



Secretary Deb Haaland  
U.S. Department of Interior  
1849 C Street, N.W.  
Washington, D.C. 20240

August 12, 2024

Re: Kerr FERC Project No. 5

Dear Secretary Deb Haaland,

In accordance with Article 60 of the Sèliš Ksanka Qlispè (formerly Kerr) Project license, Energy Keepers, Inc. (EKI) submits for filing the attached drought management plan (“the Plan”) for Flathead Lake. Article 60 of the Project license states:

The licensees, in consultation with the U.S. Army Corps of Engineers, the Bureau of Reclamation, the Bureau of Indian Affairs, and the Montana Department of Environmental Quality, shall develop and implement a drought management plan for Flathead Lake, which shall be filed with the Secretary. The drought management plan shall include, but not be limited to, provision for re-evaluation and adjustment of Flathead Lake flood control requirements and other provisions necessary to facilitate compliance with lower Flathead River minimum instream flow requirements designated by the Secretary. The Secretary reserves the right to reject, modify, or otherwise alter the drought management plan, in whole or in part.

Consultation on the Plan was completed with the U.S. Army Corps of Engineers, the Bureau of Reclamation, the Bureau of Indian Affairs, and the Montana Department of Environmental Quality. Additionally, because the Project is located within the Flathead Indian Reservation, EKI conducted consultation on the Plan with the Confederated Salish and Kootenai Tribes’ Natural Resources Department, the agency with primary regulatory authority for water quality and other environmental requirements within the Reservation.

The Plan describes how EKI coordinates adjustments to the flood risk management requirements to maintain the FERC license downstream minimum flows during drought conditions. Furthermore, the Plan is consistent with how the project was operated during the dry water conditions in 2024, and meets all requirements of Article 60. Accordingly, the Plan does not propose deviations or seek approval from the Secretary to deviate from any flow requirements or

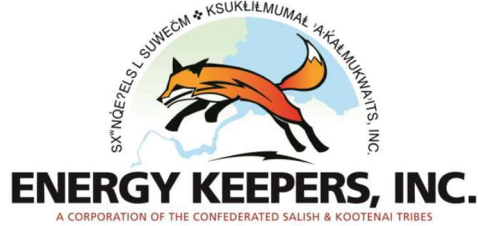
other conditions requiring Secretarial approval under Section 4(e) of the Federal Power Act as set forth in Articles 55-58 of the license.

Respectfully Submitted,



Brian Lipscomb | Energy Keepers, Inc.  
Chief Executive Officer  
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[brian.lipscomb@energykeepersinc.com](mailto:brian.lipscomb@energykeepersinc.com)

cc: [Bryan.Mercier@bia.gov](mailto:Bryan.Mercier@bia.gov)  
[Jennifer.Frozena@sol.doi.gov](mailto:Jennifer.Frozena@sol.doi.gov)



## **Energy Keepers, Incorporated Drought Management Plan for Flathead Lake and Seli'š Ksanka Qlispe' Dam**

**Definition:** A “drought” for use in the Flathead Lake Drought Management Plan is defined as when the Northwest River Forecast Center (NWRFC) water supply volume forecast for April to September runoff at Flathead Lake is below the 20<sup>th</sup> percentile for the NWRFC statistical period of record. The statistical 30-year period of record is currently 1991 – 2020, for which the 20<sup>th</sup> percentile value is 5,140 thousand acre-feet (KAF). See technical appendix (Appendix C) describing the historical water supply information for inflows into Flathead Lake and the drought definition.

### **Background:**

Energy Keepers, Incorporated (EKI), is a federally chartered corporation created and wholly owned by the Confederated Salish & Kootenai Tribes (CSKT) of the Flathead Reservation, pursuant to Section 17 of the Indian Reorganization Act of 1934. CSKT and EKI are the co-licensees of FERC Project No. 5, the Seli'š Ksanka Qlispe' Project (SKQ) located on Tribal Land 6 miles below the natural outlet of Flathead Lake on the Lower Flathead River. CSKT, with their wholly owned Section 17 Corporation, EKI, are the only federally recognized Indian tribe that solely owns a FERC licensed project.

Article 43 of the License authorizes the Licensee to “regulate Flathead Lake between elevations 2883 and 2893 in such a manner as will make not less than 1.219 million-acre feet of storage capacity available to the Licensee.” However, the regulation of the storage shall be in accordance with the Memorandum of Understanding with the U. S. Army Corps of Engineers (USACE MOU). The USACE MOU (Appendix A) establishes flood risk management evacuation requirements and maximum refill objectives for Flathead Lake. The level of Flathead Lake will be raised to an elevation of 2890 ft by Memorial Day and refill will be achieved by June 15<sup>th</sup> considering the flood potential still existing in the river basin above the lake as determined by USACE.

Article 56 establishes minimum instream flow requirements for the lower Flathead River, downstream of SKQ. During low water years, meeting the minimum instream flow requirements with a maximum elevation of 2890 ft by Memorial Day and maximum elevation of 2893 ft for June 15 may impact the ability for the Licensee to exercise their authorization to store 1.2 million-acre feet (MAF) between elevations 2883 and 2893 feet to refill.

Article 60 of the License calls for a Drought Management Plan that “.... shall include, but not be limited to provisions for re-evaluation and adjustment of Flathead Lake flood control and other provisions necessary to facilitate compliance with lower Flathead River minimum instream flow

requirements designated by the Secretary. The Secretary reserves the right to reject, modify, or otherwise alter the drought management plan, in whole or in part.”

