

MEMORANDUM FOR THE RECORD

SUBJECT: 16JDA01 MFR – JD STS Crane’s Failure and resulting JD Project’s inability to remove failed/broken STSs from the 16 JD Turbines’ Operational Gatewells.

Status of JD STS Crane: The Crane’s electronic controls failed in late October 2016 and the crane has been out of service since. JD Project immediately alerted the COE chain of command of an inability to replace any STSs that are found/ determined failed which is normal and frequent occurrence (at least one STS fails per month) during the routine JBS operations. Additionally, the lack of STS Crane’s prevents the regular, periodic maintenance of JD Turbines, which can’t be dewatered until the STSs are first removed from their operational gatewells. There is no other back up crane available at JD since the E-Crane and portable 70 ton are incapable of handling/ removing STSs.

JD Engineering had quickly started a temporary/ emergency repair planning process; the contract for \$ 200 K was awarded on 11/09 with a target completion of 12/21 -28/ 2016. However, after the main SOW was completed, the contractor had determined that the crane DC Brakes needed to be replaced with AC Brakes for additional \$ 70 K. The new brake was installed by 1/09 and there is a strong chance that the STS Crane will return to service tomorrow, 1/12!

JD Structural Crew will start removing STSs immediately after the STS Crane becomes available. Per FPP the JD STSs are required in service through 12/15; a removal of all 49 STSs takes approximately 2-3 days, weather permitting.

Impacts of STS Crane failure: Following is a chronological list of failed STSs (mesh not rotating or is damaged/torn)

- MU3 – OOS since its STS failed on 11/10/16
- MU9 – OOS since its STS failed on 12/10/16
- MU4 – OOS since its STS failed on 12/10/16
- MU5 – OOS since its STS failed on 12/29/16

All above Turbines were OOS until 12/30/16, when BPA coordinated a permission for their emergency operations on the last on/ first off basis during the winter’s cold weather spells. See the justification by Paul Wagner, NOAA (attached.)

Since the number of adult and juvenile salmonids migrating through JD is typically at its annual lowest in the first half of January, an estimated fish impact from operating four Turbines with failed STSs appears to be minimal if any.

Information collected is provided below:

- A. Species – N/A
- B. Origin – N/A
- C. Length – N/A
- D. Marks and tags – N/A
- E. Marks and Injuries found on carcass – N/A
- F. Cause and Time of Death – N/A
- G. Future and Preventative Measures – **A brand new replacement crane to the tune of at least \$ 5 million is necessary ASAP. (The existing, old and wore out STS Crane has a VERY high chance of failing again and soon!)**

UPDATE: The crane returned to service on 1/15/17. There are still some speed issues to be resolved.

UPDATE 1/23/2017: JD Structural crew worked overtime, on the weekend, under cold/ wintery conditions and all failed JD STSs were removed by COB on 1/21, Saturday. There is still a number of JD turbines in service, with working STSs which are being slated for removal by the end of this week.

Sincerely,

JD Fisheries

Email from Paul Wagner:

-----Original Message-----

From: Paul Wagner - NOAA Federal [mailto:paul.wagner@noaa.gov]

Sent: Thursday, December 29, 2016 14:02

To: Wright, Lisa S CIV USARMY CENWD (US) <Lisa.S.Wright@usace.army.mil>

Cc: Gary Fredricks <gary.fredricks@noaa.gov>

Subject: [EXTERNAL] John Day turbine operation with torn screens

Lisa,

This correspondence is regarding the operation of turbine units at John Day Dam with "torn screens" during the upcoming cold weather period. The Fish passage plan specifies that turbine units with damaged screens are not to be operated during the fish passage season which runs through December 15. After December 15 all screens are normally removed. This year the ability to remove the screens has not been possible because the crane that is required for this operation is in need of repair. The cranes at the other Corps projects are not capable of meeting the needs at John Day Dam. An order has been placed to repair the John Day crane but it will take several weeks for the repairs are complete. Rental options of other cranes to expedite the screen removal process is being pursued as well.

NOAA Fisheries does not object to the operation of the turbines with damaged screens at this time because few juvenile fish are migrating at this time of year. The same holds for adults and the risk to adults is low. We are providing this concurrence for the conditions that apply for this year only on a provisional basis. We also request that these units be placed in the lowest order of operating priority - i.e. last on and first off.

We recognize that our guidance conflicts with what is stated in section 4.2.2.1. in the fish passage plan. However, we believe this section was written to guide operations during the fish passage season, which ended December 15.

