OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE- 17 MCN 10 Temporary Unit 2 priority change
COORDINATION DATE- June 13, 2017
PROJECT- McNary Dam
RESPONSE DATE- June 26, 2017

Description of the problem: Unit 2 recently returned to service from a thrust bearing issue. The unit has been running well, however during the startup sequence we noticed higher thrust bearing oil pressures than normal. Until the issue can be addressed in July, we would like to change unit priority so unit 2 is second behind unit 1, which should reduce the number of startups and the risk of having another thrust bearing failure.

The Operations and Maintenance Chiefs will schedule a unit 2 outage for July for one to two weeks. The unit will be removed from service, then taken apart, the thrust bearing orifices will be examined and the unit will then be put back together and re-commissioned.

Once the pressure issue is resolved, unit 2 can be returned to its normal position in the unit priority schedule.

Type of outage required: This MOC addresses the unit priority change until unit 2 can be serviced, tentatively scheduled for one to two weeks in July.

Impact on facility operation: None.

Impact on unit priority: Current unit priority from Table MCN-5, FPP page MCN-25, is units 1, then 14-2 in descending order. Unit 2 has the lowest priority.

We would like to change the priority to units 1 and 2, then 14-3 in descending order. Unit 2 would be second in priority after unit 1.

Impact on forebay/tailwater operation: None.

Impact on spill: None.

Dates of impacts/repairs: The unit priority change would occur immediately. Unit 2 thrust bearing inspection will take one to two weeks in July at which time the unit will be out of service. As soon as the pressure issue is resolved, we would return to normal unit priority.

Length of time for repairs: The unit priority change would be approximately 1.5 months. The unit 2 outage would be one to two weeks in July, dates to yet be determined.

Analysis of potential impacts to fish: Adult fish passage data is from the DART website: http://www.cbr.washington.edu/. This data was compiled by COE staff. The juvenile bypass data is from McNary's juvenile bypass system sampling, COE data. Since unit priority is set to augment flow to the juvenile outfall, it seemed reasonable to use COE data. COE and Smolt Monitoring personnel worked on the juvenile data.

1. Ten year average data for time frame of unit priority change:

Table 1. 2007-2016 10 Year average for adults for June 1 – July 31

Spring Chinook	Spring Chinook Jack	Summer Chinook	Summer Chinook Jack	Steelhead	Wild Steelhead	Sockeye
8,720	2,143	66,471	12,442	21,662	9,169	225,569

Sockeye, summer Chinook and steelhead are the predominant species passing during June and July. Coho are not running during this time frame.

Table 2. 2007-2016 10 Year average for Juvenile Salmonids for June 1 – July 31

Yearling Chinook	Subyearling Chinook	Clipped Steelhead	Unclipped Steelhead	Clipped Sockeye	Unclipped Sockeye	Coho
37,549	1,619,008	7,059	4,008	668	36,059	12,296

Subyearling Chinook are the predominant race/species passing during the priority change time frame.

2. Current Run data year to date (YTD), June 8, 2017:

Table 3. Adults Counts YTD, June 8, 2017

	Spring Chinook	Spring Chinook Jack	Steelhead	Wild Steelhead	Sockeye
Fish Count	43,549	6,906	2,522	749	63
% of 10-yr avg.	46	41	38	34	12

To date, runs are below the 10 year average 2007-2016 YTD. Percentage is this year's YTD count divide by the 10 year average YTD.

Table 4. Juvenile Numbers YTD, June 8, 2017

	Yearling Chinook	SubYearling Chinook	Clipped Steelhead	Unclipped Steelhead	Clipped Sockeye	Unclipped Sockeye	Coho
Fish #	568,718	167,607	125,028	39,339	701	54,369	30,870
% of 10-yr avg.	52.9	224.4	54.1	55.7	11.5	15.2	50.6

A total of 986,632 smolts have been bypassed YTD, June 8, 2017. All races and species are well below the YTD 10 year average except subyearling Chinook. It is suspected the high flows this year are taking the majority of fish over the spillway and flushing out the subyearling Chinook early. Percentage is this year's YTD count divide by the 10 year average YTD.

3. Estimated exposure for adult and juvenile fish passage:

Table 5. Percent Estimated Exposure for Adults

	Spring Chinook	Spring Chinook Jack	Summer Chinook	Summer Chinook Jack	Steelhead	Wild Steelhead	Sockeye
Percent Affected	9.3	12.8	95.7	95.5	9.6	13.3	99.6

Summer Chinook and Sockeye salmon will be the predominant species passing during the unit priority change. The percentage is June and July 10 year average divided by total run 10 year average.

Table 6. Percent Estimated Exposure for Juveniles

	Yearling Chinook	Subyearling Chinook	Clipped Steelhead	Unclipped Steelhead	Clipped Sockeye	Unclipped Sockeye	Coho
Percent Affected	3.5	86.9	3.0	5.5	10.3	9.9	18.8

Subyearling Chinook will be the predominant race/species effected. The percentage affected is the June and July 10 year average divided by total passage 10 year average.

4. Impacts on juvenile and adult salmonid or lamprey passage should be minimal. For juvenile salmonid and lamprey passage, flow from the project to the juvenile bypass outfall should not be affected. Spill will not be effected. With current projected flows, the saw tooth unit pattern for temperature abatement should not be adversely affected. Unit 2 would be the first unit off when the saw tooth begins and would most likely remain off until water temperatures lower.

Attraction flow to the Oregon ladder entrances will not be affected. Adult lamprey and salmonid passage should not be adversely affected.

Summary statement - expected impacts on:

Downstream migrants: minimal effect on juvenile salmonid passage.

Upstream migrants (including Bull Trout): minimal effect on adult salmonid passage.

Lamprey: Adult and juvenile passage should not be adversely affected.

Comments from agencies

From: Tom Lorz [mailto:lort@critfc.org]
Sent: Tuesday, June 13, 2017 11:19 AM
To: Peery, Christopher A CIV (US) <Christopher.A.Peery@usace.army.mil>
Subject: [Non-DoD Source] Re: Coordination; 17 MCN 10 MOC Temporary Unit Priority Change (UNCLASSIFIED)

I have no issues with this one.

thanks

tom

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Wednesday, June 21, 2017 4:53 PM
To: Peery, Christopher A CIV (US) <Christopher.A.Peery@usace.army.mil>
Cc: Lorz, Tom <lort@critfc.org>; Johnson, Bobby R CIV CENWW CENWD (US) <Bobby.Johnson@usace.army.mil>
Subject: [Non-DoD Source] Re: Coordination; 17 MCN 10 MOC Temporary Unit Priority Change (UNCLASSIFIED)

Chris, I have no issues with this change at all. We will still have plenty of unit flow on the north end for attraction towards the spillway and we won't see temperature issues that would require a different PH priority for awhile, if at all this year. Thanks, Gary

Final coordination results

MOC approved

After Action update

From August 14 to 31, unit 2 was out of service for annual maintenance and to resolve the thrust bearing issue. On August 31 at 2359 hours, the spillway closure began and the

saw tooth unit priority pattern for temperature abatement concluded. At that time, unit 2 was returned to the normal unit priority sequence.

Please email or call with questions or concerns.

Thank you,

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