Since taking over the SKQ project EKI has successfully achieved all license authorizations for reservoir storage while meeting requirements for the lower Flathead River minimum instream flows. EKI achieved these targets even in the low runoff water year (WY) 2023<sup>1</sup> where the Lake was filled to 2892.8’MSL on June 14, 2023. EKI achieves this by:

1. Not drafting the project below 2888 feet by December 31;
2. Coordinating with the Army Corps of Engineers to update flood risk management requirements and refill operations<sup>2</sup> for licensed minimum Flathead River flows and Lake level to assure 1.2 MAF of authorized reservoir storage is attained through maximum retention of available runoff; and,
3. EKI meets Article 68’s additional requirement of drafting the lake by the end of October to 2891’MSL.

### **EKI Modeling Procedure for the Flathead Basin:**

This document formalizes the Licensees proactive management with the USACE to adjust the maximum elevations to maintain the minimum instream flow requirements in light of specific water supply conditions. There are numerous dam and reservoir projects in the Columbia River basin and its tributaries that are operated by Federal and non-Federal entities in the United States and Canada. USACE coordinates the storage reservoir flood risk management requirements for the Columbia River basin. USACE and the Licensees coordinate throughout the year and frequently through the spring freshet season every year to facilitate compliance with the MOU, minimum instream flow requirements, and reservoir storage authorizations. Like the other major hydro projects in the Pacific Northwest, Energy Keepers plans the operation of SKQ using a stochastic method for understanding water supply, ranges, likelihoods, and variability.

### ***Mid-term and long-term Stochastic Planning:***

The Northwest River Forecast Center (NWRFC) produces streamflow forecasts for the Columbia River basin and its tributaries including the Flathead River sub-basin. The official streamflow forecasts began incorporating Ensemble Streamflow Prediction (ESP) methodology in 2012. They start with the initial basin conditions such as current soil moisture content and snowpack. Then they overlay a 10-day Quantitative Precipitation Forecast (QPF). For the time horizon

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<sup>1</sup> FERC conducted a review of summer 2023 operations and communicated the results to EKI in a letter on February 5, 2024. FERC concluded that EKI complied with the operational requirements of the license.

<sup>2</sup> U.S. Army Corps of Engineers, Northwestern Division Regulation No. 1110-2-6



beyond 10 days, they use a collection of historic meteorological sequences to forecast a distribution of possible forward water supply and streamflow scenarios. These data sets are the industry standard for water management planning. They are used to determine broad water management objectives and regional requirements such as:

- Flood Risk Management
- Variable Draft Limits (discretionary elevation guidance to protect the ability to meet reservoir refill objectives and downstream flow objectives)
- Flow Augmentation for downstream fisheries
- Minimum flow requirements
- Fisheries operations

*SKQ Stochastic Modeling Procedure for the Flathead Basin:*

1. Initialize model with the most recent elevations for Hungry Horse<sup>3</sup> and SKQ Dam
2. Retrieve all ESP streamflow trace forecasts for the following gauges:
  - a. HHWM8 (Hungry Horse), FCFM8 (North Fork Flathead-Near Columbia Falls), WGCM8 (Middle Fork Flathead-Near West Glacier), SRLM8 (Stillwater-Near Lawrence Park), WHRM8 (Whitefish-At Mouth), and SWRM8 (Swan-Near Big Fork).
3. Regulate, using monthly objectives, both Hungry Horse and SKQ Dams based on operational targets and constraints (e.g. SKQ FERC license, Columbia River System Operations Environmental Impact Statement operations for HGH, etc....)
4. Simulate each water year with the same initial conditions, constraints, and targets.
5. Analyze results to determine the exceedance of SKQ meeting FERC requirements pertaining to Articles 43, 56, 57, and 58.
6. Between January through April, if the 3-day average NWRFC median accumulated April to September Flathead Lake runoff volume forecast is less than 5,140 KAF then the Drought Management Plan will be activated. EKI will initiate coordination with the USACE on possible flood risk management deviations and refill operations<sup>4</sup> (Appendix B). See the technical appendix (Appendix C) describing the historical water supply information for natural inflows into Flathead Lake. The expectation is that drought conditions will fall under the unplanned deviation request and will not occur frequently enough to require a change to the water control manual for SKQ project. If precipitation conditions improve and the modeling results indicate a greater than 20% probability of meeting the instream flow requirements and refill then the Drought Management Plan will be deactivated by EKI communicating to the USACE and an appropriate in-season flood risk management elevation will be determined.

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<sup>3</sup> Hungry Horse is operated by the Bureau of Reclamation and releases from the project flow from the South Fork of the Flathead River to the mainstem upper Flathead River, eventually reaching Flathead Lake

<sup>4</sup> U.S. Army Corps of Engineers, Northwestern Division Regulation No. 1110-2-6

### ***Short-term planning: Deterministic Planning***

The Northwest River Forecast Center produces daily resolution 120-day forecasts referred to as the Single Trace Procedure (STP) that are published weekly. They also produce 6-hour resolution, 10-day forecast that are published daily. These forecasts are used by regional water managers for formulating short to medium-term operation plans for rivers and reservoirs in the Northwest.

