# 6 Quarterly Dam Safety Report

## Executive summary

The purpose of this report is to update the Operations, Planning, Safety and Information Technology Committee of the Board of Directors on key dam risk management activities during the period from Oct 1 to Dec 31, 2025 (F2026 Q3) and to provide reasonable assurance that the safety of dams operated by BC Hydro continues to be managed to the established guidelines and criteria of the Dam Safety Program. To keep the Committee as fully abreast of the Dam Safety Program as possible, some notable developments that took place after Dec 31, 2025, but before the completion of this report have also been included.

The key highlights from F2026 Q3 and the beginning of F2026 Q4 documented in this report are:

- The aggregated Vulnerability Index increased by about 2 due to the identification of a deficiency in the capacity of the Revelstoke spillway chute. See page 3.
- The Bear Creek low level outlet pipes which were discovered heavily corroded and reported in F2026 Q2 were remediated in F2026 Q3. See pages 6 and 7.
- Between December 14 and 19, a significant atmospheric river event impacted multiple Lower Mainland and Vancouver Island facilities. High inflows resulted from a combination of sustained heavy rainfall and snowmelt driven by rising temperatures. The event is estimated to be approximately a 1 in 10 year return period. The reservoir levels at Coquitlam Dam peaked at 154.3 m. This was the highest level since the dam was rebuilt in 2008 and the highest in approximately 30 years. See page 10.
- Maintenance on the dams continued to be well-delivered. In F2026 Q3, the Stations SAP (SSAP) project continued to stabilize following its operational launch, with ongoing efforts focused on data migration, reconciliation, and user adoption. See pages 11 to 14.
- The new intake operating gate system for the Comox Puntledge Flow Control Improvements Project underwent several successful tests in Q3. Design solutions have now been confirmed and improvements at both the Spillway and Intakes are planned for the upcoming 2026 outage. See pages 15 and 16.
- Remediation of the sinkholes at Ruskin Dam have been completed. The completion of the remaining work is on track with a resulting plan to return Generating Unit 3 to service in Spring 2026. See pages 17 and 18.
- In October 2025, Dam Safety and the Project team convened the first independent Advisory Board for the La Joie Seismic Improvement Project. The Advisory Board consisted of Dr. Peter Mason and John France. Both are respected experts in the field of large dam construction and have acted as advisory board members on other BC Hydro projects. The Advisory Board provided independent review and endorsed the project team recommendation on the preferred option to complete the project scope. See pages 18 and 19.

### Presenter: Andrew Watson (Director, Dam Safety and Generation Asset Planning)

### Dam Safety Program Dashboard

The following dashboard provides an overview of the status of the Dam Safety Program. “Traffic lights” provide a qualitative indication of the status of each of five elements of the Program and trend arrows identify whether the status is improving, deteriorating or unchanged. As referenced, these indicators are supported by more detailed metrics and narratives in the report.

## 6 Quarterly Dam Safety Report

| | | |
|---|---|---|
| **Risk Profile and Issues Management** | G → | • **Vulnerability Index (pp. 3-4):** The aggregated Vulnerability Index increased by about 2 through Q3 of F2026 due to an assessment of the Revelstoke spillway capacity identified a deficiency related to bulking of the flow during spills due to the existing aeration slots (increase).<br>• **Non-Conformances (pp. 5-6):** The number of outstanding issues have slightly decreased.<br>• **New and Current Issues (pp. 6-7):** The low level outlet at Bear Creek, a low consequence dam, were remediated. |
| **Regulatory Compliance** | G → | • **Operation, Maintenance and Surveillance Manual Updates (p. 7):** Falls River Dam and Elko Dam OMS Manuals were issued in December 2025. The interim update to the Coquitlam Dam OMS Manual was also issued in early Q3.<br>• **Dam Safety Reviews (p. 8):** Reviews progressed according to plan. |
| **Surveillance** | G → | • **Dam Inspections (p. 9):** In Q3 F2026, routine inspections are meeting our targets. All required formal dam safety reports were completed and reporting is on track for fiscal year end.<br>• **Reservoir Slopes (pp. 9-10):** In F2026, 16 reservoir slopes inspections are due for completion. The field work for all 16 inspections were completed as of the end of Q3, and reporting is ahead of schedule with 7 issued reports compared to a target of 6 reports.<br>• **Unusual Events or Observations (p. 10):** Between December 14 and 19, a significant atmospheric river event impacted multiple Lower Mainland and Vancouver Island facilities. High inflows resulted from a combination of sustained heavy rainfall and snowmelt driven by rising temperatures. The event is estimated to be approximately a 1 in 10 year return period. |
| **Maintenance and Testing** | G → | • **Civil Maintenance (pp. 11-12):** The Corrective and Condition-Based Civil Maintenance Program made progress. The F2026 target to complete remains on track with 24 projects completed against a target of 26. In Q3 of F2026, the Stations SAP (SSAP) project continued to stabilize following its operational launch, with ongoing efforts focused on data migration, reconciliation, and user adoption.<br>• **Spillway Gates (pp. 12-14):** During Q3 of F2026, 234 of 239 scheduled gate tests were completed. This includes the Full Opening tests of 7 gates. No gates failed to operate on demand during testing in Q3. |
| **Projects and Investigations** | G ↑ | • **Capital Projects (pp. 15-20):** Remediation of the sinkholes at Ruskin Dam have been completed and the project is on track to return the Generating Unit 3 to service in Spring 2026. The new intake operating gate system for the Comox Puntledge Flow Control Improvements Project underwent several successful tests in F2026 Q3. In October 2025, Dam Safety and the Project team convened the first independent Advisory Board for the La Joie Seismic Improvement Project. |

| **Legend:** | |
|---|---|
| G | All areas within the Program element are being implemented to a satisfactory level. Minor, isolated issues may exist but are not deemed to be indicative of deteriorating performance. |
| Y | One or more areas within the Program element exhibit or are at risk of underperformance and are being monitored. |
| R | One or more areas within the Program element exhibit unsatisfactory performance and require correction. |
| ↑ | Status of the Program element has improved over the quarter. |
| → | Status of the Program element was unchanged over the quarter. |
| ↓ | Status of the Program element deteriorated over the quarter. |

## Risk Profile of BC Hydro's Dams

**Dam Safety Contribution to Enterprise Risk**

Dam Safety is assigned a high "risk priority" within BC Hydro's Enterprise Risk report. Please refer to that report for additional details.

**Vulnerability Index Update**

Identified physical deficiencies in BC Hydro's dams and the degree of concern that exists with respect to their impact on the integrity and performance of the dam are characterized by the Vulnerability Index. The higher the value of the Vulnerability Index (scale of 0-10), the higher the likelihood of that deficiency leading to poor performance. The Vulnerability Index for each identified issue at each dam site is shown in Figure 1. Vulnerability Indices for the individual deficiencies are aggregated into stacked bars for each dam, and dams are sequenced from left to right in order of increasing downstream consequences per the BC Dam Safety Regulation. Changes in Vulnerability Index for actual and potential deficiencies (including those related to spillway reliability), aggregated across the entire fleet of dams, are tracked on a quarterly basis and shown in Figure 2. Notable changes in Vulnerability Index in F2026 Q3 are identified in Figure 1 and described below.

