**OFFICIAL COORDINATION REQUEST FOR**

**NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE -** 17 MCN 06 MOC Fish Pump #2 Testing

**COORDINATION DATE -** May 11, 2017, Updated May 31, 2017

**PROJECT –** CENWW-ODM McNary Dam

**RESPONSE DATE – 19 May 2017**

**Description of the problem:** The Oregon ladder axillary water supply system at McNary Dam contains three electric pumps but has been without fish pump 2 since January 4, 2011. The ladder will maintain criteria with two fish pumps operating but the system has been without a backup in the event fish pumps 1 or 3 failed.

The contractor has almost completed rehabilitation of fish pump 2 and will turn the pump over to project personnel on May 15. On May 31, the fish pump 2 intake and discharge stop logs will be removed, which takes about 10 hours. During stop log removal, blade angles of pumps 1 and 3 will have to be reduced. The ladder would be out of criteria during this time.

Water testing of fish pump 2 will begin 1 June after resistance temperature detectors (RTDs), which have been ordered, are installed. The various tests should take two weeks to complete. While testing pump 2, the blade angles of pumps 1 and 3 will be adjusted as needed to keep the ladder in criteria. An operator will be dedicated to the fish pump house and the fisheries staff will monitor the ladder from the control room at the fisheries systems computer. Vibration testing of pump 2 will occur on June 12 after test equipment is installed. All testing should be completed by June 14, but can be extended an additional week if needed. The contractor is scheduled to leave the project on June 15.

A complication to this process is that the fish pump stop logs can only be moved this one time. The picking eyes on the two full sets of logs have been condemned. Fish pump stop logs cannot be reinstalled until new picking eyes have been mounted. If a fish pump fails after stop logs have been removed, the blade angle on the operating pump(s) have to be reduced so the blades on the failed pump can be adjusted and the brakes set so the blades will not be spun by backflow from the other pump(s). This will also reduce backflow through the inoperable pump. The operators are confident the ladder will remain in criteria with two fish pumps operational and no stop logs installed.

When fish pump 2 returns to service, we would like to remove fish pump 3 from service to begin rehabilitation.

**Type of outage required**

**Impact on facility operation:** Discharge log removal will occur on May 31. Blade angles of pumps 1 and 3 will have to be reduce to insure stop log removal from pump 2. This could take up to 5 hours. The ladder will be out of criteria during this time.

Fish pump 2 water testing from June 1-14 could result in slight drifts out of criteria while the blade angles of pumps 1 and 3 are being adjusted. Adjustments will be made as smoothly and quickly as possible.

**Impact on unit priority:** None.

**Impact on forebay/tailwater operation:** None.

**Impact on spill:** None.

**Dates of impacts/repairs:** May 31 to June 14. Most active days will be May 22, May 23 to June 7.

**Length of time for repairs:** Stop log removal will take 10 hours or less over one work day, 31 May. (Five hours or less each of two days.) Testing will occur 10 hours per day 1-14 June. If running well, fish pump 2 will be allowed to remain operational during test hours.

**Analysis of potential impacts to fish**

1. See Table 1 below for the Oregon ladder 10-year average adult fish passage by species during the time of stop log removal and fish pump testing. The spring Chinook run will be concluding. The summer Chinook and sockeye runs will beginning. The two tables help to split out the two Chinook races. Table 1 has McNary’s Oregon ladder 10-year average fish passage data for May 22 to June 8 for the years 2007 to 2016 as we compiled from the DART website. (http://www.cbr.washington.edu/dart)

Table 1. Oregon Ladder Ten Year Average of Fish/Day Spring Chinook (2007-2016)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| mm/dd | Spring Chinook (Fish/Day) | Spring Jack Chinook (Fish/Day) | Steelhead (Fish/Day) | Wild Steelhead (Fish/Day) | Sockeye (Fish/Day) |
| 31-May | 795 | 269 | 9 | 1 | 2 |
| 1-Jun | 716 | 238 | 8 | 1 | 2 |
| 2-Jun | 670 | 206 | 9 | 2 | 2 |
| 3-Jun | 645 | 197 | 8 | 1 | 8 |
| 4-Jun | 766 | 187 | 10 | 1 | 10 |
| 5-Jun | 956 | 220 | 12 | 3 | 17 |
| 6-Jun | 852 | 217 | 12 | 2 | 25 |
| 7-Jun | 871 | 263 | 12 | 1 | 32 |
| 8-Jun | 882 | 210 | 15 | 1 | 58 |

1. The current spring Chinook and summer steelhead runs are well below the 10-year average. As of May 10, 2017, 1,844 adult and 69 jack spring Chinook have been counted passing McNary. The ten year average passage to date is 44,750 adult and 2,125 jack spring Chinook salmon. To date, 2,533 steelhead total, which includes 758 non-clipped steelhead, have been counted. The ten year average is 6,342 total and 2,103 non-clipped steelhead. We compiled the date from the DART website. (http://www.cbr.washington.edu/dart) This data includes both ladders.
2. The fish counts used for Table 2 below were the 10 year average from May 15 to June 15 divided by the total run ten year average. The table records the percentage of total run of each species effected by the Oregon ladder fish pump 2 stop log removal and testing during this time frame. Again, we compiled the data from the DART website. (<http://www.cbr.washington.edu/dart>) However, from May 16 to 22, no wet testing of the fish pump will occur and testing should be completed by June 7. Therefore, the percentage of fish effect will be less than stated in the table. Nevertheless, this time frame allows for variances in the testing schedule and any issues that may arise.