#### *SKQ Deterministic Modeling Procedure for the Flathead Basin:*

1. Initialize daily model with the most recent elevations for SKQ Dam
2. Retrieve 120-day STP forecast and overlay the 6-hour resolution, 10-day forecast for the SKQ Dam forecast point (KERM8)
3. Adjust the inflow forecast if needed for any Hungry Horse near-term operational changes coordinated by the Bureau of Reclamation after the weekly published forecast.
4. Simulate, in daily increments, SKQ Dam based on operational targets and constraints.
5. Between mid-February through April, if the water supply volume forecast and stochastic modeling processes activate the Drought Management Plan the near-term deterministic results will be analyzed with the stochastic modeling. EKI will coordinate with the USACE on possible flood risk management deviations for the lake levels to be higher than 2883 feet by April 15<sup>th</sup> and will fill higher than 2890 ft by the end of May if allowed by USACE assessment of basin and system flood risk through their deviation procedure.

These modeling processes are run frequently as streamflow forecasts are updated during the spring freshet as temperature and precipitation impacts the magnitude and duration of higher stream flows. Although this document focuses on the spring freshet flood risk management and refill period, EKI uses this modeling process year-round to make risk-informed operational decisions. This year-round proactive approach is the best scientific risk informed water management practice to facilitate compliance with lower Flathead River minimum instream flow requirements designated by the Secretary.

**Appendix A: U.S. Army Corps of Engineers, Memorandum of Understanding for  
Regulation of Flathead Lake as Amended**

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE MONTANA POWER COMPANY AND CORPS OF ENGINEERS, U. S. ARMY  
RE: REGULATION OF FLATHEAD LAKE

This Memorandum of Understanding made this 31st day of May, 1962, by and between The Montana Power Company and the Division Engineer, North Pacific Division, Corps of Engineers, U. S. Army,

W I T N E S S E T H :

WHEREAS, The Montana Power Company (hereinafter called the "Company") is the licensee for the Kerr hydroelectric development located on the Flathead River approximately five miles below the outlet of Flathead Lake, Montana, which license is designated as Federal Power Commission Project No. 5, and

WHEREAS, the Company is authorized by said license to regulate the levels of Flathead Lake between elevations 2883 and 2893 feet, USGS datum and

WHEREAS, the United States Government maintains and operates the Hungry Horse project on the south fork of the Flathead River upstream from Flathead Lake, and

WHEREAS, the parties hereto desire to establish procedures and principles for the regulation of Flathead Lake in the interests of flood control downstream therefrom:

NOW, THEREFORE, the parties hereto agree as follows:

(a) The Company will withdraw storage from Flathead Lake so as to endeavor to reach a lake level at Polson, Montana of approximately 2883 feet on or about April 15. It is understood that in order to accomplish this the

releases from the Government's Hungry Horse storage reservoir will have to be coordinated and scheduled so as to reduce the inflow into Flathead Lake.

It is further understood that the natural channel restriction at the outlet of Flathead Lake, near Polson, Montana, reduces the flows at low lake levels. It is also understood that natural floods in the past, unaffected by any regulation, have exceeded an elevation of 2893 feet.

(b) As the inflow increases, the level of Flathead Lake rises naturally due to the channel restriction at the outlet of the lake and the lake level is not greatly affected by a regulation of the forebay elevation at Kerr Dam at 2882 feet or lower, so that maintaining this elevation or a lower elevation is acceptable for flood control needs. The Chart "Backwater Conditions Flathead Lake for Varied Flows and Stages at Kerr Dam," File No. CF-3-2.2-2.6 dated October 1961, attached hereto, supports this operating procedure.

(c) As inflows to Flathead Lake continue to increase, the lake level continues to rise and at about elevation 2886 the outlet capacity and head are adequate for full power generation; with a continuing rise in a moderate or major flood year the gates at Kerr Dam will gradually be opened so that free flow conditions may prevail. In years when a minor flood is forecast, the Company will operate the spill-gates in a manner it deems necessary to fill the lake to elevation 2893 by the end of the refill period.

(d) The spill-gates at Kerr Dam will not be closed until after the danger of exceeding elevation 2893 has passed. It is recognized that due to natural flows this elevation may be exceeded even with the spill-gates at Kerr Dam fully opened. The control of the spill-gates will be determined by estimates of the hydrologic situation as the season progresses, and a chart entitled "Curves of Remaining Potential for Peak Inflow to Flathead Lake, Montana," dated April 24, 1961, with supporting explanation attached hereto,

is tentatively accepted as a means of judging this criterion. After it has been tested against floods of varying degrees of severity, said chart may be adjusted.

During an actual flood, when the best engineering judgment indicates that said chart is incorrect, its use will be suspended and the regulation will proceed as agreed upon between the Company and the Corps of Engineers. When such suspension appears necessary and is imminent the Company will notify the North Pacific Division of the Corps of Engineers.

(c) The parties will cooperate in the exchange of data and in the regulation of Flathead Lake levels in the interest of flood control consistent with the requirements of Federal Power Commission license for Project No. 5.

The procedures and principles herein set forth shall be followed unless modified by mutual consent to meet changed conditions, until terminated by either party on one year's written notice to the other.

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Understanding the day and year first above written.