**1** An ***addition*** of 2.3 (Actual Normal deficiency) at ***Revelstoke Dam***.

Safe operation of the dam may be impacted by overtopping of the Spillway chute walls at flows above ~36% of the design capacity. This is a result of bulking of the flow due to aerators (slots in the concrete for air injection to protect the concrete) which were installed in the early 80's during construction. Specialist hydraulic review has been completed supporting the conclusion that the aeration is not required to protect the chute. Plans to restore the spillway chute to its design capacity are being explored as discussed on Page 8.

Over the last several years, new issues have added to the aggregated Vulnerability Index at a rate of approximately twelve per year. To prevent deterioration of the overall risk position, reductions in Vulnerability Index through resolved issues should occur at the same pace or faster. As evident in Table 1, below, Vulnerability Index has increased slightly over past four quarters but overall remain on track with planned projects to address deficiencies in future quarters.

**Table 1** Trends and forecasts for Vulnerability Index changes in F2026.

| | | Actual / Forecast | Target | |
|---|---|---|---|---|
| Dam Safety Vulnerability Index | Reductions – Last 4 quarters | 18 | 12 | ✓ |
| | Reductions – Fiscal Year Forecast | 19 | 12 | ✓ |
| | Additions - Last 4 quarters | 26 | | |

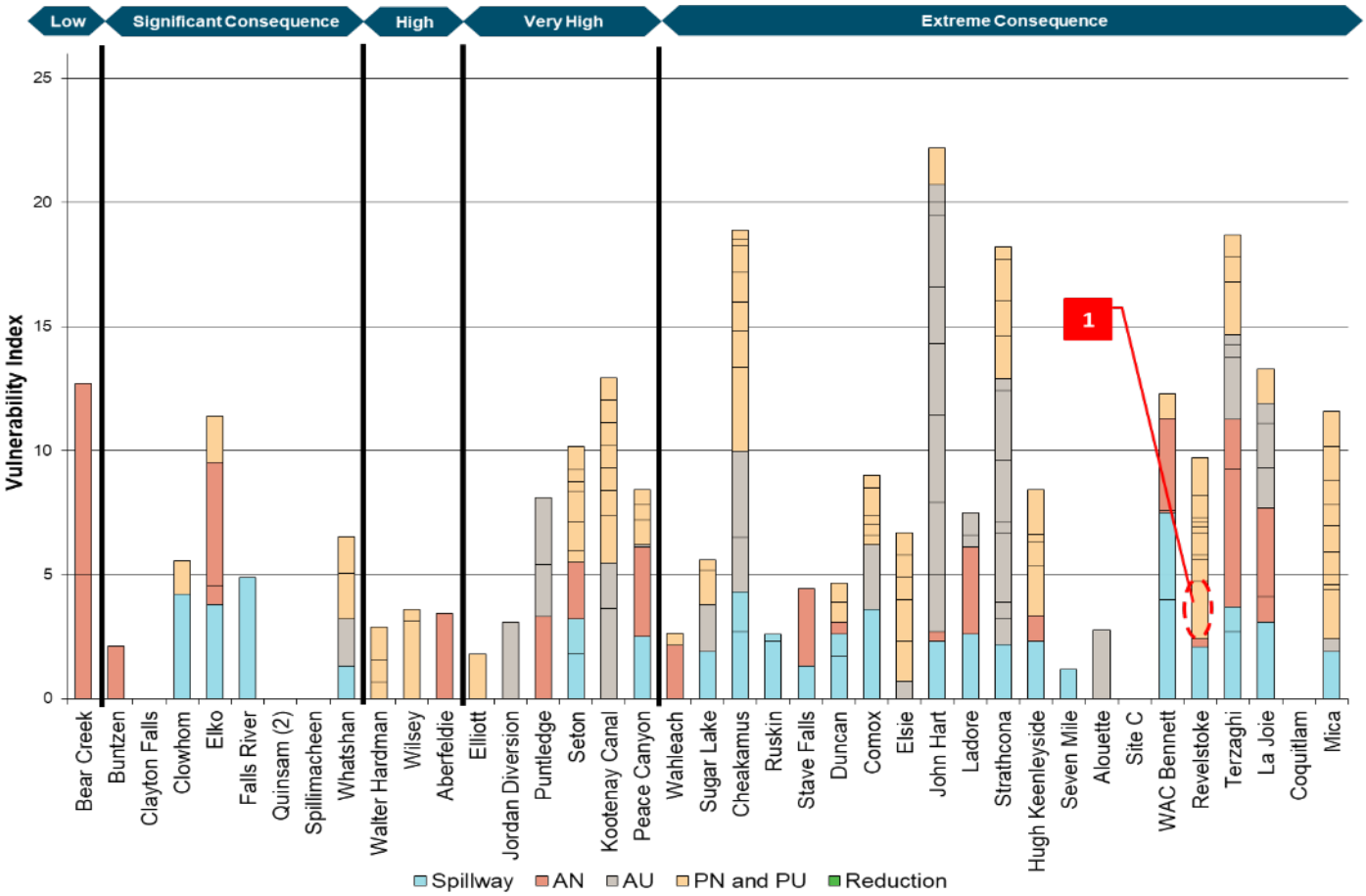


**Figure 1** Dam Safety overall risk profile at the end of F2026 Q3, as represented by the Vulnerability Index. Changes this quarter are indicated by the numbered boxes.

| | |
|---|---|
| **AN** | ***Actual*** deficiency (demonstrated to exist) under ***normal*** load conditions. |
| **AU** | ***Actual*** deficiency (demonstrated to exist) under ***unusual*** load conditions. |
| **PN and PU** | ***Potential*** deficiency (requiring further investigation to demonstrate existence) under either normal or unusual conditions. |
| **Spillway** | Deficiency related to operational reliability or serviceability of the dam's spillway and/or other flood discharge systems. |

