Columbia River System Flood Risk Management Requirements
Report #7 for Water Year 2024
Issue Date: 22 May 2024

A. Purpose of Flood Risk Management Requirements. These requirements provide maximum end-of-month reservoir elevations and/or minimum outflows for system 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 system 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.

- Albeni Falls Dam: exceedance of summer pool, ramping rates, TDG limit

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 May 2024 official forecast is 68,320 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. TThe currentControl Flow (CF) based on current hydrology and modeling is 275 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.

Columbia Basin Water Management has declared the initiation of system refill with an ICF date of 11 May per low-flow procedure as summarized in Table 1. During the refill season, end-of-month reservoir elevation targets and control flow may change in response to the shape and timing of the runoff. The 31 May FRM requirements may be updated as needed throughout the month. **Operate projects to end of month elevations rather than trying to maintain a controlled flow (CF)**. Note that flows in the lower Columbia may be lower or higher than the CF during the runoff season.

E. Individual Project Flood Risk Management Requirements Discussion.

No specific individual requirements at this time.

Table 1. Flood Risk Management Requirements

Project	31 Jan	29 Feb	31 Mar	15 Apr	30 Apr[3]	Date Refill Started	31 May[3]	30 Jun[3]	31 Jul[3]
MCDB (kaf) [2]	915	1241	2886	2450	2450	06 May	1037	179	0
ARDB (ft)	1435.9	1434.7	1423.3	1426.8	1426.8	09 May	1438.5	1444.0	1444.0
DCDB (ft)[5]	1844.4	1826.2	1817.2	1829.3	1829.3	04 May	1857.0	1884.3	1892.0
LIB (ft) [4]	2417.6	2423.0	2416.4	2419.9	2419.9	01 May[6]	n/a	n/a	2459.0
LIB (kcfs)	n/a	n/a	n/a	n/a	n/a	-	TBD	TBD	n/a
HGH (ft)	3550.9	3553.2	3553.7	3555.6	3555.6	04 May	n/a	n/a	3560.0
HGH (kcfs)	n/a	n/a	n/a	n/a	n/a	-	TBD	TBD	n/a
SKQ (ft) [8]	n/a	n/a	n/a	2885.0	n/a	-	2893.0	2893.0	2893.0
ALF (ft) [1]	2060.0	2060.0	2056.0	n/a	2056.0	-	2063.5	2063.5	2063.5
GCL (ft)	1290.0	1290.0	1283.3	1283.3	1283.3	10 May	1284.0	1290.0	1290.0
BRN (ft)	2077.0	2055.7	2051.6	2060.8	2069[7]	10 May	2076.0	2077.0	2077.0
DWR (ft)	1557.2	1567.6	1574.0	1580.6	1580.6	04 May	1595.0	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 1829.3 ft by 15 March.
6. Per the Libby Water Control Manual, when the official Libby Water Supply Forecast released at the start of April is less than 6.9 MAF, refill is initiated on May 1.
7. Idaho Power is operating to full powerhouse at Hells Canyon and targeting end of May elevations at Brownlee due to early runoff on the Snake River.
8. SKQ End of May requirement refers to May 27th (Memorial Day).

Table 2. Water Supply Forecasts (Kaf)

Project	Forecast Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Current month Forecast % of Normal	Residual Runoff [2] (%)
MCDB	Apr-Aug	10216	9374	10012	9469	8124			73	87
ARDB	Apr-Aug	19353	18256	19684	18540	15963			72	81
DCDB	Apr-Aug	1870	1771	1888	1730	1694			83	83
LIB	Apr-Aug	5440	4743	5261	5036	5129			84	77
HGH	May-Sep	1270	1176	1302	1279	1142			65	75
SKQ[1]	Apr-Jul	4782	4415	4420	4483	4111			67	60
ALF[1]	Apr-Jul	9116	8605	9381	9326	8145			66	59
GCL[1]	Apr-Aug	44870	44134	48422	46750	42955			74	72
BRN[1]	Apr-Jul	4181	4758	5816	5659	5625			110	48
DWR	Apr-Jul	1881	1740	1894	1865	1677			68	50
TDA[1]	Apr-Aug	69028	67766	73915	71691	68320			77	67

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 2024: Jan 4, Feb 5, Mar 5, Apr 3, May 3, Jun 5.
2. Residual runoff values are applicable starting in April. Residual runoff (%) is the percentage of the current month's seasonal volume forecast that has yet to runoff during the forecast period. For example, 67% of the forecasted April through August runoff volume for TDA has yet to runoff.

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