CORPS OF ENGINEERS

By W. W. Lapsley  
The Division Engineer  
U. S. Army Division, North Pacific  
Portland, Oregon

APPROVED AS TO FORM  
J. C. Hauck ATTORNEY  
JUL 6-11-62

THE MONTANA POWER COMPANY

By Sam B. Chase  
Vice President

CONTENTS APPROVED  
R. M. Bell  
JUL 11 1962

COPY

*The* MONTANA POWER COMPANY

GENERAL OFFICES  
ELECTRIC BUILDING  
BUTTE, MONTANA

October 1, 1965

Division Engineer  
U. S. Army, North Pacific Division  
Corps of Engineers  
210 Custom House  
Portland 9, Oregon

Re: Regulation of Flathead Lake

Dear Sir:

In accordance with the conclusions reached at the meeting in Missoula, Montana, September 28, 1965, of representatives of the Corps of Engineers, the Federal Power Commission, the Flathead Lake Citizens' Groups, and The Montana Power Company, it is proposed that the Memorandum of Understanding between the Corps of Engineers and The Montana Power Company, dated May 31, 1962, shall be amended by the insertion before the last paragraph thereof of a new section, as follows:

"(f) The level of the Flathead Lake shall be raised to elevation 2890 feet by Memorial Day. The lake will then be raised as rapidly and early thereafter as possible to reach 2893 feet taking into account the flood potential still existing in the river basin above the lake as determined by the Corps of Army Engineers. Should the potential flood condition subside then the filling of the lake will be accelerated so that the lake reaches the 2893 foot level by June 15."

As so amended, the said agreement of May 31, 1962, will be submitted to the Federal Power Commission for approval and shall constitute the flood control requirements of Article 21 of the Federal Power Commission license for Project No. 5.

If the foregoing is in accordance with your understanding,

Division Engineer

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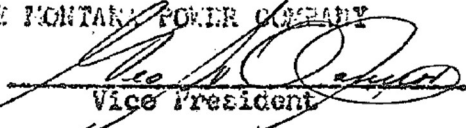
October 1, 1965

will you please endorse your approval on the enclosed copy of this letter and return it to us.

Very truly yours,

THE MONTANA POWER COMPANY

By

  
Vice President

The foregoing is accepted and agreed to this \_\_\_\_\_ day of October, 1965.

CORPS OF ENGINEERS

By

\_\_\_\_\_  
The Division Engineer  
U.S. Army, North Pacific Division

cc: Messrs. O'Connor, Ball, McElwain, Gregg



UNITED STATES OF AMERICA  
FEDERAL POWER COMMISSION

Before Commissioners: David S. Black, Acting Chairman; L. J. O'Connor, Jr.,  
Charles R. Ross, and Carl E. Page.

The Montana Power Company ) Project No. 5

ORDER APPROVING AGREEMENT AND PRESCRIBING PRINCIPLES AND  
PROCEDURES FOR REGULATION OF FLATHEAD LAKE

(Issued February 24, 1966)

On May 31, 1962, The Montana Power Company, licensee for the Kerr hydroelectric development, Project No. 5, on the Flathead River in Montana, and the Corps of Engineers entered a memorandum of understanding which set forth principles and procedures for regulation of Flathead Lake, the storage reservoir of the Kerr development, in the interests of flood control. The agreement, as amended on October 15, 1965, was filed on October 19, 1965, for approval by the Commission under Article 21 of the Kerr license, providing:

The operations of the Licensee, in so far as they affect the use, storage, and discharge from storage of the water of Flathead Lake, shall at all times be controlled by such reasonable rules and regulations . . . as the Federal Power Commission may prescribe in the interests of flood control and the fullest practicable utilization of the waters of Flathead River and Clark Fork for power, irrigation, and other beneficial uses.

The amended agreement provides in general that: (1) The Licensee and the Corps of Engineers will cooperate in exchanging data and coordinating operations for flood control. (2) Conditions permitting, the lake will be drawn down to elevation 2883 feet, the minimum level under the license, by April 15th and will be raised to elevation 2890 feet by Memorial Day (May 30th) and to elevation 2893 feet, the maximum level under license, by June 15th. (3) When the lake reaches elevation 2885 feet, in a moderate or major flood year, the Licensee will gradually open its spill-gates to maintain free flow and will not close the gates until after the danger of exceeding elevation 2893 feet has passed.

The amended agreement has been endorsed by both the Flathead Lakers, Inc., an association of lakeside residents who are interested in having the lake level brought up to the maximum under license as soon in the

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recreation season as possible, and the Upper Flathead Valley Flood Control Association, an organization of farm owners at the upper end of the lake who are interested in having the lake level kept down to prevent inundation of their lands by late floods. At a conference held in Missoula, Montana, on September 28, 1955, attended by representatives of these two landowners' groups, the licensee, the Corp of Engineers, and the Commission, various differences were settled, and the terms of the settlement were incorporated into the agreement by the amendment of October 15, 1965.

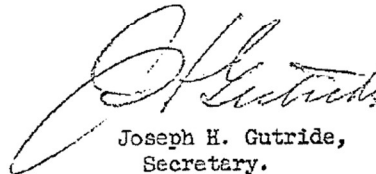
The Commission finds:

The memorandum of understanding of May 31, 1962, as amended October 15, 1965, between the Montana Power Company and the Corps of Engineers provides satisfactory principles and procedures for regulation of Flathead Lake in the interest of flood control, power, recreation, and other beneficial public uses.