Table 2. Percent of Total Run Impacted by Fish Pump 2 Testing.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Spring Chinook | Spring Chinook  Jacks | Summer  Chinook | Summer Chinook  Jacks | Combined Steelhead | Sockeye |
| 30.0 | 58.9 | 8.9 | 11.9 | 0.2 | 1.7 |

1. During intake log removal, fish passage could be affected as the intake is near the south powerhouse entrance and along the Oregon shoreline. Notice and vibrations from log removal could potentially affect passage 5 or less hours. During discharge log the removal, there will be reduced attraction flow, which could delay fish passage that day for five hours or less. Both sets of logs will be removed in the afternoon to try to reduce any disturbance of fish passage.

During fish pump 2 wet testing, fish pumps 1 and 3 will be in use and available to supplement flow. However, during blade angle changes, attraction flow could briefly decrease or increase, which could result in the ladder being out of criteria momentarily. The result could cause brief delays in passage, particularly when the blade angles are reduced. All adjustments will be made as quickly and as smoothly as possible to reduce the attraction flow disruptions.

With current fish passage lower than average, delays are a recognized concern.

**Summary statement - expected impacts on:**

**Downstream migrants:** None.

**Upstream migrants:** Minimal.

**Lamprey:** None.

**Comments from agencies**

From: Gary Fredricks - NOAA Federal   
Sent: Wednesday, May 17, 2017 3:10 PM  
To: Peery, Christopher:

Chris, I'm a little confused by the dates on this since the MOC says the work will start on the 15th but then the MOC response date is the 19th. I don't recall discussing this at FPOM on the 11th. In any case, assuming the stop log work will be done in the afternoon as the MOC says, I don't see any concerns for passage and it will be good to have pump 2 running (assuming the testing goes ok). I just hope it doesn't take six years to get pump 3 back.

I'm on annual leave now through the rest of the month so I won't be paying too much attention to emails.

Thanks, Gary

From: Tom Lorz [mailto:lort@critfc.org]   
Sent: Wednesday, May 17, 2017 5:10 PM  
To: Peery, Christopher A CIV (US)

thanks for the update, saw this and like gary was wondering has this work been done or is it scheduled to be done. If it is done the way outlined in the MOC I am fine with it. sooner rather than later date wise not in during the day, the times outlined in the MOC during daytime look good.

From: Peery, Christopher A CIV (US)   
Sent: Thursday, May 18, 2017 9:46 AM  
To: 'Gary Fredricks - NOAA Federal':

The schedule for this testing has been difficult to pin down, which delayed the release of the MOC. The latest schedule I heard was that the intake stoplogs will not be removed until Monday, 22 May, with the rest of the schedule to occur as described.

If that does not occur, we will submit an updated MOC.

From: Johnson, Bobby R CIV CENWW CENWD (US)   
Sent: Thursday, May 18, 2017 2:39 PM  
To: Peery, Christopher A CIV (US):

Chris stated the process accurately. The plan is now for the intake logs to be removed Monday, the 22nd.

I was in a meeting about concept designs for new fish pumps so I apologize for getting back slowly.

Thanks,

Bobby

From: Johnson, Bobby R CIV CENWW CENWD (US)

Sent: Wednesday, May 24, 2017 12:10 PM

To: Peery, Christopher A CIV (US)

Chris,

We have delays. The access plate between the upper and low chamber had to be replaced. A total rebuild. The some of the RTD's were not functional. Thus, the intake and discharge logs will be removed on May 31 and water testing will be delayed about a week.

Thanks,

Bobby

From: Peery, Christopher A CIV (US)

Sent: Thursday, May 31, 2017 11:16 AM

There have been delays in the testing for AWS #2 at McNary Dam. The intake stop logs are being pulled today and (latest word), they will begin removing discharge stop logs today. Please find attached an updated MOC.

Thank you,

Chris

From: Peery, Christopher A CIV (US)

Sent: Thursday, June 01, 2017 7:16 AM

Please note, incorrect subject line was used in previous email. This regards testing of AWS pump 2 at McNary Dam.

Thanks,

Chris

From: Gary Fredricks - NOAA Federal   
Sent: Thursday, June 01, 2017 8:15 AM  
To: Peery, Christopher A CIV (US)

I almost sent you an email on that one.... But since you caught it, Ill hit you with a different gripe. The attached pdf document doesn't allow review of the before and after edits. I think it would if this were a Word document but not in Adobe since Adobe basically freezes the document based on what's on the screen. I know I can spend the time to compare old and new copies but it would sure be nice not to go digging for the old copy. Am I missing something in my Adobe viewer? All the griping aside, I have no issues with the new MOC. Thanks Chris. Gary

From: Peery, Christopher A CIV (US)   
Sent: Thursday, June 01, 2017 8:31 AM  
To: 'Gary Fredricks - NOAA Federal'

I have been removing the old text and showing just the new text in track changes but I can retain both in the future to make it easier to see the changes.

Chris

From: Morrill, Charles (DFW)   
Sent: Wednesday, May 31, 2017 11:24 AM  
To: Peery, Christopher A CIV (US

Hi Chris,

thanks for the MOC update on testing McN AWS pumps and the MFH for IH ...

And ... any progress on APHIS providing Hazing protocol/guidelines for McN yet ...

thanks

Charlie

**Final coordination results**

MOC Approved

**After Action update**

Please email or call with questions or concerns.

Bobby Johnson

Project Fishery Biologist, McNary Dam Phone: (541)-922-2212

Email: [bobby.johnson@usace.army.mil](mailto:bobby.johnson@usace.army.mil)

Or

Denise Griffith

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Email: [denise.s.griffith@usace.army.mil](mailto:denise.s.griffith@usace.army.mil)