OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION DATE- 2 May 2017
COORDINATION TITLE – 17JDA06 Spill Bay 20 Restriction
PROJECT- John Day Lock and Dam
RESPONSE DATE- 16 May 2017

Description of the problem- The Spillbay 20 discharge has been extremely turbulent during this high flow year resulting in a couple of fish mortalities being thrown on the adjacent PH tailrace deck. This high turbulence has been noticed by a number of FPOM members who suggest a temporary reduction of spillway 20 discharge.

Type of outage required - Corps proposes to temporarily limit the gate opening of bay 20 to 3 stops when the total spill is 128.2 Kcfs or higher. At 128.2 K the JD TSW Spill Table calls for the bay 20 to be open at 3.5 stops and its opening increases further as the total spill gets larger (please see the table for details.) Any spill called for above 3 stops at bay 20 will be spread evenly over the current TSW spill pattern bays.
During this extremely high flow year the JD Spill was above 128 K 1 April through 22 April and it might be exceeding this level again in late May and early June 2017. We believe that this selective/temporary 3 stops cap at bay 20 is necessary to reduce its excessive turbulence which creates unsafe passage conditions.
Impact on facility operation – None.

Length of time for repairs- Bay 20 will be limited to 3 stops when the total spill is 128.2 Kcfs or higher, which typically occurs only during the extremely high flow years like 2017.

Expected impacts on fish passage - This action has a potential to provide safer fish passage conditions at spill bay 20. Any spill called for above 3 stops at bay 20 will be spread evenly over the current TSW spill pattern bays.

Comments from agencies-

-----Original Message-----
From: Trevor Conder - NOAA Federal [mailto:trevor.conder@noaa.gov]
Sent: Thursday, May 04, 2017 9:03 AM
To: Gary Fredricks - NOAA Federal <gary.fredricks@noaa.gov>
Cc: Zyndol, Miroslaw A CIV CENWP CENWD (US)
<Miroslaw.A.Zyndol@usace.army.mil>; Kovalchuk, Erin H CIV USARMY CENWP
(US) <Erin.H.Kovalchuk@usace.army.mil>; Lorz, Tom <lort@critfc.org>; Ed
Meyer <Ed.Meyer@noaa.gov>; Ebner, Laurie L CIV USARMY CENWP (US)
<Laurie.L.Ebner@usace.army.mil>
Subject: Re: [Non-DoD Source] Re: FPOM: Official Coordination 17JDA06
MOC JDA-Spill Bay 20 Restriction

All,

I took a quick look at the data and JDA exceeded 128K spill during the freshet in 7 of the last 10 years.Many of those years JDA exceeded 128K for an extended period. Per the order, we are likely to exceed it more frequently moving forward.

-Trevor
-----Original Message-----
From: Zyndol, Miroslaw A CIV CENWP CENWD (US)
Sent: Thursday, May 04, 2017 9:38 AM
To: Gary Fredricks - NOAA Federal <gary.fredricks@noaa.gov>
Cc: Kovalchuk, Erin H CIV USARMY CENWP (US)
<Erin.H.Kovalchuk@usace.army.mil>; Lorz, Tom <lort@critfc.org>; Ed Meyer <Ed.Meyer@noaa.gov>; Trevor Conder <Trevor.Conder@noaa.gov>; Ebner, Laurie L CIV USARMY CENWP (US) <Laurie.L.Ebner@usace.army.mil>; Scott Bettin <swbettin@bpa.gov>
Subject: RE: [Non-DoD Source] Re: FPOM: Official Coordination 17JDA06 MOC JDA-Spill Bay 20 Restriction

Gary,

I was just trying to be helpful by pointing out some facts which I had learned in preparing of this current MOC, which was suggested by you and Scott Bettin.

You are correct that the 3 stop limit in 2011 is the same as now. I meat that at least for me, specifying the 128.2 K trigger level as compared with implying it (in 2011 MOC) is important to understanding when it would be used. In particular for people without a detailed understanding of this issue and tending to think that the 3 stop limit would be a frequent, annual occurrence.

The 3 stop limit in 2011 was suggested by the JD Operations and it was based on the amount of spray/ rooster tail shooting in the air which caused flooding of the dewatering pumps adjacent to bay 20. That is somewhat arbitrary, but still based on the observed facts.

Last but not the least, I believe that there is a close correlation between the high river flows/ spill and tailrace which is rather constant. Specifically, above 400 K total flow the tailrace elevation is correspondingly high and without much variability.
I expect Laurie to investigate in detail and I won't be hurt if she refutes this ; I had been wrong many times before :)

Thanks!
MZ

-----Original Message-----
From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Thursday, May 04, 2017 7:39 AM
To: Zyndol, Miroslaw A CIV CENWP CENWD (US)
<Miroslaw.A.Zyndol@usace.army.mil>
Cc: Kovalchuk, Erin H CIV USARMY CENWP (US)
<Erin.H.Kovalchuk@usace.army.mil>; Lorz, Tom <lort@critfc.org>; Ed Meyer <Ed.Meyer@noaa.gov>; Trevor Conder <Trevor.Conder@noaa.gov>; Ebner, Laurie L CIV USARMY CENWP (US) <Laurie.L.Ebner@usace.army.mil>
Subject: Re: [Non-DoD Source] Re: FPOM: Official Coordination 17JDA06 MOC JDA-Spill Bay 20 Restriction