The Commission orders:

Until further order of the Commission, the principles and procedures for regulation of Flathead Lake contained in the aforesaid memorandum of understanding are approved and are prescribed under Article 21 of the license for the Montana Power Company's Kerr development, Project No. 5.

By the Commission.



Joseph H. Gutride,  
Secretary.

**Appendix B: U.S. Army Corps of Engineers, Northwest Division Regulation No. 1110-2-6  
for Deviation Requests for Approved Water Control Manuals**

DEPARTMENT OF THE ARMY  
U.S. Army Corps of Engineers, Northwestern Division  
P.O. Box 2870  
Portland, OR 97208-2870

\*DR 1110-2-6

CENWD-PD

Division Regulation  
No. 1110-2-6

Engineering and Design  
DEVIATION REQUESTS FOR APPROVED WATER CONTROL MANUALS

1. Purpose. This policy provides guidance concerning deviations from approved water control manuals (WCMs), water control plans (WCPs) and delegates deviation approval authority to the Chief, Columbia Basin Water Management Division (CBWMD) or Chief, Missouri River Water Management Division (MRWMD) for projects within assigned areas of responsibilities. All deviations that are considered sensitive in nature or that have regional impacts or that are nationally significant actions are coordinated with the Division Engineer. Per ER 1110-2-240, all deviations should be coordinated with the Division's Water Control Manager, the Division's Dam Safety Officer (DSO), and the District's DSO. This guidance also describes the circumstances when a deviation request is required and establishes the investigation, evaluation, and coordination that must be conducted to support a deviation from the approved WCM/WCP. For this document, a WCM encompasses all of a project's technical reservoir regulation criteria contained within the WCM and included in the WCM's Water Control Plan (WCP) and the Drought Contingency Plan. The reservoir regulator will investigate, evaluate, and describe the proposed deviation to ensure that the fulfillment of project authorized purposes is not significantly affected. Permanent changes to WCMs will be processed in accordance with ER 1110-2-240.

2. Applicability. This guideline is applicable to the Northwestern Division (NWD):

- a. District Reservoir Control Centers (RCCs)
- b. NWD Regional RCCs for the Missouri River and the Columbia Basin
- c. Corps hydro projects
- d. Non-Corps hydro projects where reservoir space is allocated for flood risk management or navigation.

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.

NWDR 1110-2-6• 20 June 2023

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3. Distribution Statement. Approved for dissemination throughout NWD. Distribution is unlimited.

4. References.

a. Section 7 of the Flood Control Act approved 22 December 1944 (58 Stat. 890; U.S.C. 709)

b. Section 9 of Public Law 43-83d Congress (68 Stat. 303)

c. The Federal Power Act, approved 10 June 1920, as amended (41 Stat. 1063, 16 U.S.C. 791 (a)).

d. The Fish and Wildlife Coordination Act of 1958, Public Law 85-263.

e. The Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500 (86stat. 816, 33 U.S.C. 1251).

f. 33 CFR Part 208, Sec 208.11, Regulation for use of Storage Allocated for Flood Control or Navigation and/or Project Operation at Reservoirs subject to Prescription of Rules and Regulations by the Secretary of the Army in the Interest of Flood Control and Navigation (43 – FR – 47184).

g. ER 1110-2-240 Water Control Management.

h. ER 1110-2-1400 Reservoir/Water Control Management.

i. ER 1110-2-8156 Preparation of Water Control Manuals.

j. EM 1110-2-3600 Management of Water Control Systems.

k. NWDR 1165-2-2 Water Resource Policies and Authorities, Water Management Responsibilities.

5. Records Management Requirements. The records management requirement for all record numbers, associate forms and reports required by this regulation are addressed in the Army Records Retention Scheduled- Army (RRS-A). Detailed information for all related record numbers, forms and reports is located in ARIMS/RRS-A at <https://www.arims.army.mil>. If any record numbers, forms, and reports are not current, addressed and/or published correctly in ARIMS/RRS-A, see DA Pam 25-403, Guide to Recordkeeping in the Army for guidance.

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.



6. Definition. The WCM generally describes how a reservoir will be regulated and incorporates allowable regulation flexibility for a broad variety of runoff and climatic conditions to achieve congressionally authorized project purposes, such as flood risk management, water quality, water supply, irrigation, navigation, hydropower, recreation, and fish and wildlife, while meeting other statutory and regulatory requirements, including, but not limited to Clean Water Act and Endangered Species Act requirements. A deviation is the regulation of a reservoir outside the flexibility provided within a project's approved WCM. It is imperative the NWD District and division water management (WM) offices maintain current WCMs that clearly identify all technical reservoir regulation criteria to ensure the regulation of reservoirs and other water control facilities conforms to the provisions of the approved WCMs. While the guidance criteria found in approved WCMs generally provides for a broad range of reservoir regulation, in some instances it may be necessary to deviate from that guidance criteria. These deviations from a project's WCM generally fall into three broad categories as described in ER 1110-2-240 and ER 1110-2-8156, which are planned deviations, unplanned deviations, and emergency deviations.