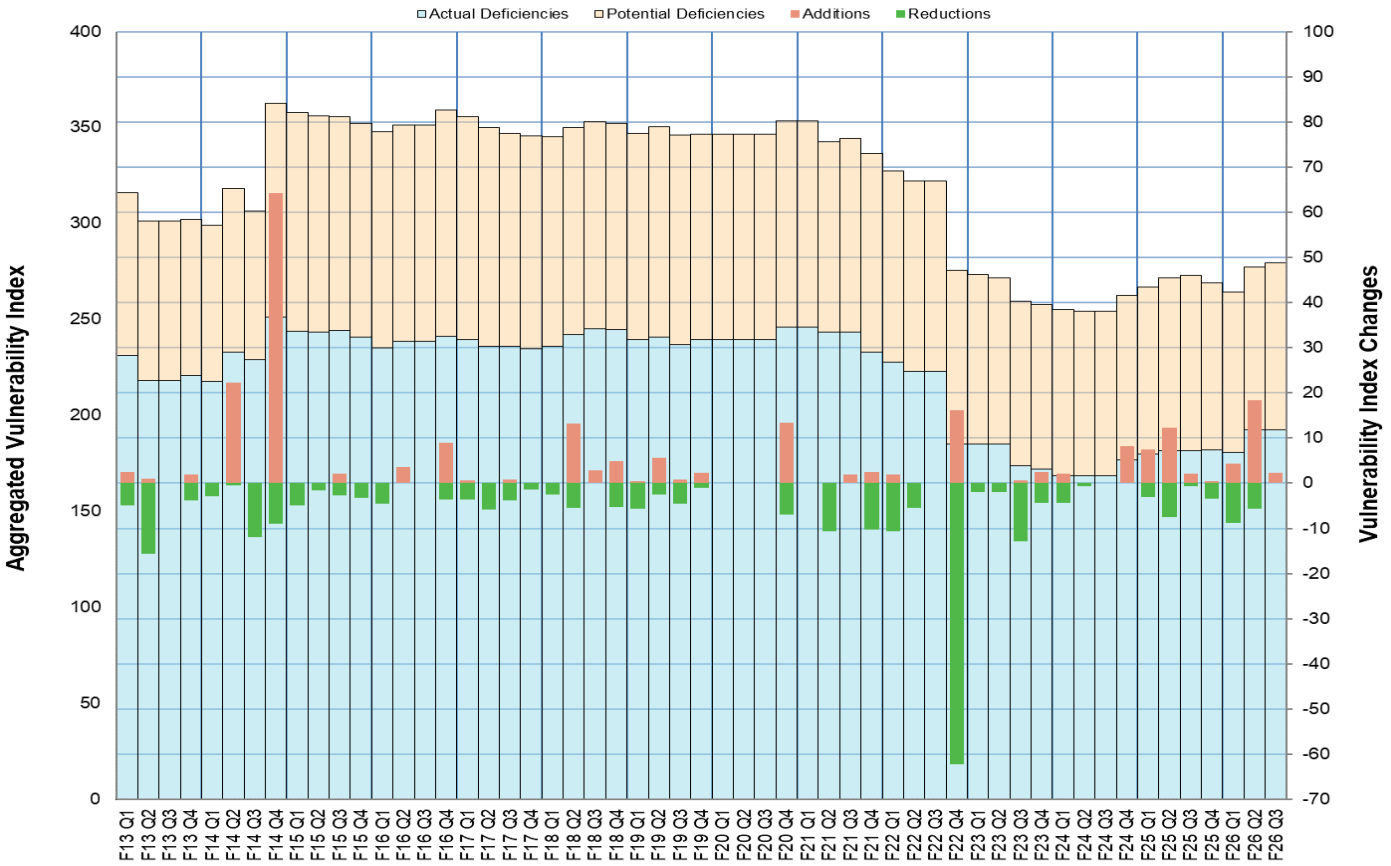


**Figure 2** Historical and forecast changes and trends in the Vulnerability Index aggregated across the BC Hydro system. Note: In this chart, Spillway deficiencies are included as Actual deficiencies.

**Non-Conformances in the Dam Safety Program**

Non-Conformance issues arise where the established procedures, systems and instructions of the Dam Safety Program Management System are not being followed at a particular dam, or where procedures that form part of established and generally accepted good practices have not been implemented within the Management System or at a particular dam.

Activities to identify, review, resolve and close Non-Conformance issues continued through F2026 Q3. As a result, seven Non-Conformance issues were resolved and ten new issues were identified in Q3, resulting in 193 outstanding issues. Figure 3, below, shows the continuing progress in reducing the number of Non-Conformance issues.

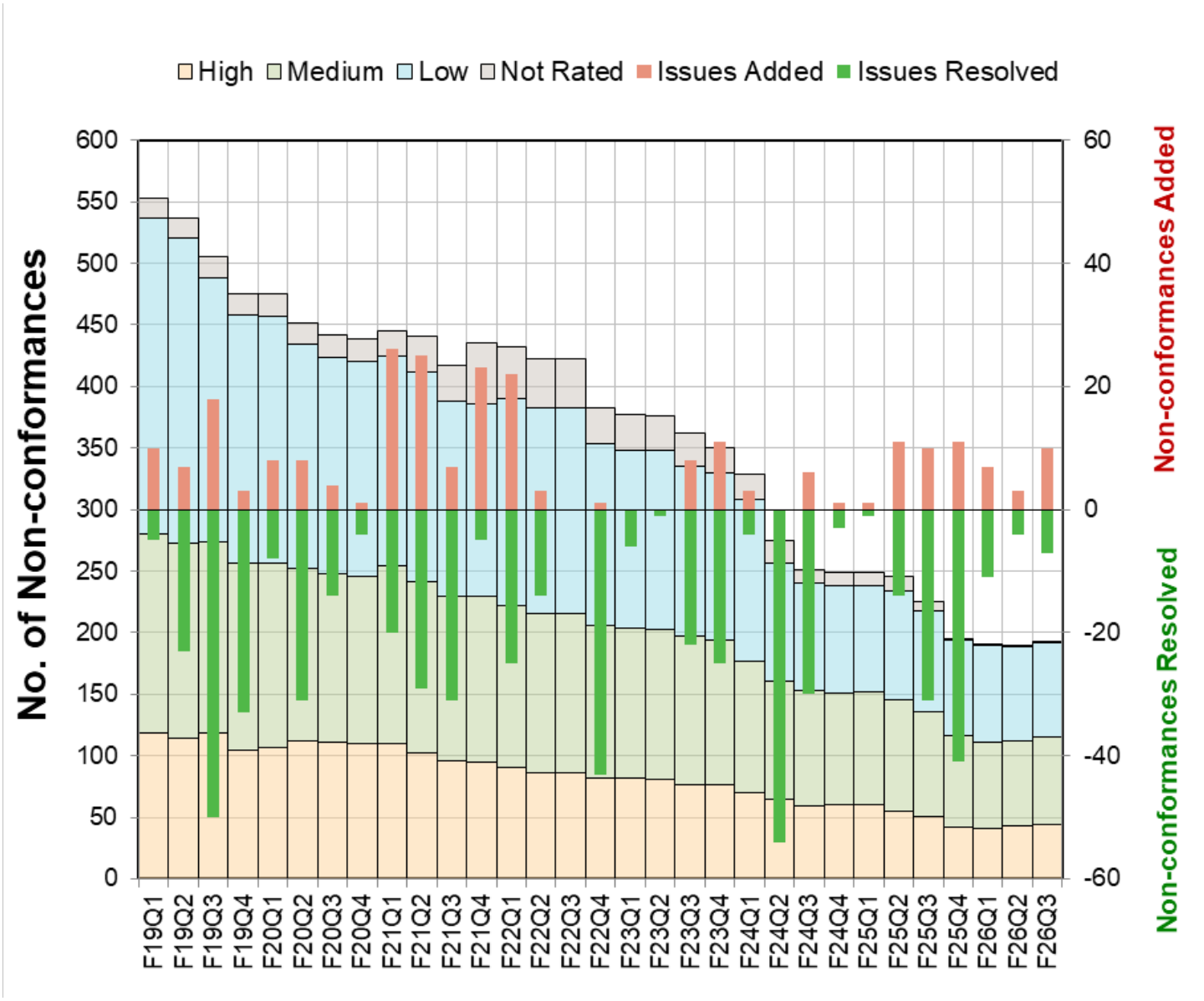


**Figure 3** Changes and trends in the total number of Non-Conformance issues (characterized by level of importance).

## New Issues

There are no new issues to report this quarter.

## Update on Previous Issues

The F2026 Q3 report described the poor condition and presence of leaks in both decommissioned Low Level Outlet conduits at the Bear Creek Dam that were discovered during a planned inspection during the week of August 25, 2025. The issue was reported to the Provincial Dam Safety Officer and enhanced surveillance was initiated following the inspection. A capital project was also initiated to address the dam safety risks.

