CENWW-OD-McNary 08 **07/22/2020**

MEMORANDUM FOR THE RECORD

SUBJECT: Failure of Spillway Crane 6 on Bay 20, the removal of Spillway Crane 7 from GDACS auto control on Bay 2 and failure of Spillway Gate Hoist drum bearing on Bay 15.

Narrative: 1. Crane 6 on spillway gate 20, failed on July 20. Initially, the bay was open at 2 feet and was part of the spill pattern. The spillway gate cannot be adjusted due to an electrical failure in Crane 6. Due to safety and other concerns, the gate was closed on seal on July 21 and the crane was moved to the south end of the spillway for future repairs. Locating and procuring parts for the crane will require time and a RTS date is unknown. Spill for bay 20 will be distributed throughout the other bays. The Crane 6 issue had been communicated to District biologists.

2. Crane 7 is on spillway gate 2. Due to the failure issue with Crane 6, in order to preserve the functionality of Crane 7, we removed Crane 7 from GDACS Auto-response control. Spill pattern changes occur too frequently in auto response and that is causing too much wear and tear on old equipment that is not designed to operate so often. To reduce risk to a critical EAP response asset, Crane 7 will be adjusted once a day, or as needed, by the control room operator for spill pattern alterations.

3. Initially, the hoist failure on the spillway gate in bay 15 was going to be a separate MFR. However, at this time it seems appropriate to include this issue due to the overall effect on the spill pattern. The hoist issue is a failing drum bearing and has been communicated to District biologists via ESA Weekly Reports number 19 and 20. While preparing for installation of test equipment per MOC 20 MCN 02, the General Maintenance staff found an issue with the pillow block mount for the hoist's north drum bearing in Spillway Bay 15 and requested the bay be closed on July 9 at about 0900 hours. Spillway Bay 15's gate will remain lowered onto seal until the bearing's pillow block is replaced or repaired. The gate cannot be dogged, raised or lowered until the repairs are completed. The flow that would have gone out of bay 15 is being redistributed evenly throughout the remaining bays. The repair parts for the Hoist's north drum pillow block are special order items with an unknown delivery date. To insure the maintenance crews could work safely on Spillway Bay 15 while investigating and removing parts from the hoist, Spillway Bays 14 and 16 were closed IAW HECP procedures on July 13 thru 15 from approximately 0700 to 1800 hours each day.

Location: McNary spillway.

Method: Spillway hoist (Bay 15) and Crane #6 electrical failure (Bay 20) occurred on July 9 and July 20. Crane 7 was removed from GDACs auto control on July 22. Spillway Bay 2 is still spilling IAW spill pattern and Spill for 15 and 20 is evenly distributed through the remaining operating spillbays.

Time Line - Duration: From July 9 and July 20 to unknown dates in the future bays 15 and 20 will be on seal.

A. Species: No fish mortalities occurred. The Spill pattern is somewhat altered. Very little avian activity has been observed downstream of the closed spillway gates.

B. Origin: NA.

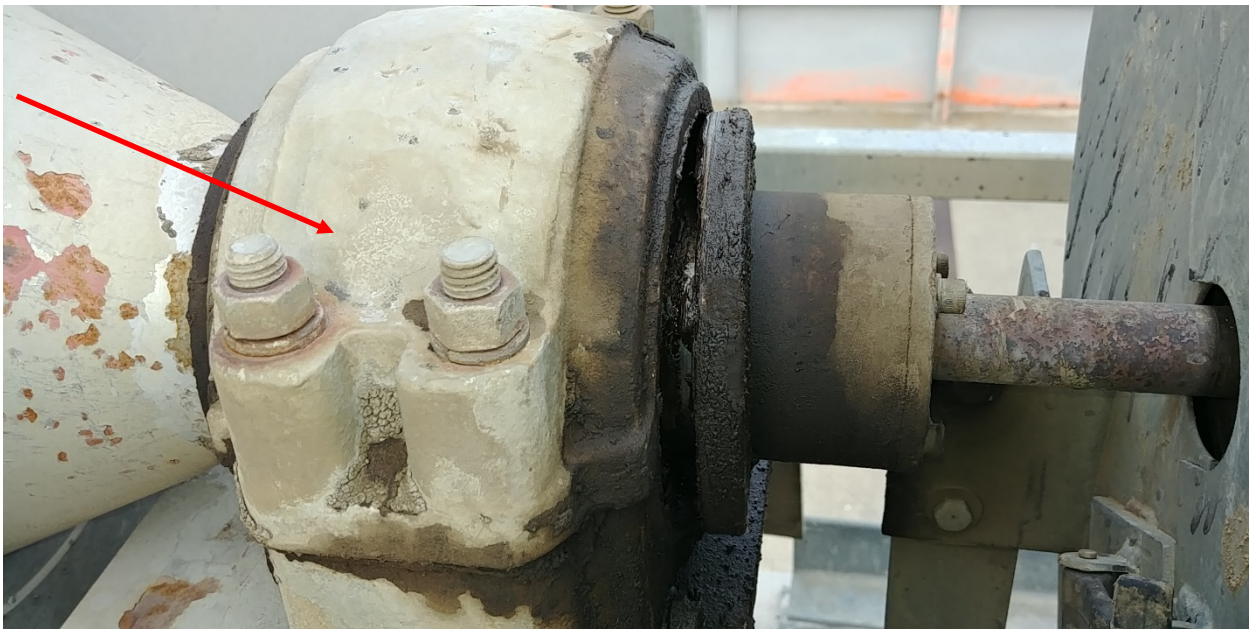
C. Length: NA.