a. Planned Deviations. Prior to approval from Chief of CBWMD or Chief of MRWMD is required for any deviations from approved WCMs as set forth below. The deviation request should be self-supporting and self-explanatory. ER 1110-2-240 offers a list of recommended supporting material in section 3-4(c) to be submitted for NWD review along with the deviation request. Construction accounts for the major portion of these occurrences; typical examples include special projects impacting water management to facilitate the construction of utility stream crossings, bridge construction or maintenance, and inspection of reservoir project facilities. (Therefore, continuous communication needs to be occurring between the construction, contracting, planning and WM offices to avoid surprises). Each request should be analyzed on its own merits to determine if it is covered by the WCM. If the proposed action is not covered by the WCM, a deviation will be required. Any deviation must be consistent with the project authorization and within existing authorities. Each deviation request will also be evaluated to ensure that any potential adverse impacts to authorized project purposes are identified and considered prior to implementation. A deviation that will impact project authorized purposes or is outside existing authorities will require additional studies and/or authorization by Congress (ER 1110-2-240 3-1, j (4)). Sufficient data on, flood potential, reservoir and watershed conditions, possible alternative measures, benefits to be expected, known project deficiencies, and probable effects on other authorized and useful purposes, review of failure mode analysis (if applicable), together with the recommendation, will be communicated to the division for review and approval. In addition, a review of alternatives under provisions of pertinent

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.

laws and regulations (such as NEPA and ESA) when applicable (see ER 1110-2-240). Planned deviation requests should be submitted at least three weeks prior (or earlier) to the anticipated date that approval is required to allow for review and coordination. For example, the deviation may be required as part of a regulatory effort (Section 404, 408, etc.). For projects undergoing modification or upon discoveries of new vulnerabilities, additional documentation may be required such as Interim Water Control Plans (IWCP), and/or Interim Risk Reduction Measure (IRRM) documentation. A minor deviation, where the changes in operation does not influence risk for a given project, would not require a risk assessment as part of the documentation

b. Unplanned Deviations. The need for unplanned deviations may arise due to unforeseen conditions that do not allow sufficient time for a full analysis prior to the deviation. Each WCM should contain provisions for dealing with a wide range of unplanned occurrences that are not considered emergencies, but any other unplanned occurrence will follow the same guidelines as a planned deviation. Approval for these deviations normally will be obtained from the respective division water management office by telephone. Post-deviation written documentation from the requesting office to the respective division water management chief, or a delegate of the chief should contain an explanation of the deviation and its cause. In turn, a written response to the deviation request will be provided by the respective division water management chief or a delegate of the chief to the requesting office.

c. Emergencies. An emergency is defined as a circumstance where failure to act immediately could result in loss of life or significant damage to property or the environment. Each WCM should contain provisions for dealing with emergency situations. If a WCM does contain provisions for emergency situations, water control actions taken in accordance with those provisions would not be considered a deviation from the WCM. Examples of some emergencies that can be expected to occur at a project are drowning and other accidents, failure of the operation facilities, chemical spills, treatment plant failures, other temporary pollution problems, and unexpected outage of the hydropower facility. Water control actions necessary to abate the problem are taken immediately. If the water control actions taken are not covered in the WCM, these actions will be considered a deviation under the provisions of this guidance. Evaluation of emergency deviations are based on available information with consideration of potential transfer of risk. Districts must inform their division water management office by telephone as soon as practicable. The respective water management offices may develop forms to facilitate the reporting of emergency deviations. Standard after-action reporting requirements for emergency operations (whether a deviation or not) still applies.

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.



7. DEVIATION REQUEST AND APPROVAL. The Chief, Columbia Basin Water Management Division (CBWMD) and the Chief, Missouri River Water Management Division (MRWMD) are the responsible approving officials for all deviation requests for projects within their assigned area of responsibility. All deviations that are considered sensitive in nature or that have regional impacts or that are nationally significant actions are coordinated with the Division Engineer. As previously stated, per ER 1110-2-240, all deviations should be coordinated with the Division's Water Control Manager, the Division's DSO, and the District's DSO. The coordination with Division and District Dam Safety will consist of the following:

a. District DSO will sign off on Deviation requests prior to district WM office sending to NWD Water Management.

b. If any dam safety issues need to be considered in the deviation at the district level, then that is noted in the deviation request to NWD Water Management.

c. Once NWD Water Management receives any request, it is forwarded to the DSO and DSPM in NWD Engineering and Construction (NWD-RBT) as part of the review process and will be flagged if there is a dam safety review required based on the district assessment.

d. If there is a dam safety review required, then this establishes a five business-day review timeline to provide concurrence and/or any comments for deviations described in paragraphs 3.a and 3.b above. This will occur concurrent with WM review. For emergency deviations (para 3.c) the NWD-RBT review will be expedited to meet the need.

e. If there is not a dam safety review required as determined by the district DSO, then, NWD-RBT can promptly respond "Proposed deviation does not have any dam safety impacts."

f. NWD Water Management will copy furnish NWD-RBT (DSO, DSPM) on all deviation request approvals.

g. Prior approval from the approving authority is required for deviations from approved WCMs that meet the requirements of paragraph 3.a and 3.b. above. Pre-coordination of a potential deviation request should occur between the requesting office and the approving authority to ensure that a deviation is indeed necessary. District initiated deviation requests should be submitted to either the Chief, CBWMD or to the Chief, MRWMD as appropriate. Division water management offices shall coordinate

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.



with the appropriate district or districts for all division originated deviation requests. All deviations from approved WCMs shall be documented to respond to any public concerns raised by those deviations. Coordination with Federal, State, Tribal, local governments, and private interests should be undertaken as appropriate. At a minimum, deviation requests should discuss the need for coordination and present a plan for that coordination. Informal coordination prior to a deviation request may also be appropriate. The requester is referred to the document titled "Template for Deviation Requests within NWD" for preparing and submitting deviation requests to the approving authority.