The capital project was tasked with fully decommissioning the low level outlet conduits by filling them with grout. The project team responded quickly to complete the work within a short time frame. Through several rounds of on-site investigation and testing trials, BC Hydro Engineering and the grouting contractor developed a suitable grout mix and an effective delivery method for ensuring complete sealing of the low level outlet conduits with grout (Figure 4). Both conduits were successfully sealed with grout on December 14th, effectively removing any further dam safety risk related to this issue

**Figure 4** Bear Creek Low Level Outlet sealing. Left: Successful grouting trial; Middle: Custom-made grout delivery trolley; Right: Grout delivery equipment installed in downstream end of conduit;

**Regulatory Communications – Comptroller of Water Rights**

A request to backfill the low level outlet pipes at Bear Creek Dam was submitted and accepted in Q3 and the regulator was informed when the work was successfully completed. Reporting on the completed work must be submitted by the end of February and is on schedule.

The annual meeting with the Comptroller of Water Rights office, scheduled for November, was cancelled due to the strike of Government Licensed Professionals and has not yet been rescheduled.

**Operation, Maintenance and Surveillance Manuals**

Each dam has an Operation, Maintenance and Surveillance Manual ("OMS Manual") for Dam Safety that identifies responsibilities and expectations within BC Hydro for maintaining the safety of the dam. These Manuals are required by the Dam Safety Regulation and must be updated every seven to ten years, depending on the dam's failure consequences classification.

Falls River Dam and Elko Dam OMS Manuals were issued in December 2025. The interim update to the Coquitlam Dam OMS Manual was also issued in early Q3. Updates to the Peace Canyon Dam OMS Manual to include instrumentation that was installed recently have been delayed while record-issue drawings are completed. Updates to the Clowhom Dam OMS Manual will begin in Q4.

Extension letters were also issued in December for all OMS Manuals which had expiry dates included in the Disclaimer in the front of the manual. The use of expiry dates ceased in 2022 and all OMS Manuals have been extended to the date required by the BC Dam Safety Regulation.

**Dam Safety Reviews**

Dam Safety Reviews are independent, systematic reviews and evaluations of all aspects of a dam's physical condition, design, construction, operation, maintenance, processes, and other systems affecting the safety of the dam. Performed by external consultants, they are carried out at minimum intervals of every five to ten years for dams that are classified in accordance with the Dam Safety Regulation as High, Very High, and Extreme consequence dams.

Five Dam Safety Reviews – for Alouette, Duncan, Elliott, Revelstoke, and Seven Mile Dams – were completed in 2025 and submitted to the provincial Dam Safety Officer for acceptance. The findings of three of these reviews have resulted in the need for further discussion and action as described below.

The Elliott Dam Safety Review recommended that the consequence classification of the dam be reassessed based on the presence of the campground in the inundation zone. This review will also involve a reassessment of the consequences of the upstream Jordan Diversion Dam.

The Revelstoke Dam Safety Review identified that the spillway chute can only pass about 36% of the design flow before overtopping of the chute walls due to bulking of the flows caused by aeration slots. The aeration slots were added to the design of the spillway late in the process to reduce the risk of cavitation. An external review by Peter Mason has confirmed BC Hydro's earlier findings that the risk of cavitation is low and that the aeration slots are likely not required. Plans to restore the spillway chute to its design capacity are being explored.

Five Dam Safety Reviews are underway for completion in calendar year 2026 - Mica, Hugh Keenleyside, Buntzen, Quinsam Diversion, and Quinsam Storage Dams. Site visits have been completed and draft reports are in progress. Completion of all five reviews is expected in late Q4 or early F2027.

The Request for Proposals for multi-contract consulting services agreements was posted in Q3 with a closing date in January to establish engineering services to carry out Dam Safety Reviews for F2027 to F2030. Evaluation of the proposals and the awarding of contracts are planned to be completed in Q4.

## Surveillance

Key activities comprising dam safety surveillance include inspections, monitoring of instrumentation, quality control of data, and characterization of dam performance. Table 2 below provides key metrics regarding these activities, which are described in the following sub-sections of the report.

**Routine Dam Inspections**

Routine weekly and monthly inspections are a regulatory requirement. These visual inspections are carried out by trained inspectors within Dam Safety or Stations Field Operations using checklists prepared by the Dam Safety Engineer. The purpose of these inspections is to identify changing conditions at a dam, reservoir, or appurtenant structure that could threaten the safety of the dam. In the third quarter there were two missed inspections resulting in 418 of the 420 scheduled routine inspections being completed which is within our target. The missed inspections are considered an isolated issue due to crew being reassigned to address an emergent issue and subsequent inspections have been completed as scheduled. As of the end of the quarter 1166 out of 1170 inspections have been completed.

**Table 2** Dam safety inspections and surveillance activities.

| | | Quarter Q3 | | Fiscal Year F2026 | |
|---|---|---|---|---|---|
| | | Actual | Target | Actual | Target |
| Routine dam inspections | Completed | 418/420 = 99.5% | 99% | 1166/1170 = 99.6% | 99.5% ✓ |
| | Missed | 2 | | 4 | |
| Formal (annual and semi-annual) dam inspections | Field work completed | 24 | 18 | 73 | 73 ✓ |
| | Reports issued | 16 | 21 | 39 | 31 ✓ |
| Instrumentation data checks | | 197/195 = 101% | 97% | 585/585 = 100% | 99% ✓ |
| Reservoir slopes inspections | Field work completed | 6 | 4 | 16 | 16 ✓ |
| | Reports issued | 6 | 5 | 7 | 6 ✓ |

**Formal Dam Inspections**

Formal inspections of the dams are regulatory inspections conducted by Dam Safety Engineers on a semi-annual or annual frequency, as determined by each dam's Consequence Classification. These inspections involve a comprehensive visual inspection, a review of the monitoring data collected through the course of the year, and an assessment of the condition of the water containment and conveyance structures. The field work for all 73 inspections were completed as of the end of the calendar year (Q3) and 39 reports have been issued to date compared to an internal work target of 31.

**Instrumentation and Monitoring**

Dam Safety Surveillance collects, checks, and assesses about two million data points a month and with Site C this will substantially increase due to the type of instruments and reading frequency for a new dam. A vast majority of the data is collected and checked against threshold values automatically by the Automated Data Acquisition System. Even though most of the data is checked automatically it is essential that qualified staff review the data regularly to ensure the systems are functioning as expected. The Dam Safety Technologists in each region regularly check instrumentation data plots for all dams to ensure the Automated Data Acquisition System is functioning as expected, identify any unusual trends, and ensure continued accuracy of the data for ongoing engineering assessment. They are tasked with perform three such checks per week. A total of 197 checks were completed in Q3 exceeding the target of 195 checks.

**Reservoir Slopes**

Reservoir Slopes inspections are completed on a frequency ranging from semi-annually to once every ten years, depending on the assessed hazard of the slope. They are typically carried out by the Reservoir Slopes Geologist and the Specialist Dam Safety Engineer for the Upper Columbia Region. Each inspection generally consists of a review of all monitoring data, a visual inspection completed from a helicopter with boots-on-ground assessment of identified areas of

concern, and documentation in a sealed engineering report. In F2026, 16 reservoir slopes inspections are due for completion. The field work for all 16 inspections was completed as of the end of Q3, and reporting is ahead of schedule with 7 issued reports compared to a target of 6 reports.

**Unusual Events or Observations**

The Dam Safety on Call Person responded to 103 calls in Q3, which typically includes instrumentation alarms, operational inquiries, operations notifications during high inflows and earthquake notifications. This number of calls and responses was slightly above normal due to increased instrument alarms during the high inflow events in November and December.