D. Marks and Tags: NA.

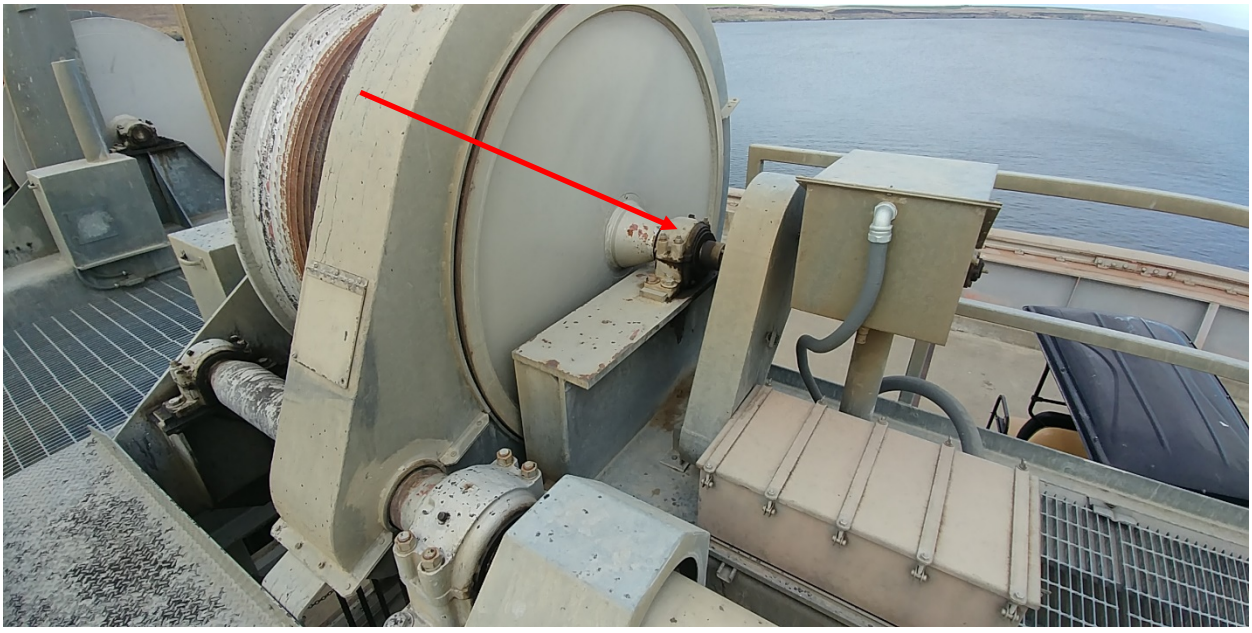
E. Marks and Injuries Found on the Carcasses: NA.

F. Future and Preventative Measures: To reduce risk to Crane 7, a critical EAP response asset, Spillway Bay 2 will be adjusted once a day, or as needed, by the control room operator for spill pattern alterations. Spillway Crane #6 once repaired will be adjusted similarly and both Cranes will be manually adjusted once per day during future spill seasons. Spillway 15 gate hoist repair will occur as soon as parts are available.

G. Photos Taken:



Bay 15 hoist issue.



Hoist before and after parts removed.

Spill pattern bay 15 closed.

Spill pattern when removing hoist parts.

Spill pattern with bays 15 and 20 closed.