If you have questions, please advise.

Paul Wagner

-----Original Message-----

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]

Sent: Thursday, January 19, 2017 7:07 AM

To: Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>

Cc: Lorz, Tom <lort@critfc.org>; Paul Wagner <paul.wagner@noaa.gov>; Zyndol, Miroslaw A CIV CENWP CENWD (US) <Miroslaw.A.Zyndol@usace.army.mil>

Subject: [EXTERNAL] Re: FPOM: Draft January meeting minutes and 17JDA01 MFR update

Erin, A couple of questions on the JDA MFR. I assume, but it doesn't say that the failed screens are being pulled first. Also, what does "speed issues to be resolved" mean? Does this change the screen removal process? The referenced first half of January is over, and we didn't intend for this operation with failed screens to be open ended. Some updates on progress would be good. Thanks, Gary

-----Original Message-----

From: Tom Lorz [mailto:lorz@critfc.org]
Sent: Wednesday, January 18, 2017 2:53 PM
To: Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>; Subject: [EXTERNAL]
Re: FPOM: Draft January meeting minutes and 17JDA01 MFR update

Thanks for the heads up could we get an update on JDA MFR issue. How long did you have to run the units with the damaged screens and have they since been removed. What is the plan for those units going forward and does the project think they can get them fixed for the beginning of next passage season. Also I did not see an end date on this operation but I have to believe this was a short term thing and if this happens again concurrence and approval would be needed again. I also had questions what the speed issues that were mentioned were? Lastly did this go out the FPOM group or was this a Federal Family thing, could not find a notification of this operation prior to it actually going forward.

Response from the COE:

-----Original Message-----

From: Kovalchuk, Erin H CIV USARMY CENWP (US)
Sent: Thursday, January 19, 2017 8:14 AM
To: Gary Fredricks <gary.fredricks@noaa.gov>; Tom Lorz <lorz@critfc.org>
Cc: Mackey, Tammy M CIV USARMY CENWP (US) <Tammy.M.Mackey@usace.army.mil>; Zyndol, Miroslaw A CIV CENWP CENWD (US) <Miroslaw.A.Zyndol@usace.army.mil>
Subject: FW: [EXTERNAL] Re: FPOM: Draft January meeting minutes and 17JDA01 MFR update

Gary and Tom,

Here are the answers to Tom's questions and it addresses the speed issues. The damaged screens will be pulled first but no screens have been pulled yet. Miro will keep the region updated on the crane issues.

One last thing about the coordination of running the damaged screens, it was done by Lisa Wright and not me so it wasn't sent out to FPOM as usual. Miro was on leave that week and not in the coordination process. Tom, I miss understood what you were asking about earlier.

Erin

-----Original Message-----

From: Zyndol, Miroslaw A CIV CENWP CENWD (US)
Sent: Wednesday, January 18, 2017 5:36 PM
To: Kovalchuk, Erin H CIV USARMY CENWP (US) <Erin.H.Kovalchuk@usace.army.mil>
Cc: Grosvenor, Eric G CIV CENWP CENWD (US) <Eric.Grosvenor@usace.army.mil>
Subject: FW: [EXTERNAL] Re: FPOM: Draft January meeting minutes and 17JDA01 MFR update

Erin,

These are my answers to Mr. Lorz's questions:

1. The JD emergency operations of turbines with damaged STSs started on 12/30/16 and has been ongoing since, on the last on/ first off basis during the cold weather snaps/ high demand for power.

2. The damaged STSs will be fixed by 1 April for sure as it is a normal/routine work performed at JD on a regular basis. But the winter maintenance of all 49 STS will be likely behind schedule and it might result in the JD Turbines occasionally forced OOS due to a possible shortage of working, spare screens to replace those failing after 1 April. The JD average failure rate is a minimum of one STS per month or higher assuming that they undergone an intensive winter maintenance ...which obviously will be lacking this year...

3. The slow speed performance is likely a result of some underlying electronic changes made during its recent repairs and it is still under investigation by the contractor, JD Engineering and HDC. The STS Crane is a complex machine with various mechanical and electronic components. It needs to be understood that the current repairs are only a quick, emergency Band-Aid response as the JD STSs crane is badly outdated and wore out. Which necessitates its replacement with a brand new crane, at an estimated cost of at least of \$ 5 million if we desire its dependable operations in the future.

Let me know if you have questions.

Thanks!

MZ