Between December 14 and 19, a significant atmospheric river event impacted multiple Lower Mainland and Vancouver Island facilities. High inflows resulted from a combination of sustained heavy rainfall and snowmelt driven by rising temperatures. The event is estimated to be approximately a 1 in 10-year return period.

Reservoir levels entering the event were elevated at some facilities due to a series of smaller storms in October and November. Despite these starting conditions, the December event was successfully managed. Reservoir levels were largely maintained within flood buffers and below Maximum Normal Levels, and discharge rates were kept below thresholds that could cause environmental, property, or public safety impacts downstream.

The most notable impacts occurred at the following facilities:

- **Coquitlam Dam**
  Reservoir levels peaked at 154.3 m— the highest level since the dam was rebuilt in 2008 and the highest in approximately 30 years. Active, continuous operation of discharge facilities was required, supported by 24/7 staffing. A flood alert was issued for the Coquitlam River on December 16; however, subsequent adjustments to discharge rates mitigated flood risk and prevented downstream damage.
- **Lake Buntzen Dam**
  Flows through the Coquitlam–Buntzen Tunnel were actively managed to ensure spillway discharge rates remained below levels that could damage infrastructure.
- **Campbell River System**
  Strathcona Reservoir peaked approximately 0.02 m below Normal Maximum Level. Discharges throughout the system were managed to avoid environmental impacts and overbank flooding.

Following the event, elevated discharge levels were maintained for several weeks to reduce reservoir storage and restore operational flexibility ahead of potential future storms.

During the event, Dam Safety Engineers worked closely with Operations Planning, Field Operations, Natural Resource Specialists, and Community Relations to balance dam safety risks associated with higher reservoir levels against downstream impacts from increased discharges. Throughout the event, all facilities were operated in a manner that ensured the safety of the dam while minimizing impacts to people, property, and the environment.

The dams are designed to safely pass flood events significantly larger than this December storm, provided all infrastructure performs as intended. Key dam safety risks associated with large flood events, and their mitigations, include:

- **Spillway Gate Reliability:**
  Managed through ongoing maintenance, regular testing, and targeted upgrades to spillway gates.

- **Debris accumulation reducing spillway capacity:**
  Addressed through routine inspection and maintenance of debris booms, ongoing debris management, and enhanced surveillance during high inflow periods.
- **Potential spillway damage during high discharges:**
  Mitigated through regular inspection and maintenance of spillway chute concrete.

Overall, the December storm was managed effectively, demonstrating the resilience of the dam systems and the effectiveness of operational coordination during high-inflow events.

## Civil Maintenance

Results for the Preventive and Condition-Based Civil Maintenance programs are summarized in Table 3, below.

**Table 3** Dam Safety and Generation Civil Maintenance for F2026.

| | | Quarter Q3 | | Year-to-date | |
|---|---|---|---|---|---|
| | | Actual | Target | Actual | Target |
| Corrective and Condition-Based Maintenance | Spend ($k) | 720 | 1044 | 3553 | 4019 |
| | Work Orders Completed | 13 | 15 | 24 | 26 |
| Preventive Maintenance | Tasks Completed | NA | NA | NA | |

**Preventive Maintenance**

In Q3 of F2026, the Stations SAP (SSAP) project continued to stabilize following its operational launch, with ongoing efforts focused on data migration, reconciliation, and user adoption. SSAP replaces legacy systems such as PassPort and consolidates work management process into the SAP Enterprise Asset Management (EAM) platform, improving asset information tracking, work management and related workflows. Advances were made in refining the effectiveness of work management processes within the SAP Enterprise Asset Management (EAM) platform.

While progress has been made, reporting capabilities remain temporarily constrained as user training and the transition from the legacy systems continues. Monthly reviews with delivery partners have confirmed that work volumes are tracking close to historical levels. Reporting is anticipated to resume once data quality and process alignment are confirmed, with the revised format expected to reflect the enhanced functionality of SSAP and the priorities of the Dam Safety Program.

**Corrective and Condition-Based Maintenance**

As of the end of Q3, the Corrective and Condition-Based Civil Maintenance Program made progress, with 24 projects completed against a target of 26.

Two notable projects completed in Q3 included enhancements to the debris protection features for the exposed penstock and surge tank at Aberfeldie Dam.

At Aberfeldie, routine inspections by the regional Dam Safety Engineer had previously identified debris accumulation against a section of exposed steel penstock from an adjacent slope where no rockfall barrier had been installed. Additionally, it was noted that the lock blocks installed as a debris barrier to protect the surge tank showed signs of

settlement, raising concerns about their stability and long-term effectiveness. Both scopes of work were successfully completed by the Vernon Construction Services team. For the slope adjacent to the penstock, the team performed scaling to remove loose debris, followed by installation of rock anchors and an extension of steel mesh to cover previously exposed areas. The existing lock blocks and debris fence were removed, and the slope above the surge tank was excavated and regraded to a more gradual slope. A pedestal foundation with integrated drainage was then constructed to support the new lock blocks and debris fence.

Other Q3 projects included sealant repairs at the transition dam and the weir houses at Coquitlam Dam, greasing of trunnion anchors at Duncan Dam, inspection and cleaning of formed drains at Revelstoke and Hugh Keenleyside Dams as well as cleaning of the underdrains at the Mica spillway.

**Figure 5** Left: Previously accumulated rockfall debris against the downstream section of the penstock from the exposed slope. Middle: Excavated and regraded slope above the surge tank, with upgraded lock block barrier and debris fence. Right: Geo-mesh installation on the slope following scaling and debris removal.

## Spillway Gate Testing and Maintenance

### Spillway Gate Testing

During Q3 of F2026, 234 of 239 scheduled gate tests were completed. This includes the Full Opening tests of 7 gates. Table 4 below provides key metrics related to spillway gate testing.

**Table 4** Spillway gate testing results for F2026.

| | | Quarter Q3 | | Year-to-date | |
|---|---|---|---|---|---|
| | | Actual | Target | Actual | Target |
| Monthly Tests | Completed | 234/239= 98% | | 697/706 = 99% | 98% ✓ |
| | Missed tests | **5** | | **9** | |
| Gates Failing to Operate on Demand during Testing | No. of failures | **0** | | **0** | |
| | Failure rate | 0/234 = 0% | | 0/697 = 0% | |

No gates failed to operate on demand during testing in Q3.

Modifications to gate testing scopes (e.g., to exclude gate movements) are authorized in circumstances where: there would be the potential to cause harm to species at risk or other deleterious environmental consequences; there would be

the potential to cause damage to the gate system or other infrastructure; or gates are locked out to support the safe performance of downstream or adjacent construction activities and returning the gate(s) to service for testing would be impracticable. Authorization for such exemptions is either provided for in Maintenance Instructions, where those circumstances occur routinely, or by the Director of Dam Safety or delegate in unusual circumstances. In Q3, gate testing scopes were modified to exclude gate movements on 21 of the 234 tests completed.

**Gates Out of Service or Under Restricted Service**

The availability of flood passage devices is a key measure of our ability to pass high inflows and manage reservoir levels. The two sections below summarize the known concerns.

**New issues this quarter**

At Sugar Lake Dam in October, one of the four outlet works gates stalled while opening during the monthly test using one of the two pumps. The test was completed using the other pump. The field maintenance engineer has recommended pump setting changes which will be implemented.

