



PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY

P.O. Box 1231, Wenatchee, WA 98807-1231 • 203 Olds Station Rd., Wenatchee, WA 98801

(509) 663-8121 • Toll free 1-888-663-8121 • www.chelanpud.org

December 30, 2024

P-2145-WA NATDAM-WA00086

P-637-WA NATDAM-WA00004

P-943-WA NATDAM-WA00084

VIA ELECTRONIC FILING

Douglas L. Johnson, P.E.
Regional Engineer, D2SI-PRO
Federal Energy Regulatory Commission
1201 NE Lloyd Blvd, Suite 750
Portland, OR 97232

Re: Annual Owner's Dam Safety Program Review

Dear Mr. Johnson:

Please find the enclosed copy of the annual review of Public Utility District No. 1 of Chelan County's (Chelan PUD) Owner's Dam Safety Program (ODSP) in accordance with the requirements of 18 CFR §12.64 and Section 10.1 of Chelan PUD's ODSP.

I conducted the review and prepared the enclosed memo which summarizes my findings. The memo was shared with all staff that are identified as having key roles supporting Chelan PUD's ODSP, which includes senior management and our Board of Commissioners.

The enclosed material meets the Critical Energy Infrastructure Information (CEII) requirements under 18 CFR 388.113c. The District requests that this material not be released to the public.

I have reviewed the enclosed document and concur with the recommendations and findings contained therein. If additional information would be helpful, please call me at the number listed below.

Sincerely,

Ian Hunter, P.E.
Chief Dam Safety Engineer
(509) 661-4305
ian.hunter@chelanpud.org

Douglas L. Johnson, P.E., Regional Engineer
Federal Energy Regulatory Commission, D2SI-PRO
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Enclosures: Annual Review of Chelan PUD's ODSP memo, dated December 27, 2024
Plan and Schedule to Address Audit Recommendations (**CEII material**)



To: Kirk Hudson, General Manager

From: Ian Hunter, Chief Dam Safety Engineer

cc: Dan Koch, Chief Operating Officer
Brett Bickford, Managing Director of Generation & Transmission

Date: December 27, 2024

Re: Owner's Dam Safety Program Annual Review
Lake Chelan, Rock Island and Rocky Reach Hydroelectric Projects

Annual ODSP Review Summary

This memorandum provides a summary of my annual review of Chelan County PUD's (District) Owners Dam Safety Program (ODSP) in accordance with the requirements of 18 CFR §12.6¹ and Section 10.1 of the ODSP document. As the District's Chief Dam Safety Engineer (CDSE), this review focused on the District's performance meeting the objectives described in the most recent ODSP document (ODSP Rev. 4. Aug 2023 and Annual Recommendation Update Dec. 2023) and incorporates changes that have been made to the program in 2024. This document will be submitted to the FERC's Portland Regional Office as evidence that the ODSP annual review was shared with the District's senior management.

The District continues to invest in its dam safety program through risk management strategies, staff training and development, continuous improvements and robust operations and maintenance programs. Dam safety objectives are communicated clearly throughout the organization, from the staff level to senior management. The Dam Safety Engineering Department (DSED) works closely with other functional groups and stakeholders to ensure dam safety priorities remain integral with our day-to-day operations. An example of this is how the District responded to the discovery of compromised parapet wall sections on the Rock Island spillway. The District immediately re-directed staff and consultants to assist in responding to the issue, which included developing risk-reduction measures to safely manage the dam safety and operational risks associated with the damaged parapet.

Following the external audit of the ODSP in 2023, the CDSE continues to implement recommendations that provide value and improve the District's dam safety program. Refer to the attached table for an update on the status of these recommendations.

¹ § 12.64 Annual review and update of Owner's Dam Safety Program. The Owner's Dam Safety Program, and the implementation thereof, shall be reviewed at least once annually by the licensee's dam safety staff and discussed with senior management of the Owner's organization. The licensee shall submit the results of the annual review, including findings, analysis, corrective measures, and/or revisions to the Owner's Dam Safety Program, to the Regional Engineer.

Staffing and Succession Planning

Court Hill was hired as a dam safety engineer in November 2024 to backfill the vacancy created when I was promoted to Engineering Manager/Chief Dam Safety Engineer. Mr. Hill has worked at the District for over 20 years and has some previous dam safety engineering experience, making him an exceptional addition to the DSED. A detailed on-boarding plan, which included training specific to dam safety, is currently being implemented to ensure Mr. Hill makes a successful transition as a key contributor to the DSED.

In 2024, the District began a succession planning pilot that focuses on assessing, evaluating, and developing internal talent to mitigate any single points of failure. Supervisors/Managers will work with their leaders to regularly identify critical positions and ensure succession plans are in place to improve business continuity, personnel development, knowledge transfer, staffing gap identification, and maintainability of staffing levels. This new succession planning program will be used to identify future staffing needs within the DSED and key roles identified in the ODSP.