8. Required Change to a Water Control Plan. This paragraph describes the circumstances under which a permanent change to a WCM is required and outlines the process to effect the change.

a. Recurring Deviation Requests. If the same deviation request is repeated annually for more than three consecutive years or in three of the most recent five years, the WCP shall be reviewed to determine if a permanent change to the WCP is required. Per ER 1110-2-240, "Significant, recurrent or prolonged deviations from operations prescribed by an approved water control plan may indicate a need for a formal change to operations prescribed by an approved water control plan. The division commander (*or their designee*) should evaluate whether revision of the approved water control plan is appropriate in such a case." For example, ongoing construction at a hydro project may persist for multiple years but may not warrant a revision to the approved water control plan. Studies to revise the approved WCM and/or Storage Reallocation should be budgeted in a timely manner with a goal of an approved revision to the WCM within two years of the decision to review and update the WCM. These WCM review and update studies shall conform to all applicable regulations pertaining to WCM changes and the necessary public coordination, including ER 1110-2-240. Reservoir regulators may continue to submit deviation requests even after a project has been identified as one with recurring deviation requests. However, these requests may not be granted unless the WCM revision study has commenced, and appropriate progress demonstrated. Furthermore, per ER 1110-2-240, "Deviations that impact the fulfillment of authorized purposes, that occur in three or more consecutive years, or that occur more than three times within a five-year period must be fully coordinated with CECW-CE, the Chief of Engineering and Construction Division, Civil Works Directorate".


b. Supporting Evaluations for Recurring Deviation Requests. When conditions appear to warrant a recurring deviation from the guidance provided in the WCM to store into flood risk management storage, the Corps of Engineers, and the project owner (where appropriate), will jointly investigate and evaluate the proposed deviation to ensure that the overall integrity of the approved WCM will not be unduly compromised.

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.

c. Approval of the deviation may not be granted unless the following items have been considered where appropriate:

- (1) Hydrologic Adequacy of Project
- (2) Change in Frequency of Spillway Usage
- (3) Backwater Impacts on Non-Project Lands
- (4) Impacts on Other Project Purposes/Facilities
- (5) Impacts on Dam Safety
- (6) Analysis of Environmental, Water Quality, and Cultural Impacts
- (7) Evaluation of Water Rights Issues
- (8) Coordination/Public Involvement
- (9) Document Changes to Release Probability Relationship
- (10) Impact on Project Benefits

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\*This regulation supersedes NWDR 1110-2-6, 1 May 2015.

## Appendix C: Analysis of Historic Monthly Natural Runoff for Seli’s Ksanka Qlispe’ Dam

**Data Source:** The monthly runoff in thousand acre-feet (KAF) was available for Water Year 1949-2023 from the Northwest River Forecast Center website for Seli’s Ksanka Qlispe’ Dam (SKQ) ([https://www.nwrfc.noaa.gov/water\\_supply/ws\\_normals.cgi?id=KERM8](https://www.nwrfc.noaa.gov/water_supply/ws_normals.cgi?id=KERM8)).

**Drought Definition:** The U.S. Drought Monitor uses percentile ranges to place their drought categories into a historical context. For example, using 100 years of data ranked from largest to smallest, a severe drought would be expected to occur once in every 10 to 20 years. For the Flathead Lake Drought Management Plan, EKI defines drought at the inflection point between abnormally dry and a moderate drought category at the 20<sup>th</sup> percentile.

Category	Description	Example Percentile Range for Most Indicators
None	Normal or wet conditions	30.01 or Above
D0	Abnormally Dry	20.01 to 30.00
D1	Moderate Drought	10.01 to 20.00
D2	Severe Drought	5.01 to 10.00
D3	Extreme Drought	2.01 to 5.00
D4	Exceptional Drought	0.00 to 2.00

Table 1: The U.S. Drought Monitor identifies areas in drought and labels them by intensity. The four categories of drought range from D1 the least intense to D4 the most intense.

**Analysis Results:** Analysis was completed on the April to September volumes for the entire water year dataset as well as the 30-year normal dataset of 1991-2020 and the previous 30-year normal dataset of 1981-2010 (Figure 1). The 20<sup>th</sup> percentile for both 30-year datasets is 5,140 KAF and for the 1949 – 2023 dataset is 5,580 KAF. Figure 2 shows the April to September runoff volumes for each water year. Water years 1973, 1977, 1987, 1988, 1992, 1994, 2001, 2003, 2015, and 2023 were below the 5,140 KAF drought definition. As expected, the Flathead Lake Drought Management Plan trigger would trigger in 11 out of the 76-water year set, 6 out of the 30-year normal dataset of 1981-2010, and 6 out of the 30-year normal dataset of 1991-2020. This frequency is within the unplanned deviation request definition in the Army Corps of Engineers regulation and will not occur frequently enough to require a change to the water control manual for SKQ project.

