	3055	685	669	175	1099	104	7	
4-Oct	2632	621	589	154	1205	94	3	
5-Oct	2183	552	520	138	995	82	5	
6-Oct	1974	513	492	125	1081	75	2	
7-Oct	1722	477	488	127	1007	89	3	
8-Oct	2311	489	477	131	1175	87	1	
9-Oct	2360	471	439	121	1096	92		
10-Oct	1757	391	357	103	1319	86	6	
11-Oct	1767	324	348	108	1334	81	4	
12-Oct	1148	235	313	93	1204	74	2	
13-Oct	1121	227	307	102	1055	63	3	
14-Oct	1149	207	296	96	981	78	1	
15-Oct	868	212	260	80	905	61	1	
16-Oct	765	190	218	68	977	65	-1	
17-Oct	592	153	188	56	775	57	5	1
18-Oct	851	149	247	86	913	64	-2	
19-Oct	526	113	176	62	728	50	2	
20-Oct	605	124	151	53	599	48		
21-Oct	464	103	131	46	648	45	-2	
22-Oct	513	99	150	51	874	57	1	
23-Oct	493	97	137	40	792	55	2	
24-Oct	428	86	105	35	571	37	1	
25-Oct	440	88	119	48	591	36	1	2
26-Oct	306	68	104	37	529	33	1	
27-Oct	350	66	84	29	545	32	1	
28-Oct	230	49	70	24	429	24	-2	
29-Oct	281	52	83	36	620	45		2
30-Oct	194	35	71	28	353	24		
31-Oct	192	38	70	26	461	24	3	3

**Comments from agencies**

**Final coordination results**

**After Action update**

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

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