At La Joie Dam, in December, a forced outage resulted in, among other things, a generating unit forced outage and an approximately one day loss of station power and telemetry. While attempting to restore generation the pressure regulating valve (a flood discharge device) adjacent to the generating unit inadvertently opened and quickly increased downstream flows from 32 $m^3/s$ to 93 $m^3/s$. Operations were able to reduce flows after approximately one hour. The generating unit and pressure regulating valve remain out of service in mid-January, with the two hollow cone valves at the dam fully functional and managing flows. A root cause analysis is under development.

At Clowhom Dam in December the spillway gates were successfully tested using station service power, however the standby diesel generator was having issues running longer than 5-10 minutes. Stations Field Operation has identified a suspected issue with the fuel and is planning a contractor visit to clean the storage tank and filter the fuel.

**Update on existing issues**

The issues below have previously been reported but remain out of service or under restricted service, so a short update is provided.

- At Stave Falls Dam, in June and July, the two battery backup power supplies were found to be non-functional. This is a repeat of a previous issue. Replacement parts have been ordered and the backup diesel generator located at the powerhouse is being used to test the gates monthly pending repair.
- Comox Dam spillway operating gate 2 is in service, but was unable to close completely during high reservoir levels this spring. Troubleshooting through the summer was unable to reproduce or identify the problem. A work procedure has been developed to manually assist the gate to close and the gate is being monitored as reservoir levels rise through the fall. Replacement of the gate and hoist is planned for 2026 as part of the Comox-Puntledge Flow Control Improvements Project.
- At Falls River Dam, intermittent issues with remote spillway gate operation from the control center persist. Local operation of the gate is tested quarterly. This is a recurring issue, and investigations continue, but no major interventions are planned pending the update of the Facility Asset Plan (currently under development).
- At Revelstoke Dam, one of the two outlet works gates was unable to operate in cold temperatures in February 2025. The gates have been functional when tested each month since February and the field maintenance engineer continues to develop a root cause analysis. The investigation indicates the gates are likely inoperable in cold weather; testing will continue through the winter to improve our understanding of the limitation.

**Flood Discharge Gate Maintenance**

Due to the SAP transition (as described in the Civil Maintenance section), the maintenance completions for F2026 Q3 are not available, so they not been included. Inclusion of these results will be evaluated as the changes in business processes are aligned with the enhanced capabilities of SSAP. The number of outstanding flood discharge gate reactive operations is shown in the chart in Figure 6. As a process improvement, the transition to SAP is allowing the inventory of work to be determined based on equipment rather than manual tagging. The SAP orders are shown in a new data series and an accompanying step change in the chart. The approach is being refined and further changes may be implemented next quarter.

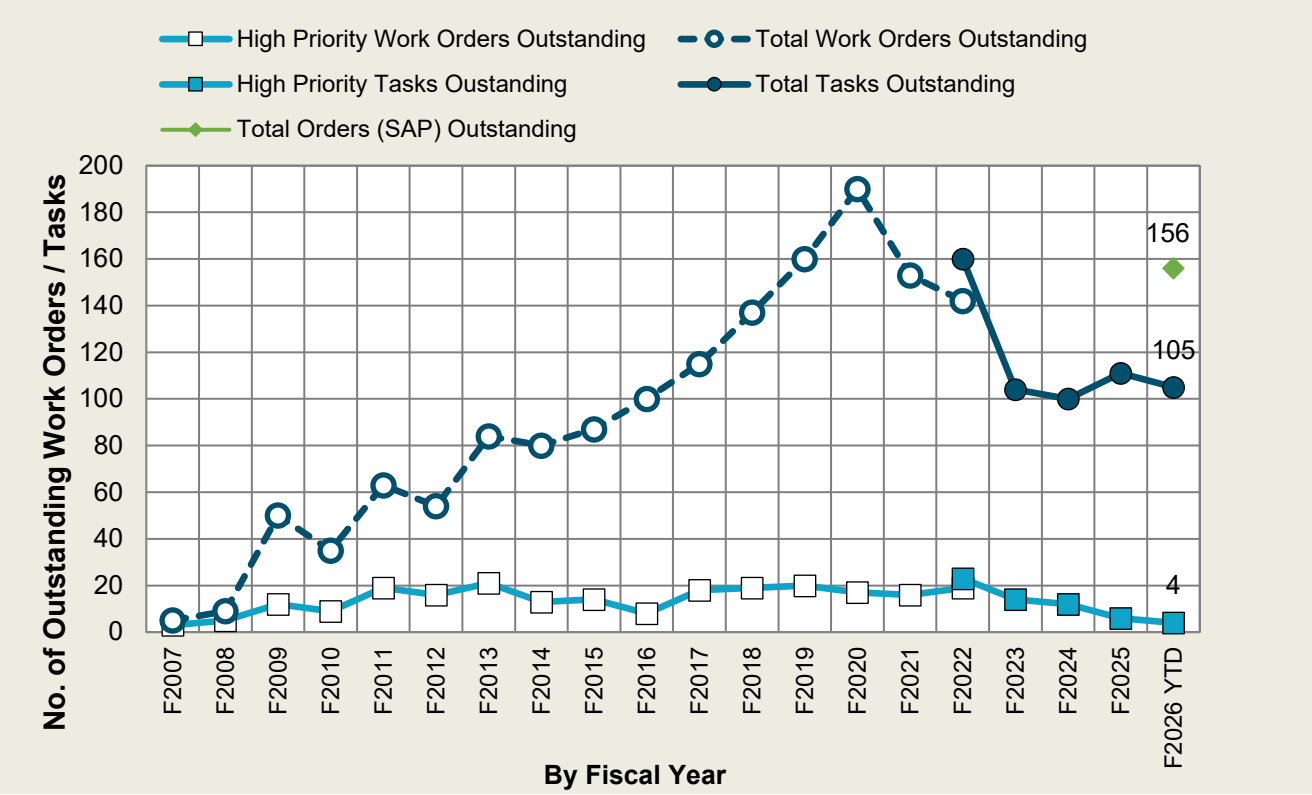


**Figure 6** Outstanding reactive work on flood discharge devices

Notes:
1. In 2025, the system or record transitioned to SAP and a new series was created showing the outstanding SAP operations.
2. At the conclusion of F2022 moving forward into F2023, figures were restated as outstanding tasks instead of outstanding work orders to align with Operations reporting.

## Emergency Preparedness and Public Safety

Emergency Preparedness is managed by Emergency Management. Dam Safety reports on the updating of emergency plans for compliance with the Dam Safety Regulation as part of annual reporting to the Comptroller of Water Rights. Public safety near dams and reservoirs is managed by the Public Safety team in Safety Programs. Dam Safety reports on Public Safety activities related to dams during the Dam Safety Reviews. Please refer to the Quarterly Safety & Emergency

Management Report, submitted to the Operations, Planning, Safety & Information Technology Committee, for updates on emergency preparedness and public safety.

As previously reported, Dam Safety and Emergency Management have been working together to plan and implement a series of tabletop dam safety emergency exercises. These exercises are part of a broader strategy leading up to a full-scale functional exercise in 2027.

The first step in this plan was completed on May 14 with a tabletop exercise held at Kootenay Canal. One corrective action and one recommendation for improvement to existing emergency response procedures were completed in Q2 and the remaining two corrective actions were completed in Q3. Planning for the next tabletop exercise began in Q3 and will continue in Q4 with the exercise occurring in F2027 Q1 or Q2.