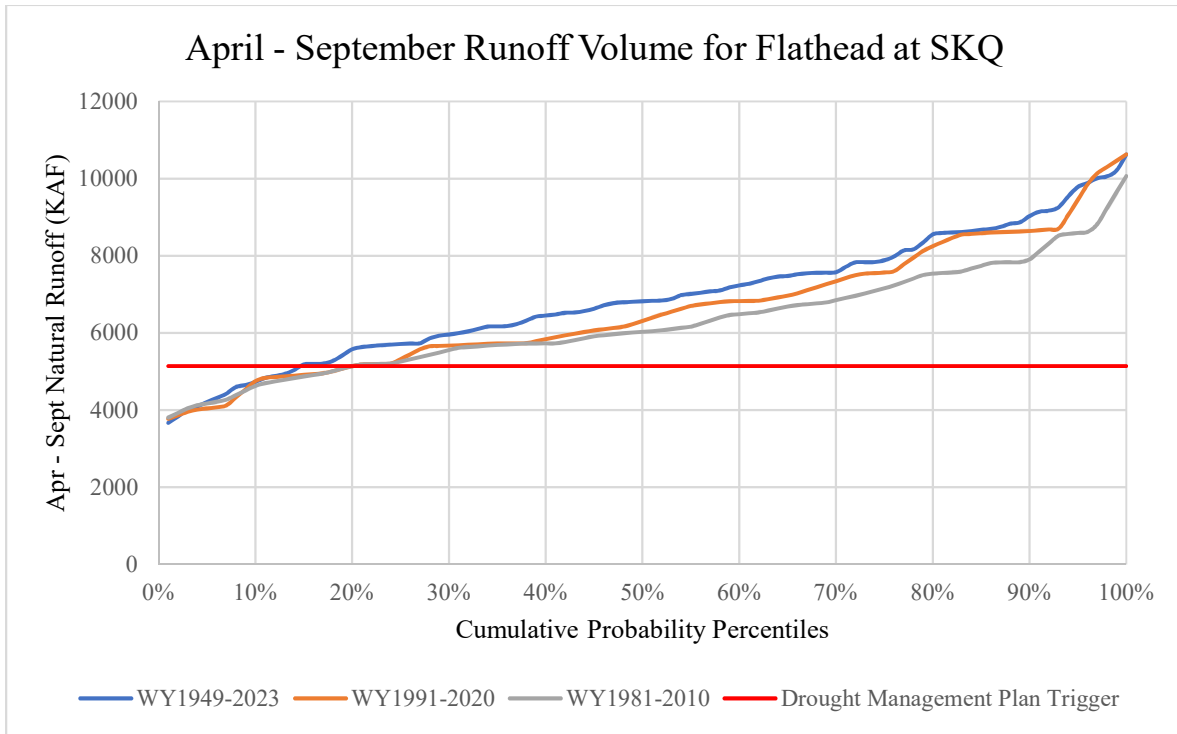


Figure 1: April to September runoff volume for Flathead Lake at SKQ probability percentiles for the three different datasets. The red line denotes the 5,140 KAF drought definition for the Flathead Lake Drought Management Plan.

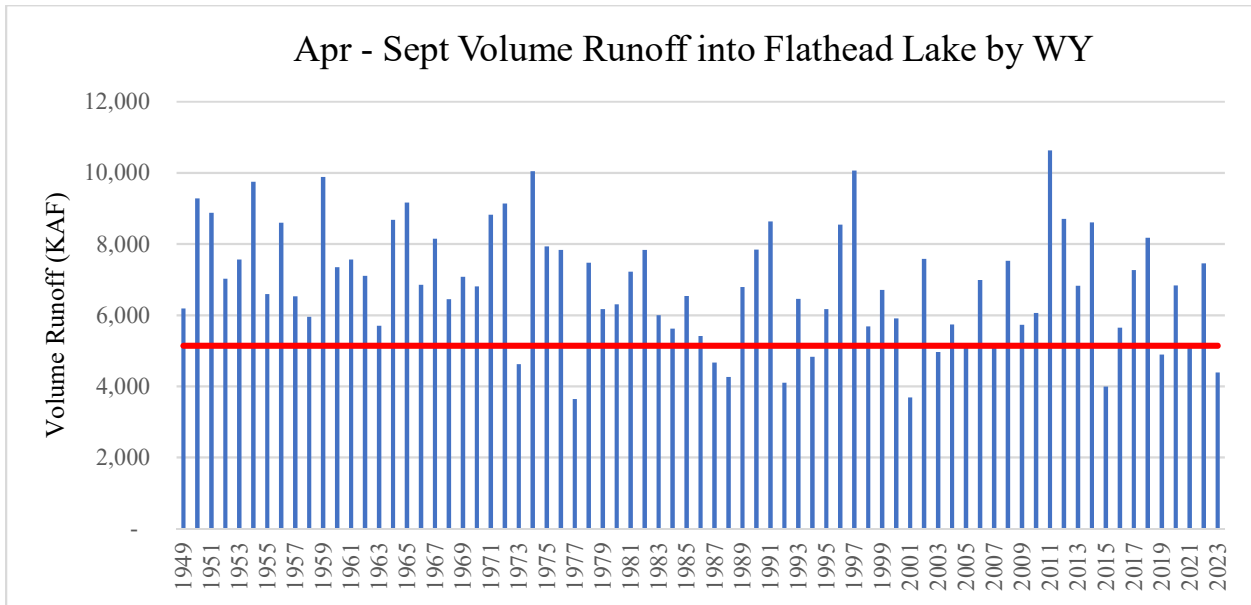


Figure 2: April to September runoff volumes for each water year in the data set with the red line at the 5,140 KAF drought definition for the Flathead Lake Drought Management Plan.