Flood Risk Management Requirements
Report #3 for Water Year 2019
Issue Date: 08 March 2019

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.
None are currently in effect.

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 March 2019 official forecast is 76,636 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 March forecast is 288 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	31Jan	28Feb	15Mar	31Mar	15 Apr	30 Apr	31 May[3]	30 Jun[3]	31 Jul
MCDB (kaf) [2]	1662	2206	-	3420	3420	3420	2052	239	0
ARDB (ft)	1430.5	1427.3	-	1419.2	1419.2	1419.2	1427.2	1443.3	1444.0
DCDB (ft)	1840.9	1812.5	1807.7	1807.7	1807.7	1807.7	1834.5	1877.3	1892.0
LIB (ft) [4]	2422.2	2436.4	-	2441.3	2441.4	2441.5	-	2459.0	2459.0
LIB (kcfs)	-	-	-	-	-	-	n/a	-	-
HGH (ft)	3548.5	3548.7	-	3545.1	3544.4	3543.7	-	3560.0	3560.0
HGH (kcfs)	-	-	-	-	-	-	n/a	-	-
SKQ (ft)	-	-	-	-	2883.0	-	2890.0	2893.0	2893.0
ALF (ft) [1]	2060.0	2060.0	-	2056.0	-	2056.0	2062.5	2062.5	2062.5
GCL (ft)	1290.0	1290.0	-	1283.3	1283.3	1272.0	1281.2	1289.8	1290.0
BRN (ft)	2077.0	2060.6	-	2049.3	2055.6	2062.6	2074.9	2077.0	2077.0
DWR (ft)	1547.9	1558.6	-	1559.0	1559.8	1559.8	1584.7	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 and June 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. Libby and Hungry Horse refill is guided by their VarQ flows.
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.

Table 2. Water Supply Forecasts (Kaf)

Project	Forecast Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Current month Forecast % of Normal
MCDB	Apr-Aug	10560	11079	10972					100
ARDB	Apr-Aug	21643	22302	21323					97
DCDB	Apr-Aug	1956	2030	2007					100
LIB[2]	Apr-Aug	5639	5318	5478					93
HGH	May-Sep	1533	1500	1580					93
SKQ[1]	Apr-Jul	5123	4845	4560					79
ALF[1]	Apr-Jul	11057	10420	9848					84
GCL[1]	Apr-Aug	55941	51352	48998					86
BRN[1]	Apr-Jul	4383	4160	5863					107
DWR	Apr-Jul	2239	1951	2142					89
TDA[1]	Apr-Aug	83322	75301	76636					88

Notes:

1. Official water supply forecasts for SKQ, ALF, GCL, BRN and TDA are the ESP 5-day-QPF median values published by the NWRFC on the following days for 2019: Jan 4, Feb 5, Mar 5, Apr 3, May 3, Jun 5, and Jul 6.
2. The previous Libby January forecast value of 5721 kaf was updated to 5639 kaf after the conclusion of the government shutdown.

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