Responsibilities for Dam Safety

The District initiated a new process in 2024 that requires individuals having a key role within the ODSP to review and acknowledge their role and specific responsibilities as described in the ODSP document. This process is completed using the District's online Learning Management System, which tracks and records this annual attestation.

Key roles identified in the 2023 ODSP have, or will soon be, changing as a result of restructuring of the District's Operations business unit. These changes are being integrated in the next revision of the ODSP, which is expected to be published in Q1 of 2025. The Chief Dam Safety Engineer (CDSE) will be meeting with all individuals that are identified as having a key role within the ODSP to ensure responsibilities and expectations are clearly understood under the new organizational structure. In 2024, I was promoted from a dam safety engineer role to the CDSE and Engineering Manager position. The District retained the predecessor (Mr. Bill Christman) as Senior Advisor to dam safety until his retirement.

Emergency Action Plans (EAP)

The CDSE reviewed and approved annual updates to each facility's EAP. Dam breach inundation mapping for the Rocky Reach and Rock Island Projects was updated in 2024. The District's three EAP's were successfully tested/exercised in 2024 as part of the Mid-Columbia Functional EAP Exercise. Findings from the exercise have been recorded and will be implemented into the EAP program as appropriate.

Dam Safety Surveillance and Monitoring Program

The CDSE is responsible for ensuring that the surveillance and monitoring program (DSSMP/DSSMR) activities for each project are implemented according to the District's filed program for each project. Improvements made to the DSSMP/DSSMR programs in 2024 included integrating instrumentation and data into our work management platform (Maximo) and presentation of data in PowerBI. These changes bolster our record-keeping protocols and make use of existing asset management principles for these dam safety components. The District also

endorsed new dam safety instrumentation and inspections in 2024, including crackmeter installation at Rock Island and diver inspection of the upstream face of the Lake Chelan dam.

It was recognized that future improvements to the DSSMP/DSSMR program may be warranted to ensure resiliency as the DSSMP's expand with the addition of new instrumentation and inspections. Continuing to invest in instrument automation and the robotic total station system for dam deformation monitoring is recommended.

Training Program

The District created and assigned a new Dam Safety Awareness training module to all internal staff that perform work on and near our hydroelectric facilities (about 300 personnel). This training provides a general dam safety overview and District-specific dam safety elements and reporting expectations. Dam safety engineers also led multiple in-person sessions of site-specific dam safety training for the Rock Island, Rocky Reach and Lake Chelan Hydro Operators. All hydro operators either attended the in-person training or completed the online Dam Safety Course for Operators (created by CEATI) in 2024. Other plant engineering and support staff also participated in the dam safety training sessions if deemed appropriate by their supervisors.

Dam safety engineers completed technical trainings and attended dam safety conferences to fulfill their annual training requirements. Below is a summary of the professional development/training completed by the Dam Safety Engineering Department. This list only includes items specific to dam safety.

Name and Title	2024 Training and Professional Development
Ian Hunter <i>Chief Dam Safety Engineer</i>	<ul style="list-style-type: none"> • CEATI Hydropower Conference and Dam Safety Interest Group Spring Meeting • USSD Annual Conference and Owners Forum on Risk Workshop • Northwest Hydropower Association (NWhA) Owners Forum and Technical Workshop • CEATI Dam Safety Interest Group Fall Meeting • Fundamentals of Reinforced Concrete Design of Hydraulic Structures (ASDSO) • Dam Safety Essentials: Guidance and Training for Engineers
Larry Cordes <i>Dam Safety Engineer</i>	<ul style="list-style-type: none"> • CEATI Hydropower Conference and Dam Safety Interest Group Spring Meeting
Court Hill <i>Dam Safety Engineer</i>	<ul style="list-style-type: none"> • Fundamentals of Reinforced Concrete Design of Hydraulic Structures (ASDSO) • Dam Safety Essentials: Guidance and Training for Engineers

Name and Title	2024 Training and Professional Development
Brandon Little <i>Dam Safety Engineer</i>	<ul style="list-style-type: none"> • USSD Annual Conference and Owners Forum on Risk Workshop • NWAHA Regional Dam Safety Working Group DSSMR/DSSMP Forum • Canadian Dam Association – Effects of Alkali-Aggregate Reaction Webinar • Spillway Gates and Dewatering Systems - Lessons Learned and Practical Solutions Webinar (ASDSO)

While not necessarily classified as training, dam safety engineering staff from the Mid-Columbia PUDs met three times in 2024 (Feb. 13th, July 30th, and Nov. 25th) to discuss and share knowledge specific to contemporary dam safety matters.

