Flood Risk Management Requirements
Report #1 for Water Year 2023
Issue Date: 09 January 2023

**A. Purpose of Flood Risk Management Requirements.** These requirements provide maximum end-of-month reservoir elevations and/or minimum outflows for flood risk management projects in the Columbia River Basin. These requirements are for use by U.S. Army Corps of Engineers, Bureau of Reclamation, Idaho Power, Energy Keepers, BC Hydro and Bonneville Power Administration for operations planning and include all formally approved deviations to date. Any deviation from the flood risk management requirements herein will require approval from the Chief, Columbia Basin Water Management Division (CBWM) per the Northwestern Division's (NWD) Deviation Policy (NWDR 1110-2-6). Requirements are in accordance with the Columbia River Treaty Flood Control Operating Plan (FCOP) and any project-specific water control manuals, with variations as described below. These flood risk management requirements will be revised and re-issued as new information becomes available.

**B. List of Approved Flood Deviations from Water Control Manuals.**

- Implementation of CRSO EIS operations at Libby (sliding scale measure and modified project flood risk management draft)

**C. Flood Risk Management Requirements**

These requirements have been prepared using the most recent official seasonal volume forecasts. The April-August volume forecast at The Dalles Dam based on the January 2023 official forecast is 72,362 kaf. All other forecasts can be found in Table 2 or at:
http://www.nwd-wc.usace.army.mil/report/colsum/

Table 1 shows the flood risk management elevations, draft and flow limits for the evacuation, holding and refill periods. The Initial Controlled Flow (ICF) based on the January forecast is 259 kcfs. See the FCOP for how the ICF is computed. More details on the values used can be found at:
http://www.nwd-wc.usace.army.mil/report/storcorr/

**D. System Flood Risk Management Refill Requirement Discussion**.

No system refill requirements at this time.

**E. Individual Project Flood Risk Management Requirements Discussion**.

No specific individual requirements at this time.

**Table 1. Flood Risk Management Requirements**

| Project | 31 Jan | 28 Feb | 31 Mar | 15 Apr | 30 Apr[3] | 31 May[3] | 30 Jun[3] | 31 Jul[3] |
|---|---|---|---|---|---|---|---|---|
| MCDB (kaf) [2] | 1146 | 1827 | 2581 | 2581 | 2581 | 1549 | 181 | 0 |
| ARDB (ft) | 1434.2 | 1430.2 | 1425.7 | 1425.7 | 1425.7 | 1431.6 | 1443.4 | 1444.0 |
| DCDB (ft)[5] | 1841.3 | 1815.7 | 1812.4 | 1812.4 | 1812.4 | 1837.2 | 1878.0 | 1892.0 |
| LIB (ft) [4] | 2409.5 | 2404.6 | 2398.8 | 2398.4 | 2397.9 | 2433.4 | 2459.0 | 2459.0 |
| LIB (kcfs) | n/a | n/a | n/a | n/a | n/a | TBD | TBD | n/a |
| HGH (ft) | 3541.7 | 3534.7 | 3526.7 | 3522.6 | 3518.6 | 3550.4 | 3560.0 | 3560.0 |
| HGH (kcfs) | n/a | n/a | n/a | n/a | n/a | TBD | TBD | n/a |
| SKQ (ft) | n/a | n/a | n/a | 2883.0 | n/a | 2890.0 | 2893.0 | 2893.0 |
| ALF (ft) [1] | 2060.0 | 2060.0 | 2056.0 | n/a | 2056.0 | 2062.5 | 2062.5 | 2062.5 |
| GCL (ft) | 1290.0 | 1290.0 | 1282.5 | 1280.3 | 1283.3 | 1286.7 | 1289.9 | 1290.0 |
| BRN (ft) | 2077.0 | 2054.4 | 2062.8 | 2066.7 | 2073.8 | 2076.5 | 2077.0 | 2077.0 |
| DWR (ft) | 1549.5 | 1547.9 | 1561.1 | 1572.3 | 1556.7 | 1586.7 | 1600.0 | 1600.0 |

Notes:
1. Albeni Falls flood risk management elevations are based on readings at the Hope gage.
2. KAF units refer to required flood risk management space (draft) in the reservoir.
3. Flood risk management requirements for May, June and July are based on estimated normal runoff shape. Under certain circumstances, the Refill Guide Curve (also known as Flood Control Refill Curve) procedure may be used to determine when refill is to begin at each project where applicable.
4. Per the Libby Dam WCM, Rule 1 of the VarQ operating procedures, releases will be limited to the hydraulic capacity of the powerhouse to the best extent possible.
5. Per the Duncan Storage Resevation Diagram, Duncan Reservoir is required to achieve its full flood risk management draft requirement of 1807.7 ft by 15 March.

**Table 2. Water Supply Forecasts (Kaf)**

| Project | Forecast Period | Jan | Feb | Mar | Apr | May | Jun | Jul | Current month Forecast % of Normal |
|---|---|---|---|---|---|---|---|---|---|
| MCDB | Apr-Aug | 10326 | | | | | | | 92 |
| ARDB | Apr-Aug | 20936 | | | | | | | 95 |
| DCDB | Apr-Aug | 1946 | | | | | | | 95 |
| LIB | Apr-Aug | 6061 | | | | | | | 100 |
| HGH | May-Sep | 1950 | | | | | | | 110 |
| SKQ[1] | Apr-Jul | 5105 | | | | | | | 83 |
| ALF[1] | Apr-Jul | 9759 | | | | | | | 79 |
| GCL[1] | Apr-Aug | 45777 | | | | | | | 79 |
| BRN[1] | Apr-Jul | 4916 | | | | | | | 96 |
| DWR | Apr-Jul | 2178 | | | | | | | 88 |
| TDA[1] | Apr-Aug | 72362 | | | | | | | 81 |

Notes:
1. Official water supply forecasts for SKQ, ALF, GCL, BRN, DWR and TDA are the ESP 10-day-QPF median values published by the NWRFC on the following days for 2023: Jan 5.

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