# Fish Passage Plan (FPP) Change Request Form

**Change Form # & Title**: 17LWG008 – Units 1 & 2 Priority

**Date Submitted**: 4/21/17; Revised per comments 4/26/17, 5/2/17, 5/11/17 (FPOM)

**Project**: LWG

**Requester Name, Agency**: Rich Hilt, COE LWG and Ann Setter, COE NWW

**Final Action:**

**FPP Section**: Table LWG-5. Unit Priority Order. Table LWG-6. Units 1-3 1% Range.

**Justification**: Refer to MOC 17 LWG 01 and MFR 17 LWG 03 for the specific details of unit 2 maintenance. Unit 2 returned to service as a fixed-blade unit on April 13, 2017. Unit 1 is currently OOS for turbine repair; when it returns to service, it will have full Kaplan capabilities (estimated RTS August 15, 2017).

Unit 2 will require an index test to verify operating conditions. Until index testing is completed, Unit 2 will be run like Unit 1 was when it operated as a fixed blade unit with an operating range of 125–129 MW (17.8–18.4 KCFS based on 100 ft of head in Table LWG-6). Unit 2 index testing is currently scheduled for June 20, 2017, in the afternoon.

With the return to service of Unit 2 with fixed blades and Unit 1 as a fully adjustable Kaplan, the Unit priority order needs to be modified.

**Proposed Change**:

Table LWG-5. Lower Granite Dam Turbine Unit Priority Order.

|  |  |  |
| --- | --- | --- |
| **Season** | **Duration** | **Unit Priority Order** |
| March 1 – December 15Fish Passage Season  | Start Units  | If U1 is available = 1, 3, 4–6 any order, 2**a**If U1 is unavailable = 2**a**, 3, 4–6 any order |
| Stop Units b | 4–6 any order, 3, 2**a**, 1 |
| December 16 – end of February Winter Maintenance Period | Stop/Start Units | Any Order |

**a.** Unit 2 has fixed blades (non-adjustable) and is restricted to a smaller operating range within the 1%. If Unit 1 is unavailable, Unit 2 will be operated first in the priority order for the benefit of adult passage.

**b.** Units will be stopped in reverse priority order except Unit 2 which has fixed-blades and will be run longer to minimize starts/stops and for the benefit of adult passage.

**Comments**: (listed oldest to newest)

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

From: Bill Hevlin - NOAA Federal

Sent: Tuesday, April 25, 2017 10:01 AM

Hi Ann,

In the modified table for Lower Granite turbine operation priority during the fish passage season, in the line for stop units, turbine 2 is the last off, but I was thinking that unit one should be the last off, due it priority for adult passage and ability to vary flow due to restored kaplan status. What do you think?

-----Reply From: Setter, Ann L CIV USARMY CENWW (US), Tue, Apr 25, 2017 at 10:52 AM:

Bill: I agree, looks like someone got an edit mixed up there. Does this look more like what you would find acceptable?

**Table LWG-5. Lower Granite Dam Turbine Unit Priority Order.**

|  |  |  |
| --- | --- | --- |
| **Season** | **Duration** | **Unit Priority** |
| March 1 – December 15Fish Passage Season  | Start Units  | 1, 3, then 4-6 any order, then 2 **a** |
| Stop Units b | 4-6 any order, then 3, 2**b**, 1 |
| December 16 – end of February Winter Maintenance Period | Stop/Start Units | Any Order |

**a.** Unit 2 has fixed Kaplan blades (non-adjustable) and operates in the upper 1% range. The priority order minimizes Unit 2 starts/stops and allows for the longest runtime once Unit 2 is started.

**b.** Stop units in reverse Start order, except run Unit 2 as long as BPA load request and required spill can be met.

-----Reply From: Bill Hevlin - NOAA Federal, Tuesday, April 25, 2017 4:57 PM:

Yes, Ann, that is the correction that made sense to me. Unit one would usually be the last one off because flow through it can be varied and still stay in the 1%, and that it provides the strongest downstream current along the south shore wall.

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

From: Erick VanDyke [mailto:erick.s.vandyke@state.or.us]
Sent: Monday, May 01, 2017 17:13

This change has fixed an increase in powerhouse passage, and as was voiced early in the discussion, was a move in the wrong direction. Can the blade be fixed at the lower 1%. ON this basis not supportive of using unit 2 fixed in the current angle and not supportive of unit 2 being set for the longest run time once started. Supporting modeling has not supported this priority is best for fish survival—including adult passage and SAR over the life cycle. Seems like an undiscussed option could be to recommend not using the fixed blade unit.

FPOM Thursday, May 11, 2017: Unit 2 is in service with fixed blades. Index testing is scheduled for the afternoon of June 20 to determine the actual operating range. Until then, it will be operated in the upper 1%. Unit 1 is being rehabbed to fully adjustable Kaplan and scheduled to return to service August 15. Fredricks, Conder, and Lorz agreed that if Unit 1 is unavailable, Unit 2 should be operated as the first priority unit for adult attraction. Wright will make that revision to the change form and resubmit for July FPOM after Unit 2 index testing is complete. PENDING review at July FPOM.

**Record of Final Action**: