Interim Risk Reduction Measures at Dworshak Dam

US Army Corps of Engineers ®
Walla Walla District

Fact Sheet

Powerhouse Capacity: 400 megawatts
Location: North Fork of the Clearwater River, River Mile 1.9, near Orofino, Idaho
In-Service Date: June 1972
Normal Operating Pool: 1,445-1,600 feet MSL
Spillway: 498 feet high, 2 gates
Reservoir Capacity: 3,468,000 acre-feet

Background

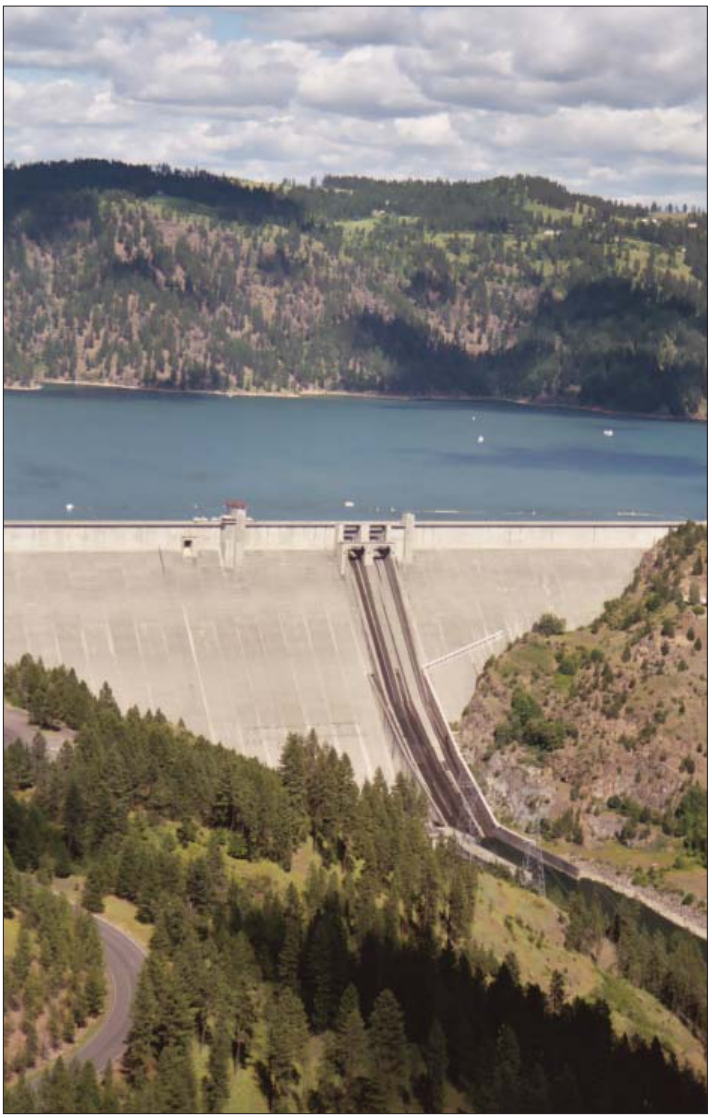
The U.S. Army Corps of Engineers (USACE) owns and operates 610 dams serving a variety of purposes including navigation, flood risk assessment, water supply, irrigation, hydropower, recreation, environmental enhancement, and combinations of these purposes. To ensure these dams do not present unacceptable risks to the public, USACE developed and is implementing a risk-based process to prioritize dam safety deficiencies on a nationwide basis.

As part of this process, USACE dams are being screened and assigned a safety classification rating. The new dam safety classification system spotlights dams and navigation locks with compelling problems first, so a national priority can be assigned for funding, studies, investigations and remedial work.

Dam Safety Screening and Interim Risk Reduction Measures

On 31 May 2007, the Corps released Engineering Circular (EC) 1110-2-6064, Interim Risk Reduction Measures (IRRM) for Dam Safety, which included a Dam Safety Action Classification (DSAC) table. The DSAC rating system describes a policy for developing, preparing, and implementing interim risk reduction measures to reduce the probability of unacceptable performance of Corps dams. Interim risk reduction measures, which may be structural or non-structural, are short-term efforts to reduce dam safety risks while long-term solutions are being pursued.

The Corps screening system classified Dworshak Dam, in the Walla Walla District, as DSAC II. Dworshak Dam, like any dam, has maintenance challenges and issues that are the focus of routine and periodic inspections, monitoring, and evaluations to ensure the public is safe. Public safety is the Corps' top priority and there is no evidence to suggest an emergency situation exists, or is about to occur, at Dworshak Dam.



Dworshak Dam Status

Dworshak Dam received a DSAC II rating primarily due to the consequences of failure rather than the potential for failure.

We believe the public should be aware, but not concerned, because Dworshak Dam presents no immediate danger to people and property below the dam.

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While inspections and studies show that seepage and leakage water is passing through the dam's foundation and/or joint drains, the probability of failure at Dworshak Dam is relatively low. The current potential for failure is low because although we see increased seepage and uplift pressure readings, we are not seeing any additional signs of cracking and stress in the monoliths which would be the signs that the risk of failure is increasing.

Should such a failure occur, however, the consequences in terms of public safety and economic well-being are very high. Conversely, if there were no development below Dworshak Dam, the risk would be very low.

What We Are Doing Now

Any situation that endangers public safety, of course, is unacceptable to the Corps and action is underway to minimize both the probability and risk.

The Walla Walla District has a very aggressive monitoring program that continually examines and inspects Dworshak Dam. Dworshak Dam personnel inspect the dam monthly during normal operating conditions. Engineers inspect the dam annually, and conduct more intensive Dam Safety Program periodic inspections every five years. We just completed our most recent periodic inspection in June 2007.

In addition, we have completed an initial stability analysis and determined that the uplift values are not high enough to overturn a monolith. Given this amount, type, and level of inspections and evaluation , we believe Dworshak dam is in good shape.

Also, the President's proposed budget for next fiscal year (FY09) includes $1 million to continue or initiate interim risk reduction measures (IRRM).

In the short term, to minimize risk to public safety associated with the conditions contributing to the DSAC II ratings, the Walla Walla District is implementing several interim risk reduction measures:

(1) Update the Emergency Action Plan (EAP) to include updating notification callout lists, modes of failure, and inundation maps (on-going).

(2) Exercise the Emergency Action Plan (EAP).

(3) Assess the existing Dworshak Dam communication systems.

(4) Perform a potential failure mode analysis.

(5) Complete the probable maximum flood reevaluation (on-going).

(6) Perform structural anaylsis to include an external stability analysis, finite element analysis, trunnion friction analysis for spillway gates, and verification of compliance with the Hydraulic Steel Structures Program (on-going).

(7) Improve seepage-water containment to include drain cleaning and repairing failed waterstops (on-going).

(8) Update the monitoring program to include modifying existing instrumentation system, repairing and upgrading instrumentation, and reevaluating monitoring frequency.

Throughout this process, the Walla Walla District is pursuing long-term, permanent solutions that will help it to determine what repairs the dam may require.

Walla Walla District will continue to keep the public informed of safety issues related to Dworshak and of the progress made in implementing the interim risk reduction measures.