Miro, I guess I'm having some trouble understanding your point. If asking for a 3 stop limit above 128.2 k in 2011 was vague then so is this MOC, since it is basically the same. This issue has happened twice in seven years and probably twice this year, so it seems a bit more frequent than every 10 to 20 years. Also, it happens during the peak fish passage period which makes it an important issue for fish. I would say the 3 stop limit is pretty arbitrary. It may work ok at the river flow/tailwater levels that you have seen but what about other levels? Why wouldn't we investigate this if all we have to do is adjust the gate and look?. Also, given the failing infrastructure of your spillway (as you indicate) it seems we may have more difficulty in moving water from bay 20 making it more important to know just how much we need to move. Thanks, Gary

-----Original Message-----
From: Zyndol, Miroslaw A CIV CENWP CENWD (US)
Sent: Tuesday, May 02, 2017 7:43 PM
To: Gary Fredricks - NOAA Federal <gary.fredricks@noaa.gov>; Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>
Cc: Lorz, Tom <lort@critfc.org>; Ed Meyer <Ed.Meyer@noaa.gov>; Trevor Conder <Trevor.Conder@noaa.gov>; Ebner, Laurie L CIV USARMY CENWP (US) <Laurie.L.Ebner@usace.army.mil>
Subject: RE: [Non-DoD Source] Re: FPOM: Official Coordination 17JDA06 MOC JDA-Spill Bay 20 Restriction

Gary et al.
Yes, we had 3 stop limit in 2011 but that MOC was rather vague; I indicated that it only applies to the total spill over 128.2 K which is not going to happen very often. Probably for a short time, every 10 to 20 years during the extremely high total river like we are having this year.

Typically, the JD tailwater is high when we have high total river so from a practical standpoint there isn't much to investigate (?) This is only me and Laurie would know better what is appropriate.

As far as the redistribution goes, please note that we currently have the bays 3, 5, 17 OOS for bad brakes. It appears that the brake pads have been wearing out faster than in the past due to the fish spill's frequent adjustments. Plus, Maintenance has told me that the entire brake's control assembly is outdated (still analog) but there isn’t any Spillway funding for this necessary upgrade. Just to clarify, the JD Fish budget is badly in the red as well...

Let me know if you have any questions.
Thanks for the help!
MZ

-----Original Message-----
From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Tuesday, May 02, 2017 8:38 AM
To: Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>; Zyndol, Miroslaw A CIV CENWP CENWD (US) <Miroslaw.A.Zyndol@usace.army.mil>

Cc: Lorz, Tom <lort@critfc.org>; Ed Meyer <Ed.Meyer@noaa.gov>; Trevor Conder <Trevor.Conder@noaa.gov>; Ebner, Laurie L CIV USARMY CENWP (US) <Laurie.L.Ebner@usace.army.mil>
Subject: [Non-DoD Source] Re: FPOM: Official Coordination 17JDA06 MOC JDA-Spill Bay 20 Restriction

Erin and Miro, A couple of comments. You might note that this restriction was also implemented in 2011, so it isn't new. And second, this should be considered temporary only until we can establish a long-term pattern. I was thinking that, as the tailwater moves up later in the month, we could do some experiments at the project to establish just what the tailwater specific restrictions for this bay are. It might be that a blanket 3 stop limit is appropriate but it may not be at higher tailwaters. Also, I think we could be a bit more selective with the redistribution of bay 20 flow than just evenly spreading it across the other bays. So, bottom line I am good with doing this as indicated in the MOC for now, but lets do a bit of fine tuning for a more permanent change form fix. Thanks, Gary

-----Original Message-----
From: Erick VanDyke [mailto:erick.s.vandyke@state.or.us]
Sent: Tuesday, May 02, 2017 8:53 AM
To: Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>; Subject: [Non-DoD Source] RE: FPOM: Official Coordination 17JDA06 MOC JDA-Spill Bay 20 Restriction

This seems like an important discussion topic for FPOM and a necessary part of the topics pertinent to 2018 spill season preparation. I had a few clarifying questions after reviewing the MOC. Which are the current TSW spill pattern bays? What documentation is being used to determine the assignment of the current TSW spill pattern bays? Are they readily available for FPOM review? It may just be semantics of the form, but is this being considered a repair? It seems more like a change in operation.

A quick look at spill bay 20 use at JDA during April is showing that it has been using a larger stop setting (generally .5 or more than is shown in Table JDA-8 of the 2017 FPP for the average 24-hr spill volume for each day in April. Not heard of any planned or simulation efforts being conducted at John Day. Has there been observational tweaking of the pattern occurring under a special FPOM group or other?

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Final results- This MOC was denied at the May FPOM meeting. This was the discussion from the meeting:

This MOC is to restrict Spill bay 20 to 3 stops to control the spray/turbulence. In 2011, a similar restriction was used to protect equipment but now it is to eliminate turbulence. Bay 20 has the

extended flow deflector. Wertheimer mentioned that a spill curtain was looked at during the PDT. Modeling might be necessary since the number of stops may change depending on tail water. The three stops was based on Operator's observations. Currently, the spillway has three bays out of service for bad brakes. Bay 17 will be fixed first since it is a high priority. The failure of the brake assembly is a newer problem and three have failed this year. JDA needs funding for the spill way issues. The gates cannot be dogged off. ACTION: Cordie will check on the pendants used at TDA to see if they could be used at JDA. Zyndol explained the computer control of the spill bays and how the redistribution works. Due to three bays out of service, FPOM wants to use spill bay 20. This MOC is denied.

UPDATE 5/31/17: After two more adult and three more juveniles morts were found, the project decided to implement the three stop limit. All spill bays have returned to service.

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

Miro Zyndol
Chief of Fisheries
John Day Dam

And

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