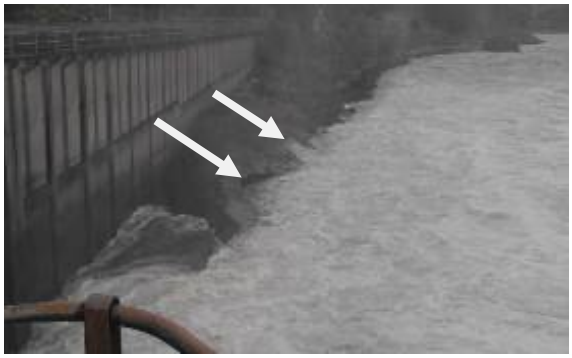
OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE- *16BON107 MFR B-Branch erosion repair*
COORDINATION DATE- 29 August 2016
PROJECT- Bonneville Lock and Dam
RESPONSE DATE- 8 Sept 2016 (FPOM meeting)

Description of the problem – Two erosion holes have been observed in the previously repaired area of the B-Branch riprap. These holes were not observed during the May spillway inspection. Due to the water movement in the eroded areas, there are concerns that the undercutting may extend further beneath the ladder structure. Please see the photos of the erosion areas below.



Type of outage required – The spillway will need to be on sill (except for Bay 1 which will remain at attraction flow criteria of .5') and fish valves FV4-3 and FV4-4 will be closed to allow the Barge access to the erosion holes. B-Branch is not expected to be dewatered.

Impact on facility operation – BON will not be spilling as per the FOP or the FPP. The repair is intended to fix the erosion holes below B-Branch in the stilling basin. Failure to repair may result in BON on having to prematurely close the B-Branch ladder to avoid structural failure and stop spill for juvenile fish passage April 2017. Based on the results of the repair, follow-on multi-beam hydrosurveys may be necessary.

Dates of impacts/repairs – Dec 1, 2016- Jan 31, 2017

Length of time for repairs – About 62 days. The spillway will be tagged out starting at 0600 on Dec 1. Bonneville will attempt to return the spillway and fish valves to service earlier if possible.

Expected impacts on fish passage –
Downstream migrants – No anticipated impacts for downstream migrants.

Upstream migrants (including Bull Trout) – There will be no attraction flow from Bay 18 for B-Branch ladder. Attraction flow from A-branch (Oregon side) and from Bay 1 for the Cascades Island ladder will remain in FPP criteria. The Washington Shore fish ladder will be bulkheaded at the UMT and taken out of service for winter maintenance (1 Dec – 28 Feb); the Cascades Island ladder will not be taken out of service this winter maintenance and will remain in FPP criteria.

Lamprey – minimal impact to lamprey is expected since all fishways will remain watered up and LPSs should not be impacted by the spillway outage.

Chum salmon – Repairs to the Bonneville Dam Bradford Island B-Brach Fishway (Fishway) will have no tailwater impacts on the chum operation because the contractor will be required to operate under a wide range of tailwater elevations the repairs. Maintaining chum tailwater elevations coordination with the TMT will be a higher priority than implementing any potential contractor request for tailwater operations that may facilitate repairs. The Corps will continue to coordinate the Bonneville Dam tailwater operation for chum with the FPOM and TMT.

The following are some of the chum spawning flow requirements identified in the 2014 NOAA Fisheries Supplemental BiOp. A full list of RPA requirements may be found on the following website in RPA 17 found on page 19 of 98. http://www.nwd-wc.usace.army.mil/tmt/documents/wmp/2016/Appendices/Appendix_7_FCRPS_RPA_Table_4.pdf

1. Provide a tailwater elevation below Bonneville Dam of approximately 11.5 feet beginning the 1st week of November (or when chum arrive) and ending by December 31, if reservoir elevations and climate forecasts indicate this operation can be maintained through incubation and emergence.

2. After the completion of spawning, use the TMT process to establish the tailwater elevation needed to provide protection for mainstem chum redds through incubation and the end of emergence.

