

## **FPP Change Request Form**

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**Change Form # & Title:** 15LMN004 – Low Flow Spill Patterns w/ No RSW  
**Date Submitted:** July 9, 2015  
**Project:** LMN  
**Requester Name, Agency:** Corps NWW  
**Final Action:**

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### **FPP Section:**

Table LMN-9. Bulk Spill Patterns.

### **Justification for Change:**

Currently, spill patterns in Table LMN-9 are defined as low as 8.6 kcfs. However, during extreme low flow conditions, lower spill rates may be required. When spill is less than ~6.8 kcfs, the RSW in Bay 8 must be closed and spill passed via other spillbays.

This situation occurred August 21-31, 2013, and patterns were defined and implemented through in-season coordination with TMT. Considering this situation is likely to re-occur this year, patterns have been developed for the FPP to optimize egress conditions by shifting flow from the RSW in Bay 8 to adjacent Bay 7.

### **Proposed Changes:**

See Table LMN-9 below with new patterns in track changes (Total Spill 1.8 - 6.8 kcfs).

**Table LMN-1. Lower Monumental Dam Bulk Spill Patterns ~~with RSW.~~ <sup>a</sup>**

LMN Bulk Spill Patterns - Gate Stops (#) per Spillbay								Total Stops	Total Spill
Bay 1	Bay 2	Bay 3	Bay 4	Bay 5	Bay 6	Bay 7	Bay 8 <sup>b</sup>	(#)	(kcfs)
						<u>1</u>	<u>CLOSE</u>	<u>1</u>	<u>1.8</u>
						<u>2</u>	<u>CLOSE</u>	<u>2</u>	<u>3.3</u>
						<u>3</u>	<u>CLOSE</u>	<u>3</u>	<u>4.8</u>
	<u>1</u>					<u>3</u>	<u>CLOSE</u>	<u>4</u>	<u>6.6</u>
							<u>RSW</u>	<u>0</u>	<u>6.8</u>
	1						RSW	1	8.6
	2						RSW	2	10.1
	2				1		RSW	3	11.9
	2				2		RSW	4	13.4
	2				3		RSW	5	14.9
	2				4		RSW	6	16.3
	3				4		RSW	7	17.8
	3			1	4		RSW	8	19.6
	3			1	5		RSW	9	21.3
1	3			1	5		RSW	10	23.1
1	1	1	1	1	6		RSW	11	25.4
1	1	1	1	2	6		RSW	12	26.9
1	1	1	2	2	6		RSW	13	28.4
1	1	1	2	4	5		RSW	14	29.6
1	1	1	2	5	5		RSW	15	31.3
2	1	1	2	5	5		RSW	16	32.8
2	1	2	2	5	5		RSW	17	34.3
2	2	2	2	5	5		RSW	18	35.8
3	2	2	2	5	5		RSW	19	37.3
3	3	2	2	5	5		RSW	20	38.8
3	3	2	2	5	5	1	RSW	21	40.6
3	3	2	2	5	5	2	RSW	22	42.1
3	3	2	3	5	5	2	RSW	23	43.6
3	3	3	3	5	5	2	RSW	24	45.1
3	3	3	3	5	6	2	RSW	25	46.8
3	3	3	3	6	6	2	RSW	26	48.5
3	3	3	3	6	6	3	RSW	27	50.0
3	3	3	3	6	6	4	RSW	28	51.4
3	3	3	3	6	6	5	RSW	29	53.1
3	3	3	3	6	6	6	RSW	30	54.8
3	3	3	4	6	6	6	RSW	31	56.2
3	3	4	4	6	6	6	RSW	32	57.6
3	4	4	4	6	6	6	RSW	33	59.0
4	4	4	4	6	6	6	RSW	34	60.4
4	4	4	5	6	6	6	RSW	35	62.1

