

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

COORDINATION TITLE- 17BON75 Spillway Rock Removal

COORDINATION DATE- 08 December 2017

PROJECT- Bonneville Dam Spillway Rock Removal

RESPONSE DATE- 14 December 2017 (FPOM meeting)

Description of the problem

The US Army Corps of Engineers (Corps) is proposing to remove approximately 1,150 cubic yards of rock and gravel that has accumulated on the spillway of Bonneville Dam.

The rocky debris was surveyed in September 2017, and noted as endangering the repair work that took place in 2013. If the rock debris is not removed it could scour away the current repair and restart the erosion of the spillway. If erosion of the spillway occurs it could contribute to weakness of the structure to include the potential for breaching of the dam in areas with electrical wires and pipelines.

A contract for rock removal is to be advertised and awarded so that work can commence as soon as possible. All work will be done from a floating plant in the spillway. Excavation of the material will be by clamshell or long-arm backhoe. Material will be placed in a barge and moved off site by the contractor. Handling and disposal of the material will be left to the contractor. The contract will specify that the contractor is responsible for the obtaining all necessary permits for the handling and disposal of the material.

The schedule for the work will require award of the contract in February with excavation work to begin in mid-February. Completion date for the excavation work is projected at 23 March 2017. The spill season is scheduled to begin 10 April 2018, so all work equipment must be clear of the spillway before that date.

It is expected that work will need to pause for spill.

The usual in-water work window (IWW) for Bonneville Dam is December 1st – February 28th each year. Due to planning, design, and contracting constraints the project cannot be done within that usual IWW.

Requesting an extension of the IWW to 30 March 2017, in case of setbacks.

Type of outage required - Pause of spill to allow equipment to remove debris from under the water at the base of the spillway. The spillway would be available for emergency use.

Impact on facility operation (FPP deviations) – Attraction spill may have to be closed short term to allow the contractor to set up equipment for rock removal. Bradford

Island will be out of service when the contractor initially sets up equipment. The temporary closure may not be necessary.

Impact on unit priority – If the WA Shore outage were to happen simultaneously, the spill way would not be available and PH1 would have priority over PH2. WA Shore would return to service 10 March. The average total discharge for the previous four years are in the table below.

Total Discharge for BON 3/1 – 3/23

Date	2017	2016	2015	2014	Average
3/1	237.33	216.02	209.97	147.76	202.8
3/2	229.97	213.12	195.58	165.93	201.2
3/3	235.09	164.98	183.68	174.72	189.6
3/4	266.95	206.88	193.88	200.34	217.0
3/5	267.34	218.95	197.78	187.05	217.8
3/6	229.38	216.4	215.94	226.25	222.0
3/7	247.25	213.35	214.63	252.41	231.9
3/8	252.93	220.32	204.23	271.85	237.3
3/9	277.48	236.51	190	282.78	246.7
3/10	299.56	247.08	172.61	279.35	249.7
3/11	306.83	248.94	181.48	303.01	260.1
3/12	336.06	246.08	187.25	301.03	267.6
3/13	320.6	221.34	189.66	284.4	254.0
3/14	351.2	200.4	156.62	257.17	241.3
3/15	370.8	228.3	145.92	267.53	253.1
3/16	371.15	235.35	190.25	246.88	260.9
3/17	389.37	226.48	194.35	263.25	268.4
3/18	411.78	217.57	180.75	262.22	268.1
3/19	409.64	215.02	211.99	267.5	276.0
3/20	417.65	201.42	206.47	273.31	274.7
3/21	443.23	203.38	195.61	247.53	272.4
3/22	450.45	210.64	216.28	260.22	284.4
3/23	458.55	208.7	221.09	242.44	282.7

Impact on forebay/tailwater operation - None

Impact on spill – The spillway will be closed except for Bays 1 and 18 for attraction flow. The work will be completed before juvenile spill season. The rocks are in bays 2, 15, 16 and 17.

Dates of impacts/repairs - Construction is scheduled to start mid to late-February and is expected to be completed by 23 March 2017.

Length of time for repairs - Time of repairs is estimated to take 2 weeks (14 days), since this removal (~1150cy) is about twice the amount of the removal in 2012, which took about 8 days to clear.

