CENWW-OD-WM **UPDATED 07/17/2015**

MEMORANDUM FOR THE RECORD 15 MCN 09 MFR Single Fish Pump Operation - Out of Potable Water due failure of Well Pumps #2 and #3.

This MFR supersedes and updates Memorandum of Coordination 15 MCN 09 Single Fish Pump Operation that was emailed to FPOM on July 10, 2015.

SUBJECT: Single Fish Pump Operation at McNary Dam - Out of Potable Water due failure of Well Pumps #2 and #3.

Potable well water is used to cool and lubricate the fish pumps. Potable water Well Pump #3 seized on 07 July. At the time, Well Pump #2 was surging and in manual operation. Well #2 failed at 0430 hours on 09 July. The fish pumps were subsequently connected to raw river water around 0900 hours the same day as there was insufficient potable water to run the pumps. This change restricted McNary Dam to single fish pump operation, thereby reducing attraction water for the Oregon Entrance Weirs.

Expected negative impacts were minimized by configuring entrance weirs for single fish pump operation in accordance with the 2015 Fish Passage Plan, page MCN-23. Operating with one functional fish pump has occurred before. The longest time frame was in 2004, from July 8 to November 26, when the Oregon ladder operated with only one functional fish pump. Recently, the Oregon ladder operated with one fish pump from June 15 at 0937 hours to June 17 at 1524 hours and on June 26, 2015 from 0800 hours to 2220 hours.

On July 10, a submersible pump was hooked to raw water, which supplied enough raw water to allow the operation of two fish pumps (#1 and #3). However single fish pump operation continued through the weekend as both pumps draw from the same filter strainer. This filter strainer was clogging about every 6 – 12 hours causing both pumps to trip offline due to low flow rates. Raw water contains algae and other contaminants that have clogged strainers in the past, and a clogged strainer may cause fish pump motors to burn up and fail for the lack of cooling and lubricating water. Fish pump #1 was operated by itself through the weekend to assess what options were available to prevent clogs and contaminants from shutting down the fish pumps in a two fish pump operation. Once arrangements were made to have fire hydrant water (from the City of Umatilla) added to the potable water tank, the maintenance staff determined that both fish pumps could be operated on potable water for the time necessary to clean the raw water filter before returning both pumps to raw water for gland packing cooling and lubrication. Since this optional cleaning technique seemed to work, fish pump #3 was returned to service at 1150 hours on Monday, July 13, restoring normal 2 pump operation. The Oregon Fishway entrance weirs were returned to their normal configurations at that time.

Intermittent clogging of the raw water filter is occurring as quickly as 30 minutes after the raw water filter is cleaned, which causes one fish pump to trip offline due to low flows. This is likely caused by a random clog of algae/sponge debris from the intake water. If this becomes excessive, a return to return to single fish pump may become necessary. Presently, 2 fish pump operation will continue unless it is deemed unsafe for the equipment to continue operating as such.

Arrangements are currently in progress with a contractor to return Well Pump #2 to service. Well Pump components for Well #2 have been removed and a camera assessment is pending for Monday, 20 July 2015.

Comments from agencies

-----Original Message-----
From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Friday, July 10, 2015 11:42 AM
To: Bailey, John C NWW
Cc: Lorz, Tom; Setter, Ann L NWW; Moody, Gregory P NWW; Paul Wagner; Ritchie Graves - NOAA Federal
Subject: [EXTERNAL] Re: MOC 15 MCN 09 Single Fish Pump Operation

John, This seems more of an MFR than a MOC. As you know this is a really bad time to be down to one pump. The past outages didn't happen at this water temperature (~4 degrees F cooler in 2004). We are already seeing issues with conversion of sockeye to McNary and this will just make that issue worse. How can this be fixed to get the other pump on line and how long will it take? Thanks, Gary

-----Original Message-----
From: Setter, Ann L NWW
Sent: Friday, July 10, 2015 4:38 PM
To: Gary Fredricks - NOAA Federal; Bailey, John C NWW
Cc: Lorz, Tom; Moody, Gregory P NWW; Paul Wagner; Ritchie Graves - NOAA Federal; Peters, Rock D NWD; Feil, Dan H NWD; Langeslay, Mike J NWD; Lear, Gayle HQ @ NWD
Subject: RE: [EXTERNAL] Re: MOC 15 MCN 09 Single Fish Pump Operation (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Gary:

Here is our current update.

We have just gotten a submersible pump hooked up on raw water that will supply enough water to operate two fish pumps. Fish pump 3 has a solenoid problem so tomorrow the solenoid will be taken from fish pump 2 which is OOS, and installed on fish pump 3. Both pumps operate through the same strainer and there have been some issues with the strainer clogging, so they will continue one pump operation thru the weekend and turn on the second pump Monday morning if strainer has not clogged. There is concern that pump motors could burn out due to strainer clogging which is why the solenoid work is not occurring ASAP, and the expected return to service of two fish pumps is Monday AM.

Ann Setter

-----Original Message-----
From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Monday, July 13, 2015 8:20 AM

To: Setter, Ann L NWW
Cc: Trevor Conder - NOAA Federal; Lorz, Tom; Moody, Gregory P NWW; Johnson, Bobby NWW; Bailey, John C NWW
Subject: Re: [EXTERNAL] Re: MOC 15 MCN 09 Single Fish Pump Operation (UNCLASSIFIED)

Ann, We really need to dig into this issue further. I was looking for something else in the FPOM records and found discussions of potable water supply/fish pump problems several years ago. This seems to be a recurring problem for this AWS system. One strainer for both pumps doesn't meet any kind of redundancy requirement. And what about spare parts? We seem to be continually robbing parts off pump two to keep the others going. We'll never get it back if we keep this up. Can someone from the district come to the next FPOM meeting prepared to discuss this system in detail, preferably with some diagrams that provide a detailed outline the system? Time for some in-depth education on this one. Thanks, Gary

-----Original Message-----
From: Zwald, Nicholas C NWW
Sent: Monday, July 13, 2015 12:26 PM
To: Coleman, Dave R NWW; Gersbach, William J NWW; Gross, Kraig M NWW; Johnson, Bobby NWW; Johnson, Richard D NWW; Maldonado, Art T NWW; Maldonado, Richard S NWW; Rincker, Dale M NWW; Roberts, Timothy J NWW; DLL-CENWW-MCNARY CONTROL ROOM
Subject: Fish Pump 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Fish Pump 3 returned to service 1/13/15 11:24. Thank You for all of your help all.

Nick

-----Original Message-----
From: Gersbach, William J NWW
Sent: Monday, July 13, 2015 1:04 PM
To: Setter, Ann L NWW; Bailey, John C NWW; Moody, Gregory P NWW
Cc: Coleman, Dave R NWW; Roberts, Timothy J NWW; Maldonado, Art T NWW
Subject: McNary - Fish Pump Update - FP #s 1 and 3 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All,
Current status is that we now have two fish Pumps in Operation since 1150 today.

We will continue to operate in a two FP operation unless unable to do so.

Thanks for your patience as our Maintenance folks worked to establish an alternate means of generating extra water for Fish Pump Gland water.....kudos out to Tim Roberts and his team.....plus operators too:-)

We are meeting with potential contractors at this time and hope to engage contracting to support Well House 2 Work.....real soon.

More to follow when we have more news.
Thanks,
Bill

Thank you,
William Gersbach
541-922-2253