3. If the emergence period extends beyond April 10th and the decision is made to maintain the tailwater, TMT will discuss the impacts of TDG associated with spill for fish in the gravel. Bonneville Dam typically starts its spring spill around April 10, but a delay in the start of spill may be needed.

Comments:
FPOM discussion: FPOM members would like to see if the AWS valves can stay on during the repair.

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-----Original Message-----
From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Wednesday, August 31, 2016 9:20 AM
To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>

Subject: [EXTERNAL] Re: FPOM: Official Coordination RESEND 16BON107 MOC
B-branch erosion repair

Erin,  There is one more addition to make this accurate.  The section
on expected impacts needs to state that there will be no attraction
flow from bay 18 and the B-branch AWS system (valves FV4-3 and 4-4).
This means no attraction flow at this entrance other than the normal
ladder flow.   While it is obvious we need Bay 18 off, is it absolutely
necessary to have the AWS valves off for the entire period?  The reason
I bring it up is that this is probably the only part of the MOC that
needs a bit of discussion at FPOM. Thanks,  Gary
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-----Original Message-----
From: Hausmann, Ben J NWP
Sent: Tuesday, August 30, 2016 2:22 PM
To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>; Moody, Gregory P NWW <Gregory.P.Moody@usace.army.mil>; Royer, Ida M NWP <Ida.M.Royer@usace.army.mil>
Cc: Mackey, Tammy M NWP <Tammy.M.Mackey@usace.army.mil>
Subject: RE: FPOM: Official Coordination RESEND 16BON107 MOC B-branch erosion repair

Yes, Cascades Island exit should be open during the WA shore ladder outage.
Thanks Greg.

Ben

-----Original Message-----
From: Moody, Gregory P NWW
Sent: Tuesday, August 30, 2016 1:57 PM
To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>
Subject: RE: FPOM: Official Coordination RESEND 16BON107 MOC B-branch erosion repair

Will Cascades Island ladder be open for adult fish counts since Wa will be OOS?

Greg

Final results – This MOC was approved at the September FPOM but members would like to see if the project can leave the AWS valves on during the repair.

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

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

Comments from agencies –
CRITFC (phone call on 14 June) – Lorz indicated an understanding of the critical nature of this work and asked only that Bay 1 be kept at attraction flow if possible and lead time be given so tribal fishermen can adjust their fishing days if they need to.