Analysis of potential impacts to fish

1. 10-year average passage by run during the period of impact for adults and juvenile listed species, as appropriate for the proposed action and time of year

Bonneville Bradford Island - 10 year average												
Date	All CH	A CH	Jack CH	All STHD	Clipped STHD	Unclipped STHD	All Coho	A Coho	Jack Coho	SOC	Chum	Pink
1-Mar	1	1	0	19	13	6	0	0	0	0	0	0
2-Mar	1	1	0	12	8	4	0	0	0	0	0	0
3-Mar	2	2	0	12	6	6	0	0	0	0	0	0
4-Mar	1	1	0	11	6	5	0	0	0	0	0	0
5-Mar	1	1	0	13	8	5	0	0	0	0	0	0
6-Mar	1	1	0	12	7	5	0	0	0	0	0	0
7-Mar	1	1	0	12	8	4	0	0	0	0	0	0
8-Mar	1	1	0	12	9	3	0	0	0	0	0	0
9-Mar	3	3	0	17	11	6	0	0	0	0	0	0
10-Mar	2	2	0	32	20	12	0	0	0	0	0	0
11-Mar	2	2	0	26	18	9	0	0	0	0	0	0
12-Mar	3	3	0	24	15	9	0	0	0	0	0	0
13-Mar	3	2	0	20	12	7	0	0	0	0	0	0
14-Mar	3	3	0	23	14	9	0	0	0	0	0	0
15-Mar	4	4	0	26	18	9	0	0	0	0	0	0
16-Mar	5	5	0	24	16	8	0	0	0	0	0	0
17-Mar	3	3	0	17	12	5	0	0	0	0	0	0
18-Mar	5	5	0	18	13	5	0	0	0	0	0	0
19-Mar	4	4	0	19	13	5	0	0	0	0	0	0
20-Mar	4	4	0	13	8	5	0	0	0	0	0	0
21-Mar	4	4	0	20	14	6	0	0	0	0	0	0
22-Mar	5	5	0	24	17	7	0	0	0	0	0	0
23-Mar	5	5	0	21	15	7	0	0	0	0	0	0

Date	All CH	A CH	Jack CH	All STHD	Clipped STHD	Unclipped STHD	All Coho	A Coho	Jack Coho	SOC	Chum	Pink
1-Mar	0	0	0	20	11	8	0	0	0	0	0	0
2-Mar	0	0	0	17	11	6	0	0	0	0	0	0
3-Mar	1	1	0	20	11	9	0	0	0	0	0	0
4-Mar	1	1	0	24	14	10	0	0	0	0	0	0
5-Mar	1	1	0	23	13	10	0	0	0	0	0	0
6-Mar	1	1	0	29	15	14	0	0	0	0	0	0

7-Mar	2	2	0	25	16	9	0	0	0	0	0	0
8-Mar	1	1	0	18	11	7	0	0	0	0	0	0
9-Mar	1	1	0	19	12	7	0	0	0	0	0	0
10-Mar	4	4	0	31	20	11	0	0	0	0	0	0
11-Mar	3	3	0	31	20	11	0	0	0	0	0	0
12-Mar	4	4	0	33	22	11	0	0	0	0	0	0
13-Mar	1	1	0	30	16	14	0	0	0	0	0	0
14-Mar	2	1	0	41	26	15	0	0	0	0	0	0
15-Mar	2	2	0	44	27	17	0	0	0	0	0	0
16-Mar	4	4	0	50	29	21	0	0	0	0	0	0
17-Mar	2	2	0	47	29	18	0	0	0	0	0	0
18-Mar	3	3	0	41	25	15	0	0	0	0	0	0
19-Mar	7	7	0	38	24	14	0	0	0	0	0	0
20-Mar	5	5	0	27	18	10	0	0	0	0	0	0
21-Mar	7	7	0	41	25	15	0	0	0	0	0	0
22-Mar	5	5	0	35	23	12	0	0	0	0	0	0
23-Mar	7	7	0	38	26	12	0	0	0	0	0	0

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

Chinook and Steelhead runs are forecasted to be similar to 2017, lower than the 10 year average.

<https://www.nwfsc.noaa.gov/research/divisions/fe/estuarine/oeip/g-forecast.cfm>

3. Estimated exposure to impact by species and age class (i.e., number or percentage of run exposed to an impact by the action)

A very small percentage of the run is expected to be impacted by this action due to the lower fish numbers at this time of year.

4. Type of impact by species and age class (increased delay, exposure to predation, exposure to a route of higher injury/mortality rate, exposure to higher TDG, etc.)

