

Fish Passage Plan (FPP) Change Form

Change Form # & Title: 25JDA004 – Main Unit 2 Fixed Blade Range
Date Submitted: December 10, 2024
Project: John Day Dam
Requester Name, Agency: Miller, David – USACE/ODJ
Final Action:

FPP SECTION: Chapter 4 (JDA), Table JDA-7-A. Turbine Ranges for Locked-Blade Units.

JUSTIFICATION FOR CHANGE:

John Day MU2 is now a hydraulically locked (pinned) blade unit. The o-ring between the shaft and turbine hub was leaking oil, and the options were to either pin the unit or have it be out of service for a minimum of 3 years. The blades are fixed at 29 degrees.

For more information, see [MOC 24JDA16](#), emailed to FPOM on September 23, 2024, and coordinated at the October meeting.

PROPOSED CHANGE:

See edits in track changes on the following pages.

COMMENTS:

RECORD OF FINAL ACTION:

Footnote b to Table JDA-7. John Day Dam Turbine Unit Operating Ranges.

b. Units 2, 3, 8, 9, 10, 11, 13, and 14 have locked runner blades and are restricted to an operating range of approximately 17- 19 kcfs, as defined below in **Table JDA-7-A. Unit 4 is OOS for rehab and will be a fully adjustable Kaplan when it returns to service (estimated RTS 2024).**

Table JDA-7-A. Operating Range for John Day Turbine Units with Locked Runner Blades (Non-Adjustable).^a

Project Head (feet)	Unit 3 w/ Blades Hydraulically Locked at 29.1° (Dec 2020) and Unit 2 w/ Blades Hydraulically locked at 29° (Nov 2024)								Unit 8 w/ Blades Welded at 29.4° (March 2017)							
	With STS				No STS				With STS				No STS			
	Lower Limit		Upper Limit		Lower Limit		Upper Limit		Lower Limit		Upper Limit		Lower Limit		Upper Limit	
	MW	cfs	MW	cfs	MW	cfs	MW	cfs	MW	cfs	MW	cfs	MW	cfs	MW	cfs
80	103.5	18,039	107.7	18,769	103.5	17,961	107.7	18,688	106.3	18,435	110.9	19,239	106.3	18,435	110.9	19,239
81	104.8	18,010	109.0	18,728	104.8	17,932	109.0	18,653	107.7	18,413	112.2	19,186	107.7	18,417	112.2	19,190
82	106.1	17,979	110.2	18,685	106.1	17,906	110.3	18,609	109.1	18,392	113.5	19,133	109.1	18,400	113.5	19,141
83	107.4	17,949	111.5	18,648	107.5	17,881	111.6	18,568	110.5	18,371	114.8	19,086	110.5	18,383	114.8	19,098
84	108.6	17,919	112.9	18,616	108.8	17,855	113.0	18,539	111.9	18,350	116.1	19,042	112.0	18,367	116.2	19,058
85	109.9	17,891	114.2	18,589	110.1	17,830	114.3	18,513	113.3	18,328	117.5	19,005	113.4	18,348	117.6	19,025
86	111.7	17,933	115.9	18,615	111.9	17,872	116.0	18,541	115.0	18,355	119.2	19,025	115.1	18,380	119.3	19,048
87	113.4	17,969	117.6	18,643	113.6	17,914	117.8	18,572	116.7	18,381	120.9	19,041	116.9	18,410	121.0	19,068
88	115.1	18,005	119.4	18,676	115.3	17,949	119.5	18,601	118.3	18,404	122.5	19,055	118.6	18,437	122.7	19,086
89	116.8	18,037	121.1	18,704	117.0	17,985	121.3	18,636	120.0	18,427	124.2	19,067	120.3	18,464	124.4	19,102
90	118.5	18,070	122.8	18,736	118.8	18,021	123.0	18,665	121.7	18,448	125.9	19,078	122.0	18,489	126.1	19,117
91	119.8	18,058	124.3	18,743	120.1	18,012	124.5	18,674	122.9	18,411	127.1	19,040	123.2	18,457	127.4	19,083
92	121.1	18,043	125.8	18,750	121.5	18,002	126.1	18,684	124.2	18,375	128.4	19,004	124.5	18,425	128.7	19,051
93	122.4	18,029	127.3	18,755	122.8	17,989	127.6	18,694	125.4	18,341	129.7	18,970	125.8	18,394	130.1	19,020
94	123.7	18,013	128.8	18,762	124.1	17,976	129.1	18,701	126.7	18,306	131.0	18,938	127.0	18,363	131.4	18,993
95	124.9	17,994	130.3	18,770	125.4	17,962	130.6	18,710	127.9	18,271	132.4	18,909	128.3	18,332	132.8	18,968
96	126.5	18,018	131.9	18,782	127.0	17,988	132.3	18,725	129.6	18,294	134.0	18,919	130.0	18,359	134.4	18,982
97	128.1	18,041	133.5	18,797	128.7	18,013	133.9	18,741	131.2	18,317	135.6	18,926	131.7	18,386	136.1	18,993
98	129.8	18,064	135.1	18,813	130.3	18,037	135.6	18,761	132.9	18,337	137.3	18,940	133.4	18,410	137.8	19,010
99	131.4	18,085	136.8	18,837	132.0	18,061	137.3	18,786	134.6	18,359	139.0	18,954	135.2	18,437	139.5	19,028
100	133.0	18,107	138.6	18,868	133.6	18,085	139.0	18,819	136.2	18,376	140.7	18,975	136.8	18,458	141.3	19,053
101	134.6	18,134	140.2	18,890	135.3	18,115	140.7	18,843	137.8	18,395	142.4	18,998	138.4	18,473	142.9	19,072
102	136.2	18,159	141.9	18,915	136.9	18,143	142.4	18,869	139.4	18,411	144.1	19,024	140.0	18,485	144.6	19,095
103	137.9	18,187	143.6	18,938	138.6	18,172	144.1	18,894	141.0	18,427	145.8	19,052	141.6	18,497	146.3	19,119
104	139.5	18,209	145.3	18,967	140.2	18,195	145.9	18,925	142.6	18,443	147.6	19,081	143.1	18,509	148.0	19,143
105	141.1	18,230	147.0	18,997	141.9	18,218	147.6	18,957	144.2	18,456	149.3	19,111	144.7	18,518	149.8	19,170
106	142.3	18,217	148.6	19,030	143.1	18,203	149.2	18,986	145.5	18,447	151.0	19,147	145.9	18,505	151.4	19,202

107	143.4	18,197	150.3	19,064	144.2	18,182	150.8	19,015	146.7	18,434	152.7	19,187	147.2	18,487	153.1	19,238
108	144.5	18,171	151.9	19,097	145.3	18,154	152.5	19,046	147.9	18,415	154.5	19,229	148.3	18,464	154.9	19,276
109	145.5	18,137	153.5	19,132	146.3	18,119	154.1	19,077	149.1	18,393	155.3	19,149	149.5	18,438	155.3	19,149
110	146.5	18,096	155.2	19,168	147.3	18,077	155.7	19,109	150.2	18,365	155.3	18,978	150.6	18,406	155.3	18,978

a. Units with runner blades that are locked at a fixed angle (non-adjustable) are restricted to a smaller operating range until the unit is repaired. Values updated by HDC in May 2022 and June 2023 (Unit 13).