Bobby Johnson
Project Fisheries Biologist
McNary Lock and Dam

Comments:

-----Original Message-----
From: Tom Lorz [mailto:lort@critfc.org]
Sent: Wednesday, July 22, 2020 10:22 PM
To: Peery, Christopher A CIV USARMY CENWW (USA)
<Christopher.A.Peery@usace.army.mil>
Subject: [Non-DoD Source] Re: 20MCN07 MFR Spillway Crane 6 & Hoist 15

ok this is lot to track. Have you reached out to some of the spill pattern folks like ryan to get his input on where to put flow. Will take a look what we are suppose to be doing. Can you specify how flow was spread. Also when is bay 20 likely to be back since I think this was the bay we used in the

overshoot study.....We should bring this up at FPOM for an update when we know more. Thanks

tom

-----Original Message-----
From: Peery, Christopher A CIV USARMY CENWW (USA)
Sent: Thursday, July 23, 2020 8:25 AM
To: Tom Lorz <lort@critfc.org>
Cc: Hockersmith, Eric E CIV USARMY CENWW (US)
(Eric.E.Hockersmith@usace.army.mil) <Eric.E.Hockersmith@usace.army.mil>; Ann
<Ann.L.Setter@usace.army.mil>
Subject: RE: 20MCN07 MFR Spillway Crane 6 & Hoist 15

Tom,

Yes, a lot going on at McNary. Looking at the spill over the last few days, about 1 ft opening was added to bays 1-3 and 0.5 ft was added to the remaining open bays. Bay 20 should be set at 2 ft but GDACS is off so I need to confirm this.

Estimated return to operation depends on when parts will be available and the project has not yet got that information. We will pass this information on when it is available.

Chris

-----Original Message-----
From: Peery, Christopher A CIV USARMY CENWW (USA)
Sent: Thursday, July 23, 2020 7:20 PM
To: [FPOM]

Subject: RE: 20MCN07 MFR Spillway Crane 6 & Hoist 15

FPOM,

Please find a modified spill table developed by Ryan Laughery and the project for McNary with bay closures as outlined in MFR 20 MCN 07.

Chris

Table MCN-X. McNary 2020 Summer Spill Pattern for fish passage. (Discharge at forebay elevation 339)

(22 Oct 2013)

SPILLWAY BAY (Gate Opening in feet)																					Total	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Stops	Spill
																							(kcfs)
	4																3					7	12.8
	4																4					8	14.4
	4															2	3					9	16.7
	4															2	4					10	18.3
	4															2	3	2				11	20.6
	4															2	4	2				12	22.2
	4												1			2	4	2				13	24.2
	4												2			2	4	2				14	26.1
	4										1		2			2	4	2				15	28.1
	4								1		1		2			2	4	2				16	30.1
	4						1		1		1		2			2	4	2				17	32.1
	4						1		1		2		2			2	4	2				18	34.0
	4				1		1		1		2		2			2	4	2				19	36.0
	4				1		1		2		2		2			2	4	2				20	37.9
	4	1			1		1		2		2		2			2	4	2				21	39.9
	4	1			1		2		2		2		2			2	4	2				22	41.8
1	4	1			1		2		2		2		2			2	4	2				23	43.8
1	4	1			2		2		2		2		2			2	4	2				24	45.7
1	4	1			2		2		2		2		2			2	5	2				25	47.3
1	4	1			2		2		2		2		2		2	2	4	2				26	49.6
1	4	1			2		2		2		2		2		2	3	4	2				27	51.3
1	4	2			2		2		2		2		2		2	3	4	2				28	53.2
1	4	2			2		2		2		2		2		2	4	4	2				29	54.8
1	4	3			2		2		2		2		2		2	4	4	2				30	56.5
2	4	3			2		2		2		2		2		2	4	4	2				31	58.4
3	4	3			2		2		2		2		2		2	4	4	2				32	60.1
3	4	3			2		2		2		2		2		2	3	4	2				31	58.5
3	4	3			2		2		2		2		2		2	4	4	2				32	60.1
3	4	3			2		2		2		2		2		2	4	5	2				33	61.7
3	4	3			2		2		2		2		2		2	5	5	2				34	63.3
3	4	3	2		2		2		2		2		2		2	5	4	2				35	65.6
3	4	3	2	2	2		2		2		2		2		2	4	4	2				36	67.9
3	4	3	2	2	2	1	2		2		2		2		2	4	4	2				37	69.9
3	4	3	2	2	2	2	2		2		2	2	2		2	3	3	2				38	72.5
3	4	3	2	2	2	2	2	1	2		2	2	2		2	3	3	2				39	74.5
3	4	4	2	2	2	2	2	1	2		2	2	2		2	3	3	2				40	76.1
3	4	4	2	2	2	2	2	2	2		2	2	2		2	3	3	2				41	78.0
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3	4	4	3	2	2	2	2	2	2	2	2	2	2		2	3	3	2				44	83.6
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4	4	6	4	3	4	3	4	3	3	3	4	3	4		3	4	4	3		3	3	72	131.2
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4	4	7	4	4	4	4	4	4	4	4	4	4	4		4	4	4	4		4	4	83	148.8
5	4	7	4	4	4	4	4	4	4	4	4	4	4		4	4	4	4		4	4	84	150.4

Bay 2 set at 4 stops

Bay 15 and 20 OOS