## Site C Clean Energy Project

All six generating units are now in service and were successfully operated at about 1,185MW of output on December 15, 2025. Further testing of maximum plant output will take place in 2026 after the construction bridge removal and remaining tailrace excavations are completed. Work is ongoing to convert the spillway's three operating gates and six low-level operating gates to their final power supply and control systems. These upgrades will enable remote control, automatic spill engagement to maintain environmental flows in the event of an unplanned full plant outage, and the handover of gate operations from the project team to Stations Field Operations. The Interim Dam Safety Risk Management Plan, which governs spillway gate operation under temporary power supplies and local control systems, is being updated as gates are progressively taken out of service for the final commissioning activities.

Surveillance inspections and instrumentation monitoring continue to show positive results regarding the performance of the dam and water-retaining structures. The inspection frequency has been reduced to the BC Hydro Operations, Maintenance, and Surveillance standard rate of once per week and has been transitioned to the Dam Safety crews. Responsibility for the 2026 semi-annual inspection reporting has been transferred to Dam Safety. The instrumentation system remains with the project team and will be handed over to Dam Safety in phases beginning in early 2026.

The reservoir slope and shoreline monitoring program continues following reservoir filling. Shoreline erosion has been observed around most of the reservoir perimeter, typically more severe in overburden materials and minimal in bedrock areas. BC Hydro is targeting opening the reservoir and boat launches to the public in 2026 with the date to be determined due to the higher than normal snowpack in the Peace Region and the expectation that the resumption of the reservoir visual monitoring program will be delayed from April to May.

## Capital Projects

Summaries of Dam Safety Capital Projects are available for reference in the Dam Safety "book" in Diligent. This section of the report describes newly launched projects and provides updates for projects where significant developments occurred, or where milestones were achieved.

**Comox-Puntledge Flow Control Improvements**

The F2025 Q3 Quarterly Dam Safety Report described deficiencies in newly commissioned equipment that incurred operational reliability risks for the Comox Dam's spillway gates and one of the Puntledge Dam's intake gates. These included the excessive power draw of the spillway gates on the existing backup power supply at Comox Dam and the power draw and slow closure speed of a new intake operating gate at Puntledge Dam, and welding deformation of a new spillway gate at Comox Dam that prevented it from being installed as planned.

The project is in the Implementation phase and is focused on mitigating deficiencies of the new spillway operating gate and intake operating gate systems identified in the past year. The old Spillway Operating Gate 1 body is currently in service, along with the new hoist tower, screw stem hoists, electrical and mechanical components. The new gate body that had welding deficiencies has been re-welded and re-painted. The old Spillway Operating Gate 1 body will be refurbished in-situ and Spillway Operating Gate 2 will be replaced with the new gate body during a 2026 planned outage.

The issue with hoist actuator torque and hoist tower loading capacity will be mitigated by installing a new actuator with lower torque. The new actuator is currently pending installation of a new motor and revised protection settings. The backup diesel generator at Comox Dam will also be replaced. The RFP is planned to be issued in early 2026, with installation and commissioning expected in late 2026.

The new intake operating gate system underwent several successful tests in F26Q3. The slow emergency closing rate was resolved by adding ballast to Intake Operating Gate 1 without the need for heaters or backup power. In addition, the Intake Operating Gate 1 frame will be shifted upstream by five inches to resolve the misalignment issue, and the re-direct drum will be removed. These improvements are planned to be completed in the 2026 outage.

**Strathcona Upgrade Discharge**

The objective of this project is to provide deep drawdown capability to mitigate the risks associated with seismic and seepage deficiencies of the dam and to improve discharge capabilities. This will be achieved by a new low level outlet and free crest spillway which will replace the three existing vertical lift gates.

In F2026 Q3 the project received acceptance from the British Columbia Utilities Commission under Section 44.2(3) of the Utilities Commission Act for the proposed expenditure schedule. The first Leave to Construct was also obtained from the Provincial Water Management Branch, allowing the project to proceed with excavation and disposal of overburden materials.

**Ladore Spillway Seismic Upgrade**

The objective of the Ladore Spillway Seismic Upgrade Project is to upgrade the spillway gate system at Ladore Dam so that the spillway gates and associated structures can resist the loads from a major earthquake and the spillway gates systems can reliably function to release water in a controlled manner afterward. General Improvements to the reliability of the systems are also included.

Site construction work continued in F2026 Q3 with completion of the foundations and perimeter drains for the main control building and the backup control building. Work continues on the excavation and installation of duct banks, the foundation construction for the Battery Inverter System building and the Diesel Generator 2 building. Drilling and installation of the post-tensioned anchors remain in progress. The removal of the gate guides and sill beam of Spillway Operating Gate 3 is in progress.

**John Hart Dam Seismic Upgrade Project**

The construction works continued at John Hart Dam site as planned in Q3 with significant progress on the civil works. The downstream ground densification at the North Earthfill Dam was completed in early November and the placement of fill material on the downstream face is in progress. The first cut of the upper face of the Concrete Main Dam was completed in December, and the construction of the overflow spillway ogee crest commenced. Installation of post-tensioned anchors and construction of the overflow spillway and the road deck also continued. At the Middle Earthfill Dam, formwork for the right training wall was completed an concrete placement has commenced. In-reservoir rockfill placement continues. Work on the new elongated earthfill berm downstream of the Intake Dam and down the old penstock corridor continues. In-reservoir rockfill placement upstream of the Intake Dam has commenced.

The hydromechanical request for proposal for replacement of the spillway gates was also released in Q3.

**Figure 7** John Hart Dam Seismic Upgrade Project. Left: Construction of ogee spillway crest; Right: Left training wall and formwork

**Ash River - Elsie Dam Crest Restoration**

A 2021 survey identified that the crest levels of both Saddle Dams 3 and 4 at the Elsie Dam site were lower than design elevations by up to 0.5 m. A small capital project was raised in 2023 to restore crest elevations at Saddle Dams 3 and 4 to address the potential dam safety risks. The construction work was completed between Sept. 22nd and Oct 2nd, 2025. The dam core level and crest level at both saddle dams were restored to design elevations by placement of suitable earthfill material in respective zones.


**Figure 8** Elsie Saddle Dam 4 before (left) and after (right) dam crest raise

**Ruskin Dam Left Abutment Sinkhole Remediation**

This project was released to develop and implement remedial solutions to the causes and impacts of the sinkholes that developed on the left abutment of Ruskin Dam in 2020.

At the end of F2026 Q3, concreting and backfilling of the engineered drainage filter with special filter sand and gravel were nearly complete. Concrete placement for the Transformer 3 slab and curb walls is complete, and laying of the duct bank is ongoing. The main scope of construction is expected to be completed in Q4, with some electrical work planned towards the end of Q4 and early in F2027 in parallel with the re-commissioning of Generating Unit G3.