The dam safety training program described in the ODSP is being updated to reflect specific training requirements for the key roles. This will be reflected in the next revision of the document.

Communications, Coordination, Reporting and Reports

Non-Conformance Reporting

Revision 4 of the District’s ODSP contains instructions and description for submitting Non-Conformance Reports (Section 6.1). Any employee who becomes aware of a potential non-conforming dam safety condition at Chelan PUD has the ability to report a non-conformance and submit this to the DSED for review. The non-conformance reporting process will be evaluated in 2025 to identify process improvement opportunities.

Submitted Non-conformance reports in 2024

On April 1, 2024, Chelan PUD notified FERC-PRO of cracking in the spillway downstream parapet wall located at the Rock Island Hydro Project. On April 15, 2024, Chelan PUD submitted a Dam Safety Condition Report pursuant to the requirements found in 18 CFR 12.10a.² Following the original identification of the cracked parapet wall, the District initiated a detailed investigation and analysis to inform our decision-making process. A Board of Consultants was convened in September 2024 and risk reduction measures are currently being implemented to manage this issue.

Internal Reporting of Dam Safety Matters

The CDSE met weekly with the Generation and Transmission directors to discuss upcoming work and any emergent issues. Monthly meetings were held with the Dam Safety Engineering Department and leaders within the Generation and Transmission group to share updates on project-specific dam safety objectives and general dam safety program updates.

² Ian Hunter, P.E., Chelan PUD to Douglas Johnson, P.E., FERC Project No. 943, Accession No. [20240415-5299](https://www.ferc.gov/recordsearch/record.asp?docid=20240415-5299) (Apr 15, 2024).

Dam safety risks are entered into the District's Enterprise Risk Management (ERM) database and were updated quarterly by dam safety staff. Risks that meet established criteria were reviewed by the District's Risk Committee and senior management so appropriate risk-reduction measures (i.e., additional resources) can be assessed and implemented as necessary.

A ten-minute PUDCast video, hosted by you, was produced and involved a candid conversation with DSED staff regarding the concrete growth issues at Rock Island. This video, made available to all District staff, helped increase awareness of this prominent dam safety issue.

External Communications

The CDSE and dam safety engineers communicated regularly with FERC-PRO staff to discuss specific dam safety matters. Semi-annual meetings with FERC-PRO staff, DSED staff and Licensing and Compliance staff were held on June 18th and September 19th, 2024 to facilitate FERC dam safety inspections, discuss broad dam safety topics, provide updates on dam safety projects and review the list of filings waiting for FERC responses.

The District's Communications Department plans to update the external communication policy in response to the ODSP external audit comment received in 2023.

Record Keeping and Databases

Chelan PUD has been undergoing digitization of many of its dam safety records and organizing them in alignment with the FERC's recent Digital Project Archive guidelines. Compliance tasking associated with dam safety was transferred into the District GRC software in 2024. This change offers improved tracking and updating of dam safety commitments and requirements. The ODSP has been updated to reflect the coordination and roles of Hydro Licensing and the Dam Safety staff in protecting and preserving the dam safety records at Chelan PUD.

Continuous Improvement

The Dam Safety Engineering Department, and Chelan PUD as a whole, continue to look for continuous improvement opportunities that reinforce our three dimensions of success (process improvements, strong working relationships and achieving desired results). This was witnessed by the improvements made to the surveillance and monitoring program, rollout of the new dam safety awareness training and the prompt response to the emergent challenges associated with the Rock Island spillway. We continue to find ways to implement the recommendations from the 2023 audit of our ODSP and we regularly collaborate with other dam owners in order to look for opportunities for improvements. With the recent organizational realignments, and a new CDSE, the ODSP document is currently being revised to reflect the changes in roles, updates to the dam safety training program and other changes that are driven by the desire for continuous improvement.

Another area that I would like to improve upon is utilization of CEATI's Dam Safety Maturity Matrix (DSMM) to self-evaluate different aspects of our dam safety program. This tool has been used by many other dam owners to benchmark the maturity of their dam safety programs, and to assess how they compare to industry practices. Starting in 2025, I would like to assess our ODSP

using three of the twelve matrix elements. Assuming this process goes well, three other elements will be assessed in 2026, and so on.

I ask that you share the content of this memo with our Board of Commissioners to ensure they are informed of the status of our ODSP. Please contact me if you would like to discuss any of the above information in more detail, or if you have follow-up questions.

Sincerely,

A handwritten signature in black ink that reads "Ian Hunter". The signature is written in a cursive, slightly slanted style.

Ian Hunter, P.E.
Chief Dam Safety Engineer
(509) 661-4305
ian.hunter@chelanpud.org