ODFW – Original Message
From: Erick VanDyke
Sent: Thursday, June 16, 2016 16:35
To: Mackey, Tammy M NWP; Bissell, Brian M NWP; Carlsen, Elisa NWP; Clinton, Patricia L NWP; Cordie, Robert P NWP; Cutts, Matthew E NWP; Derugin, Andrew G NWP; Dykstra, Timothy A NWD; Ebner, Laurie L NWP; Faulkner, Donald L NWD; Feil, Dan H NWD; Fielding, Scott D NWP; Filan, Benjamin J NWP; Gallion, Darren G NWP; Gibbons, Karrie M NWP; Grosvenor, Eric NWP; Hausmann, Ben J NWP; Holm, Leanne NWP; Hutton, Rebecca E NWP; Khan, Fenton O NWP; Langeslay, Mike J NWD; Lear, Gayle HQ @ NWD; Medina, George J NWP; Ocker, Paul A NWD; Peters, Rock D NWD; Rerecich, Jonathan G NWP; Richards, Natalie A NWP; Royer, Ida M NWP; Stricklin, Eric T NWP; Tackley, Sean C NWP; Van der Leeuw, Bjorn NWP; Walker, Ricardo NWP; Wells, Elizabeth R NWP; Zorich, Nathan A NWP; Zyndol, Miroslaw A NWP; Bailey, John C NWW; Baus, Douglas M NWD; BPA Scott Bettin; Bill Hevlin; Charles Morrill (charles.morrill@dfw.wa.gov); david_swank@fws.gov; Ed Meyer (ed.meyer@noaa.gov); Eppard, Matthew B NWP; Erick VanDyke; Fredricks, Gary; Haeseker, Steve; Jeffrey Brown - NOAA Federal; Kiefer,Russell; Klatte, Bernard A NWP; Lorz, Tom; Moody, Gregory P NWW; Paul Wagner; Richards, Steven P (DFW); Setter, Ann L NWW; Shutters, Marvin K NWW; trevor.conder@noaa.gov; Wertheimer, Robert H NWP; Wright, Lisa NWD
Cc: Aaron Jackson; Alan Brower; 'Brandon Chockley'; Smith, Brian K NWP; Yeadon, Bruce F NWP; Chris Caudill (caudill@uidaho.edu); Petersen,Christine H (BPA) - KEWR-4; Chris_Peery@fws.gov; Statler, Dave; Smith, David B NWP; Dave Benner; Darren Chase; Ballinger, Dean; Derrek M Faber; Don Warf; Erin Cooper; 'Enrique Patino'; Fryer, Jeff; Kovalchuk, Greg; Webb, Gregory A NWP; Howard Takata; jadoumbia@bpa.gov; Dalgliesh, Jane NWP; Fauth, Jeffrey D NWP; Jen Graham; Carroll, Jerry A NWP; Jerry McCann; Skidmore,John T - KEWR-4; Johnson,Kimberly O (BPA) - PGST-5; Ralph Lampman; Lane, Laurie E NWP; Lgrsmp1@gmail.com; Patrick Luke; Chase, Matthew T NWP; Brian McIlraith; Adams, Michael D NWP; Roth, Michael J NWP; Olaf Langness; Hamelink, Pete NWP; Guajardo, Angel R (Ray) NWP; Roger Clark; Roger Dick Jr.; Martinson, Rick; Bob Rose; rreagan@usgs.gov; Mac Kinnon, Scott R NWP; Shane Scott; Sears, Sheri; Tom Skiles; Donahue,Scott L (BPA) - KEWR-4; Scott Livingston; Tom; Troy Humphrey; Tucker Jones; Thomas VanNice; Whiteaker, John
Subject: [EXTERNAL] RE: FPOM: Official Coordination 16BON31 MFR B-Branch erosion survey

Oregon is disappointed at the disruption of planned spill operations planned for tomorrow morning at Bonneville Dam. Although it is difficult to understand if the erosion condition ultimately required immediate operational changes in the fish passage protection measures, we recognize that understanding the breathe of the erosion problem may help inform the expected coordination planned for next month's FPOM meeting. Given this, we will not elevate our objection at this time to the Corps internally coordinated change in spill operations.

We urge the Corps to resume spill sooner than the 7 hours of disruption described in the MFR if the inspection work is completed sooner than estimated. In addition, we urge the Corps to provide "gas cap spill" at night to compensate for fish passage protections lost during the inspection. We anticipate that any additional changes in spill at Bonneville dam (unexpected or

otherwise) be inclusive of all regional management interests before making a change. We hope to receive a report of findings from the ROV survey as soon as it is available. This should help facilitate coordinated actions moving forward.

Erick Van Dyke
Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, Oregon 97015
Voice: 971-673-6068
Fax: 971-673-6073

-----Original Message-----
From: Erick VanDyke [mailto:erick.s.vandyke@state.or.us]
Sent: Friday, June 17, 2016 12:40 PM
To: Mackey, Tammy M NWP <Tammy.M.Mackey@usace.army.mil>
Subject: [EXTERNAL] RE: FPOM: Official Coordination 16BON32 MFR B-Branch erosion survey

Thanks for the update Tammy. Appreciate the earlier than expected return to spill and look forward to next week's follow-up. Thanks folk for their efficient efforts and hope your weekend is filled with fun-time too.
Erick

WDFW - -----Original Message-----
From: Morrill, Charles (DFW) [mailto:Charles.Morrill@dfw.wa.gov]
Sent: Friday, June 17, 2016 3:38 PM
To: Mackey, Tammy M NWP <Tammy.M.Mackey@usace.army.mil>
Subject: [EXTERNAL] RE: FPOM: Official Coordination 16BON32 MFR B-Branch erosion survey