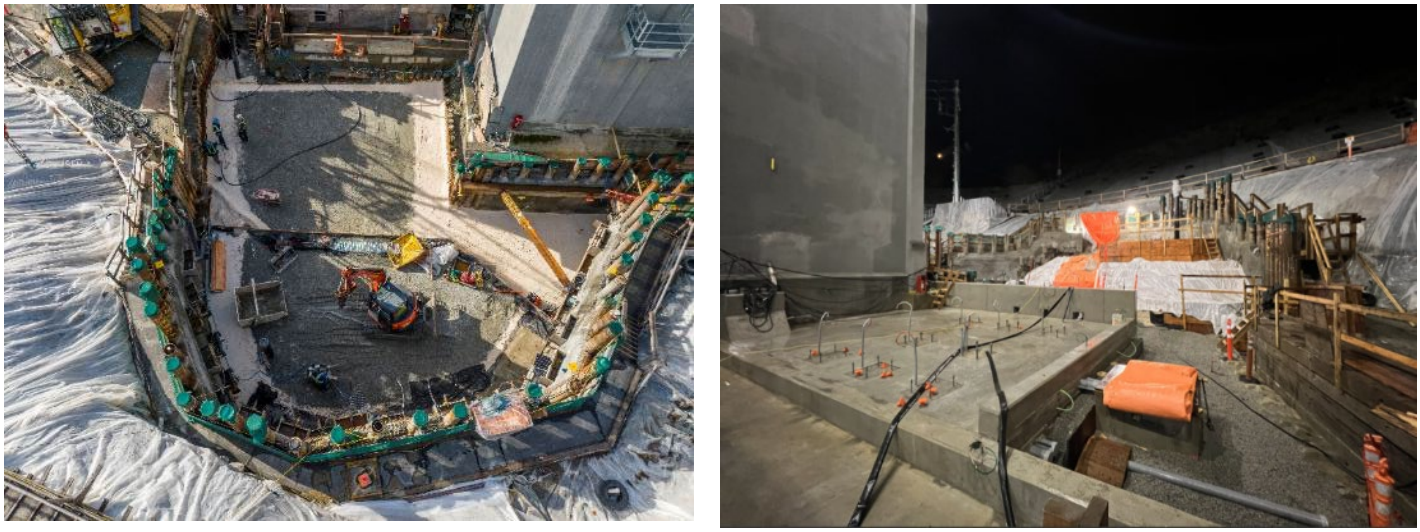

**Figure 9** Ruskin Dam Left Abutment Sinkhole Remediation. Left: backfilled excavation of engineered drainage filter. Right: Transformer 3 concrete slab.

**La Joie Dam – Dam Improvements**

The key dam safety issues at La Joie Dam include the ongoing deterioration of the dam's shotcrete facing and seismic deficiencies in both the dam and its intake tower. As an interim risk reduction measure, Downton Reservoir has been operated at a reduced level since approximately 2015, pending upgrades to the dam and full resolution of the associated dam safety risks. The objective of this project is to upgrade La Joie Dam, its intake tower, and other appurtenant structures to improve the integrity of the water barrier and enhance seismic resistance to a level appropriate for an extreme consequence dam. The project also includes consideration of post-earthquake reservoir control and will address several specific issues related to the dam's discharge gates.

In October 2025, Dam Safety and the Project team convened the first Advisory Board for the project. The Advisory Board consisted of Dr. Peter Mason and John France. Both are respected experts in the field of large dam construction and have acted as advisory board members on other BC Hydro projects. The Advisory Board's assignment was to respond to eight specific questions provided by BC Hydro related to the work done to date to characterize the issues at La Joie Dam and examine the alternative solution sets.

The Advisory Board was supportive of the project's proposal to proceed with an option that involves full replacement of the water conveyance system with limited replacement and refurbishment of the dam water barrier to decrease flow through the dam. This alternative would minimize investment in the dam and construct a new intake tower and water passage that could withstand the Maximum Design Earthquake. This option would contain the reservoir immediately following the earthquake, but would likely necessitate some repairs to the dam face. The new water conveyance would permit the active management of the reservoir level following the earthquake, including for drawdown of the reservoir to reduce consequences and to permit inspections and repairs of the dam to take place. In addition to the advantages to

operation and dam safety risks, the second alternative offers reduced project impacts and risks by requiring fewer deep drawdowns of the reservoir and a shorter overall construction duration.

The Advisory Board further provided advice on additional considerations for the project team to incorporate into their next stages of project development.

**Mica – Discharge Facilities Seismic and Reliability Upgrades**

This project was released in F2019 with the objective of upgrading the discharge facilities at Mica Dam to address flood, seismic, and reliability deficiencies to ensure safe reservoir containment, post-seismic operability, and safe passage of inflows provided by the discharge facilities. In August of 2025, Dam Safety initiated a scope review of the project in response to the extended Identification phase being experienced by the project and an update to the prioritization and sequence of flood discharge improvement projects.

In F2026 Q3, the scope of the project was updated to prioritize improvements to operational reliability of the gate systems, while deferring enhancements related to seismic and extreme flood performance. The current project will address the most critical reliability needs while maintaining flexibility for future seismic and flood related upgrades, which will be considered in a future investment.

**Revelstoke – Marble Shear Block Rockfall Mitigation**

The Marble Shear Block is a massive rock block located on the right bank which abuts the concrete dam and powerhouse. It underlies the spillway, and contains the compressed gas insulated bus tunnel. The most critical volume of the Marble Shear Block is instrumented and its stability is monitored using a combined displacement and piezometric pressure-based threshold. On October 5, 2022, a slope failure occurred on a steep but near-surface discontinuity of the Marble Shear Block which was not instrumented, and the failed material's run-out covered the parking lot. The subsequent inspection identified the cracks and rock mass features which can contribute to additional potential instabilities.

The objective of this project is to ensure an ongoing safe access for staff, vehicles and equipment to Revelstoke parking lot and powerhouse by providing adequate monitoring and/or stabilization measures at Marble Shear Block. The Project scope involves installation of adequate instrumentation/stabilization and/or rockfall mitigation measures to ensure that it is adequately supported and monitored.

Earlier phases of construction, including stabilization of the rock slope and application of shotcrete on the stabilized faces, were completed in 2024. The final phase of work was completed in Q2 and Q3 of F2026 and included the laying of rockfall drape mesh on the rock slope surface, repairing the damaged parking lot, and installing instrumentation to monitor the slope.

**Figure 10** Revelstoke - Marble Shear Block Rockfall Mitigation. Left: Shotcrete applied to stabilized faces Right: Instrumentation and draped mesh

**Hugh Keenleyside – Spillway and Low Level Outlets Concrete Upgrade**

The objective of this project is to repair the damaged concrete at the Hugh Keenleyside discharge facilities and energy dissipator. Damages at the water passages range from minor abrasion to erosion of several cubic metres of concrete to the point where reinforcing steel has been exposed, worn smooth or broken off. Operating procedures are being applied in the interim to reduce additional concrete erosion when possible; however, there is still a potential for rapid progression of damages leading to significant structural impairment of the discharge facilities. Repairing the concrete within the water passages is needed to ensure the continued, safe passage of water downstream to manage inflows and meet Columbia River Treaty obligations. The project will repair the concrete surfaces of the spillway, Low Level Outlet ports and energy dissipator to original or near-original condition.

Restoring the concrete surfaces will be a particularly challenging construction undertaking. The depth of the channel and the inability to take extended outages make isolating the site with a cofferdam impractical, therefore all concrete placement will need to be done underwater using divers. The project is planning to implement concrete upgrade work in two stages. Stage 1 will include a larger scale upgrade than the trial completed in 2022. Stage 2 will build off of any learnings from Stage 1 and make any necessary adjustments before completing the full construction scope.

The project received RFP submissions in F2026 Q3 and has started the process of negotiation with the preferred contractor. Stage 1 of construction is planned to commence in Fall of 2026.