Although the attraction water will stay in service, there may be a temporary closure causing delay in finding the entrance.

Summary statement - expected impacts on:

Downstream migrants – No impacts are expected since the work will be completed before juvenile spill season. The B2CC would be operating according to the FPP kelt trigger. If the WA Shore outage occurs then it would open on 15 March.

Upstream migrants (including Bull Trout) – There may be some impacts to adult salmonids using the Cascade Island fish way entrance. Bradford Island fish ladder will return to service in late February. There may be some temporary pauses to the attraction spill. Noise disturbance associated with the rock removal may occur.

Lamprey - Little to no impacts are anticipated to out migrating juveniles or returning adult Pacific Lamprey given the time frames of the proposed work.

Comments from agencies –

Discussion from December meeting minutes:

Conder has concerns about the range of dates listed in the MOC and thinks that the work should be completed in the IWW period. The range of dates is due to the fact that the contract has not yet been awarded. The goal is to be done by the end of February. For this work, when the material in Bay 2 is being removed, attraction spill in bay 1 will most likely off but the attraction spill on the other side is fine. The project requested to leave on the attraction water as long as it is safe. No divers are anticipated for the apron work; they will use Blue View to find the rocks. When the barge is setting, the flow at bay 18 may be shut off.

-----Original Message-----

From: Tom Lorz [mailto:lort@critfc.org]
Sent: Monday, December 11, 2017 2:23 PM
To: Kovalchuk, Erin H CIV USARMY CENWP (US)
<Erin.H.Kovalchuk@usace.army.mil>
Subject: [EXTERNAL] RE: FPOM: Official Coordination 17BON75 MOC
Spillway Rock Removal

What about adult attraction spill being "cut short". Does that mean none at all, on the side they are not working on??? Need to clarify that statement.

Thanks

Tom Lorz

-----Original Message-----

From: Ebner, Laurie L CIV USARMY CENWP (US)
Sent: Thursday, December 14, 2017 6:36 AM
To: Knowles, Sarah L CIV USARMY CENWP (US)
<Sarah.L.Knowles@usace.army.mil>; Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>; Eilts, Kristina E CIV USARMY CENWP (US) <Kristina.E.Eilts@usace.army.mil>
Subject: RE: FPOM: Official Coordination 17BON75 MOC Spillway Rock Removal

How much spill is going to be allowed with divers in the water is going to be based on what is deemed safe in the field. My expectations are the following:

Rock removal at bays 15, 16 and 17:

No impact to spill at bay 1 (for fish attraction).

I would plan on no spill in bay 18. It might be possible but it will depend on where the floating plant sits.

Rock removal at bay 2:

No impact to spill at bay 18 (for fish attraction).

I would plan on no spill in bay 1. It might be possible but it will depend on where the floating plant sits.

Rock removal on the apron:

No impact to spill at bay 1 (for fish attraction).

Initially I expect they will start downstream of bay 9/10 and work south. While at bay 9/10 fish attraction spill at bay 18 should be fine. But as they progress south fish attraction spill in bay 18 may need to be reduced or shut off.

In Erin's note below it states that the work will be performed in "Construction is scheduled to start mid to late-February and is expected to be completed by 23 March 2017." - I hope we are successful in getting the contract awarded so the Contractor is in the spillway closer to early February and completed closer to the 1st of March but we won't know that until the contract is awarded. I say this because our hope is the fish attraction spill through bays 1 and 18 are only impacted during the normal "in-water-work" window.

Want folks to fully understand that if the rocks in the stilling basin (bays 2, 15, 16 and 17) are not removed the juvenile spill pattern will have to be modified. The modifications will not provide good egress conditions. Removing the rocks from the apron is removing a portion of the 6000 cubic yards of rocks rolling around in the tailrace downstream of the spillway. These rocks will be removed from the system and will not end up in the stilling basin.

Laurie Ebner
CENWP-EC-HD
503-808-4880

Final coordination results – FPOM concurred with this action through the end of February and if contracting cannot accommodate this request, then it will be brought back to FPOM.

After Action update – This action was completed in the timeframe coordinated.

Please email or call with questions or concerns.

Thank you,
Erin

Erin Kovalchuk
NWP Operations Division Fishery Section
Columbia River Coordination Biologist
Erin.H.Kovalchuk@usace.army.mil