LMN Bulk Spill Patterns - Gate Stops (#) per Spillbay								Total Stops	Total Spill
Bay 1	Bay 2	Bay 3	Bay 4	Bay 5	Bay 6	Bay 7	Bay 8 <sup>b</sup>	(#)	(kcfs)
4	4	5	5	6	6	6	RSW	36	63.8
4	5	5	5	6	6	6	RSW	37	65.5
5	5	5	5	6	6	6	RSW	38	67.2
5	5	5	6	6	6	6	RSW	39	68.9
5	5	6	6	6	6	6	RSW	40	70.6
5	6	6	6	6	6	6	RSW	41	72.3
6	6	6	6	6	6	6	RSW	42	74.0
6	6	6	6	6	7	6	RSW	43	75.6
6	7	6	6	6	7	6	RSW	44	77.2
6	7	6	6	7	7	6	RSW	45	78.8
6	7	7	6	7	7	6	RSW	46	80.4
6	7	7	7	7	7	6	RSW	47	82.0
7	7	7	7	7	7	6	RSW	48	83.6
7	7	7	7	7	7	7	RSW	49	85.2
7	7	7	7	7	8	7	RSW	50	87.0
7	8	7	7	7	8	7	RSW	51	88.8
7	8	7	7	8	8	7	RSW	52	90.6
7	8	8	7	8	8	7	RSW	53	92.4
7	8	8	8	8	8	7	RSW	54	94.2
8	8	8	8	8	8	7	RSW	55	96.0
8	8	8	8	8	8	8	RSW	56	97.8
8	8	8	8	8	9	8	RSW	57	99.4
8	9	8	8	8	9	8	RSW	58	101.0
8	9	8	8	9	9	8	RSW	59	102.6
8	9	9	8	9	9	8	RSW	60	104.2
8	9	9	9	9	9	8	RSW	61	105.8
9	9	9	9	9	9	8	RSW	62	107.4
9	9	9	9	9	9	9	RSW	63	109.0
9	9	9	9	9	10	9	RSW	64	110.8
9	10	9	9	9	10	9	RSW	65	112.6
9	10	9	9	10	10	9	RSW	66	114.4
9	10	10	9	10	10	9	RSW	67	116.2
9	10	10	10	10	10	9	RSW	68	118.0
10	10	10	10	10	10	9	RSW	69	119.8
10	10	10	10	10	10	10	RSW	70	121.6
10	10	10	10	10	11	10	RSW	71	123.3
10	11	10	10	10	11	10	RSW	72	125.0
10	11	10	10	11	11	10	RSW	73	126.7
10	11	11	10	11	11	10	RSW	74	128.4
10	11	11	11	11	11	10	RSW	75	130.1
11	11	11	11	11	11	10	RSW	76	131.8
11	11	11	11	11	11	11	RSW	77	133.5
11	11	11	11	11	12	11	RSW	78	135.2
11	12	11	11	11	12	11	RSW	79	136.9

LMN Bulk Spill Patterns - Gate Stops (#) per Spillbay								Total Stops	Total Spill
Bay 1	Bay 2	Bay 3	Bay 4	Bay 5	Bay 6	Bay 7	Bay 8 <sup>b</sup>	(#)	(kcfs)
11	12	11	11	12	12	11	RSW	80	138.6
11	12	12	11	12	12	11	RSW	81	140.3
11	12	12	12	12	12	11	RSW	82	142.0
12	12	12	12	12	12	11	RSW	83	143.7
12	12	12	12	12	12	12	RSW	84	145.4
12	12	12	12	12	13	12	RSW	85	147.1
12	13	12	12	12	13	12	RSW	86	148.8
12	13	12	12	13	13	12	RSW	87	150.5
12	13	13	12	13	13	12	RSW	88	152.2
12	13	13	13	13	13	12	RSW	89	153.9
13	13	13	13	13	13	12	RSW	90	155.6
13	13	13	13	13	13	13	RSW	91	157.3
13	13	13	13	13	14	13	RSW	92	159.0
13	14	13	13	13	14	13	RSW	93	160.7
13	14	13	13	14	14	13	RSW	94	162.4
13	14	14	13	14	14	13	RSW	95	164.1
13	14	14	14	14	14	13	RSW	96	165.8
14	14	14	14	14	14	13	RSW	97	167.5
14	14	14	14	14	14	14	RSW	98	169.2
14	14	14	14	14	15	14	RSW	99	171.0
14	15	14	14	14	15	14	RSW	100	172.8
14	15	14	14	15	15	14	RSW	101	174.6
14	15	15	14	15	15	14	RSW	102	176.4
14	15	15	15	15	15	14	RSW	103	178.2
15	15	15	15	15	15	14	RSW	104	180.0
15	15	15	15	15	15	15	RSW	105	181.8

- a. Table defines spill patterns in increments of one gate stop per row. "Total Spill" is calculated as a function of total gate stops at forebay elevation 537.0 ft (based on interim spillway rating table 2 Apr 2009). Patterns in real-time are automatically interpolated as necessary to target desired spill rate at observed forebay elevation.
- b. RSW in Bay 8 = fixed spill of ~6.8 kcfs at forebay elevation 537.0 ft. Raise tainter gate above stop 9 to ensure free surface and debris passage. RSW must be closed for spill < ~6.8 kcfs.

**Comments from others:**

**Record of Final Action:**