DECLARATION OF INITIATION OF SYSTEM REFILL

Flood Risk Management Requirements
Report #6 for Water Year 2017
Issue Date: 27 April 2017

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.
Grand Coulee (GCL): On Monday, April 17, 2017, a request was made by Washington Emergency Management and the Colville Tribes to hold the GCL pool above 1232 feet to keep the Inchelium-Gifford Ferry in service. Runoff in the region near the ferry has resulted in multiple washouts of primary roads which has caused an immediate impact to the local residents in need of access to emergency and medical services. FRM elevations for GCL will be maintained above 1232 feet through the 2017 spring freshet season.

C. Flood Risk Management Requirements
These requirements (shown in Table 1) have been prepared using the most recent official seasonal volume forecasts. The April-August volume forecast at The Dalles Dam based on the April 2017 official forecast is 105,039 kaf. All other water supply 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 April forecast is 368 kcfs and the ICF date has been declared as May 4, 2017. 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 is declaring the initiation of system refill as summarized in Table 1. Note that each reservoir may begin refill on the prescribed date. Until a reservoir's refill date is reached, that reservoir must be no higher than the prescribed 30 April flood risk requirement elevation. During the runoff season, end-of-month reservoir elevation targets and control flow may change in response to the shape and timing of the runoff.

E. Individual Project Flood Risk Management Requirements Discussion.
Dworshak: Dworshak is operating to its refill guide curve. End of April FRM elevation is at 1530 feet.
Libby: Libby is operating at full powerhouse (23.2 kcfs) until futher notice.

Table 1. Flood Risk Management Requirements

Project	31Jan	28Feb	31Mar	15 Apr	Date Refill Starts	30 Apr	31 May[3]	30 Jun[3]	31 Jul[3]
MCDB (kaf) [2]	1662	2810	4080	4080	29 Apr	4080	2448	286	0
ARDB (ft)	1430.5	1422.9	1414.1	1414.1	02 May	1414.1	1425.2	1441.5	1444.0
DCDB (ft)	1839.3	1815.3	1812.8	1807.7	24 Apr	1807.7	1828.8	1872.5	1892.0
LIB (ft) [4]	2396.2	2433.7	2382.1	2325.4	24 Apr	2325.4[4]	Est	Est	2459.0
LIB (kcfs)	n/a	n/a	n/a	n/a	24 Apr	n/a	~15	n/a	n/a
HGH (ft)	3543.8	3549.0	3539.8	3533.6	01 May	3531.3	3546.8	3560.0	3560.0
SKQ (ft)[5]	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	1267.1	1234.0	03 May	1232[6]	1260.9	1289.5	1290.0
BRN (ft)	2077.0	2048.3	2036.0	2024.0	03 May	2012.6	2050.0	2077.0	2077.0
DWR (ft)	1528.3	1531.1	1493.1	1471.1	03 May	1530[7]	1575.0	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 historical 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. Estimated end of April elevation is approximately 2360 feet.
5. Sėliš Ksanka Qĺispė Dam, formerly known as Kerr Dam.
6. Grand Coulee is operating per a deviation request (see discussion above). Minimum pool is 1232 feet.
7. Dworshak is filling on its refill guide curve, with end of April FRM elevation at 1530 feet.

Table 2. Water Supply Forecasts (Kaf)

Project	Forecast Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Current month Forecast % of Normal	Residual Runoff [3] (%)
MCDB	Apr-Aug	11569	10737	10798	11503				98	96%
ARDB	Apr-Aug	23045	21065	21248	22530				100	95%
DCDB	Apr-Aug	2010	1954	1942	2036				99	95%
LIB	Apr-Aug	6861	5583	6783	7654				130	92%
HGH	May-Sep	1828	1489	1691	1769				105	100%
SKQ[1,2]	Apr-Jul	5649	5790	6327	7364				127	86%
ALF[1]	Apr-Jul	11413	11505	12255	14894				126	82%
GCL[1]	Apr-Aug	54930	53656	57336	64955				114	88%
BRN[1]	Apr-Jul	4801	5327	7560	10845				198	71%
DWR	Apr-Jul	3055	2541	2867	2984				122	75%
TDA[1]	Apr-Aug	84945	82821	92337	105039				120	84%

Notes:
1. Official water supply forecasts for SKQ (KERM), ALF, GCL, BRN and TDA are the ESP 5-day-QPF median values published by the NWRFC on the following days for 2017: Jan 5, Feb 3, Mar 3, Apr 5, May 3, Jun 5.
2. Sėliš Ksanka Qĺispė Dam, formerly known as Kerr Dam.
3. Residual runoff values are applicable beginning 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, 92% of the forecasted April through August runoff volume for Libby has yet to runoff.

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