Water Management Plan Final 12-31-09

Project Data - FCRPS (Federal Columbia River Power System)

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| Project | Unit Number | Number of units | Sustained Capacity (MW) | Total Plant (MW) | Normal Full (ft) | Normal Minimum (ft) | Minimum Discharge (kcfs) | Hydraulic Capacity (kcfs) | Ramp Rates |
| Albeni Falls | 1 - 3 | 3 | 16.3 | 49.0 | 2062.5 | 2051 | 4 | 33 | Normal 60 min limit 5 kcfs/hr  Max 60 minute increase or decrease 1 ft/hr Max daily increase 10 kcfs/day  Max daily reduction below 50 kcfs 10 kcfs/day Min daily reduction 50 to 75 kcfs 2 ft/day  Min daily reduction above 75 1 ft/day |
| Bonneville | 1 - 10 | 10 | 60.0 | 1,195.2 | 76.5 | 71.5 | \*\*80 instantaneous 100  daily average | 136  152 |  |
| 11 - 18 | 8 | 76.5 |
| 2-F | 2 | 13.1 | 26.2 |
| Chief Joseph | 1 - 4 | 4 | 88.3 | 2,614.0 | 956 | 950 | Min daily 35 | 219 |  |
| 5 - 14 | 10 | 88.3 |
| 15 - 16 | 2 | 88.3 |
| 17 - 27 | 11 | 109.0 |
| Dworshak | 1 - 2 | 2 | 103.0 | 465.0 | 1600 | 1445 | 1 | 10.5 | From Oct 1 to Sept 30 - At peck 1 ft/hr  From Oct 1 to Nov 15 – The 7-day average release cannot exceed inflow by more than 1,300cfs, except during freshets or emergency power operations. Maximum change in any day shall not exceed 40% of the previous 7-day average release. (WCM 7-05.a.2) |
| 3 | 1 | 259.0 |
| Grand Coulee | 1 - 18 | 18 | 125.0 | 7,079.0 | 1290 | 1208 |  | 280 | Max. forebay (drawdown) change 1.5 ft/day, under most conditions |
| 19 - 21 | 3 | 690.0 |
| 22 - 24 | 3 | 805.0 |
| 3-S | 3 | 10.0 |
| 2-PG | 2 | 50.0 |
| 4-PG | 4 | 53.5 |
| Hungry Horse | 1 - 4 | 4 | 107.0 | 428.0 | 3560 | 3336 | 0.4 | 8.9 | \* |
| Ice Harbor | 1 - 3 | 3 | 103.0 | 693.0 | 440 | \*\*\*437 | 15 Oct – end of Feb  Mar – Jul 9.5 Aug – Nov 7.5 | 106 | Max. rate of change 20 kcfs/hr |
| 4 - 6 | 3 | 128.0 |
| John Day | 1 - 16 | 16 | 155.0 | 2,480.0 | 266.5 | 262.5 (15 Mar – 15 Nov)  262.0 (16 Nov – 14 Mar) | Dec – Feb 12.5 Mar – Nov 50 kcfs | 322 | Max. rate of change 200 kcfs/hr |

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| Project | Unit Number | Number of units | Sustained Capacity (MW) | Total Plant (MW) | Normal Full (ft) | Normal Minimum (ft) | Minimum Discharge (kcfs) | Hydraulic Capacity (kcfs) | Ramp Rates |
| Libby | 1 - 5 | 5 | 121.0 | 605.0 | 2459 | 2287 | 1. instantaneous 2. daily average 3. preferred | 24.1 | \* |
| Little Goose | 1 - 3 | 3 | 155.0 | 930.0 | 638 | \*\*\*633 | 15 Oct – End of Feb  Mar – Nov 11.5 | 130 | Max. rate of change 70 kcfs/hr |
| 4 - 6 | 3 | 155.0 |
| Lower Granite | 1 - 3 | 3 | 155.0 | 930.0 | 738 | \*\*\*733 | 15 Oct – End of Feb  Mar – Nov 11.5 | 130 | Max. rate of change 70 kcfs/hr |
| 4 - 6 | 3 | 155.0 |
| Lower Monumental | 1 - 3 | 3 | 155.0 | 930.0 | 540 | \*\*\*537 | 15 Oct – End of Feb  Mar – Nov 11.5 | 130 | Max. rate of change 70 kcfs/hr |
| 4 - 6 | 3 | 155.0 |
| McNary | 1 - 14 | 14 | 80.0 | 1,120.0 | 340 | 337 | Dec – Feb 12.5 Mar – Nov 50 | 232 | Max. rate of change 150 kcfs/hr |
| The Dalles | 1 - 14 | 14 | 90.0 | 2,052.0 | 160 | \*\*\*\*158 | Dec – Feb 12.5 Mar – Nov 50 | 375 | Max. rate of change 150 kcfs/hr |
| 15 - 22 | 8 | 99.0 |
| 2-F | 2 | 14.0 | 28.0 |

\* - Project ramp rates specified in BiOps (see Water Management Plan)

\*\* - When average weekly inflow is below 125 kcfs, the minimum instantaneous outflow limit is 70 kcfs and the minimum daily average discharge limit is 80% of the weekly average inflow.

\*\*\* - For Lower Snake River Dams: subject to minimum operating pool (MOP) Apr – Aug. See Water Management Plan.

\*\*\*\* - The Dalles Dam minimum is 155 feet but as noted above the normal minimum has been increase to 158 feet in order to ensure adequate depth at the John Day Dam fishway entrance (minimum depth requirement of 8 feet) criteria as described in the Fish Passage Plan.