Thanks Tammy ... And hopefully no bad news ...
Have a Gr8 weekend
Charlie

RCC Teletype -
ATTENTION: BONNEVILLE AND BPA
SUBJECT: CLOSE SPILL BAYS 2-18 FOR ROV INSPECTION JUNE 17

REFERENCE CBT: BON R 061016 1400 BONNEVILLE FOREBAY OPERATION FOR SUMMER TREATY COMMERCIAL FISHERY

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1. EFFECTIVE FRIDAY, JUNE 17, FROM 0600-1300 HOURS, CLOSE SPILLWAY BAYS 2-18 TO ACCOMMODATE AN ROV SURVEY OF NEWLY DISCOVERED EROSION HOLES AT THE BRADFORD ISLAND B-BRANCH LADDER ENTRANCE.
2. SPILL THROUGH BAY 1 OPEN 0.5 FT (1 STOP) TO PROVIDE ATTRACTION FLOW TO THE CASCADES ISLAND FISH LADDER.
3. CLOSE FISH VALVES (FV) 4-3, 4-4 TO REDUCE FLOW THROUGH THE B-BRANCH.
4. THIS OPERATION MAY START LATER OR END EARLIER UPON REQUEST FROM THE SURVEY CREW (POC: TODD MANNY).
5. CONTINUE TO OPERATE THE FOREBAY WITHIN A 1.5-FT BAND IN ACCORDANCE WITH REFERENCE CBT BON R 061016 1400 “SUMMER TREATY FISHERY”, TO THE

EXTENT POSSIBLE. IF NECESSARY TO OPERATE OUTSIDE OF THE 1.5-FT FOREBAY BAND, NOTIFY RCC (CONTACT INFO IN PARAGRAPH 9 BELOW).
6. CONTINUE TO OPERATE TURBINE UNITS WITHIN OPERATING RANGES DEFINED IN THE 2016 FISH PASSAGE PLAN (FPP), SECTION 5.2.4.1. (PAGE BON-35). SPECIFICALLY, FROM JUNE 16-JULY 31, OPERATE AVAILABLE UNITS IN THE FOLLOWING ORDER OF OPERATING RANGES TO PASS INCREASING FLOW:
--PH2 UNITS WITHIN THE 1% MID-RANGE (13-15 KCFS)
--THEN, PH1 UNITS UP TO BOP;
--THEN, PH2 UNITS UP TO THE 1% UPPER LIMIT.
7. THE INTENT OF THIS ROV SURVEY IS TO ASSESS THE EXTENT OF NEWLY DISCOVERED EROSION HOLES IN THE RECENTLY REPAIRED RIPRAP NEAR THE B-BRANCH ENTRANCE. DUE TO THE OBSERVED HYDRAULICS IN THE ERODED AREAS, THERE ARE CONCERNS THAT THE EROSION MAY EXTEND BENEATH THE LADDER STRUCTURE.

RCC email - -----Original Message-----
From: Wright, Lisa NWD
Sent: Friday, June 17, 2016 11:36 AM
Subject: BON Revised FOP spill schedule

Good morning,
In light of the erosion issues currently being surveyed at the Bradford Island B-Branch, we received a recommendation from Tom Lorz, CRITFC, to revise the spill treatment schedule to stay at 95 kcfs spill until we have a better understanding of the extent of the erosion and can go to higher spill without making the problem worse. The attached draft teletype has a revised spill treatment schedule to continue spill of 95 kcfs, 24-hours/day, for the next week. The first 2-day block of Day 85 kcfs/Night 121 kcfs would begin on Sunday, 6/26, at 0430.

Once the survey information is available, the schedule may be revised again if necessary.
Thanks!
Lisa

RCC Teletype - BON R 061716 1547 CO BON TDA JDA MCN BPA BPC NPD NPC NPP
ATTENTION: BONNEVILLE DAM AND BPA
SUBJECT: [REVISED] FOP SPRING AND SUMMER SPILL FOR FISH PASSAGE

REPLACE CBT: BON R 040716 1549 FOP SPRING AND SUMMER SPILL FOR FISH PASSAGE
*REVISED PARAGRAPH 2 - CHANGED TREATMENTS JUNE 18, JUNE 22 DUE TO EROSION ISSUES AT BRADFORD ISLAND B-BRANCH LADDER

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1. EFFECTIVE APRIL 10-AUGUST 31, OPERATE PER THE 2016 FISH OPERATIONS PLAN (FOP) TO PROVIDE SPRING AND SUMMER SPILL FOR FISH PASSAGE.
2. THE FOP SPRING AND SUMMER SPILL SCHEDULE AT BONNEVILLE DAM IS DEFINED BELOW (SEE FOP, PAGE 15):

START DATE/TIME	FOP SPILL OPERATION	
Apr 10 0:01	100 kcfs	SPRING SPILL

Jun 16	4:30	95 kcfs	SUMMER SPILL
*Jun 18	4:30	*95 kcfs	
Jun 20	4:30	95 kcfs	
*Jun 22	4:30	*95 kcfs	
Jun 24	4:30	95 kcfs	
Jun 26	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2130
Jun 28	4:30	95 kcfs	
Jun 30	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2130
Jul 2	4:30	95 kcfs	
Jul 4	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 6	4:30	95 kcfs	
Jul 8	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 10	4:30	95 kcfs	
Jul 12	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 14	4:30	95 kcfs	
Jul 16	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 18	4:30	95 kcfs	
Jul 20	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 22	4:30	95 kcfs	
Jul 24	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 26	4:30	95 kcfs	
Jul 28	4:30	Day 85 kcfs/Night 121 kcfs	DAY=0430-2200
Jul 30	4:30	95 kcfs	
Aug 1	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2145
Aug 3	5:00	95 kcfs	
Aug 5	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2145
Aug 7	5:00	95 kcfs	
Aug 9	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2145
Aug 11	5:00	95 kcfs	
Aug 13	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2145
Aug 15	5:00	95 kcfs	
Aug 17	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2030
Aug 19	5:00	95 kcfs	
Aug 21	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2030
Aug 23	5:00	95 kcfs	
Aug 25	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2030
Aug 27	5:00	95 kcfs	
Aug 29	5:00	Day 85 kcfs/Night 121 kcfs	DAY=0500-2030
Aug 31	24:00	0	END FOP SPILL

3. DURING DAY/NIGHT SPILL OPERATIONS, TRANSITION TO DAY SPILL AFTER NIGHT SPILL IS OVER. DAY HOURS ARE DEFINED IN THE 2016 FISH PASSAGE PLAN (FPP) TABLE BON-5 (PAGE BON-14).

4. SPILL ACCORDING TO PATTERNS IN FPP TABLE BON-16 AT A RATE THAT IS CLOSEST TO THE FOP TARGET. ACTUAL SPILL MAY RANGE UP TO +/-3 KCFS DUE TO PROJECT OPERATIONAL LIMITATIONS. FOR MOREINFO, SEE THE 2016 FOP (PAGE 15).

5. OPERATE THE POWERHOUSE 2 CORNER COLLECTOR (B2CC) DURING FOP SPRING AND SUMMER SPILL. CLOSE THE B2CC WITHIN 1 HOUR OF THE END OF FOP SPILL ON AUGUST 31. FOR MORE INFO, SEE THE 2016 FPP SECTION 2.3.2.5.t (PAGE BON-20) AND 2016 FOP (PAGE 15).

6. MAINTAIN SPILL AT THE FOP TARGET AS LONG AS IT DOES NOT EXCEED THE TDG CAP IN LEVEL 1 OF THE MOST RECENT “SPILL PRIORITY LIST” CBT. DO NOT SPILL ABOVE EITHER THE FOP TARGET OR THE LEVEL 1 TDG SPILL CAP, EXCEPT AS REQUIRED DURING INVOLUNTARY SPILL IN ACCORDANCE WITH THE “SPILL PRIORITY LIST” CBT.