

# WANAPUM DAM SPILLWAY UPDATE

## Grant PUD's response goals:

Grant PUD is working with teams of experts in their respective fields and through the consultation of stakeholders and regulators to achieve the following goals concurrently:

**S A F E  
O P E R A T I O N  
O F O U R  
H Y D R O  
P L A N T S I S  
O U R T O P  
P R I O R I T Y**

1. Stabilize spillway pier monolith No. 4  
*(achieved - March 4, 2014)*
2. Investigate root cause  
*(achieved - May 13, 2014)*
3. Intermediate pool raise to a normal minimum
4. Restoration of pool and spillway
5. Temporary mitigation:
  - a. public safety
  - b. cultural resources
  - c. fish passage
  - d. recreation
  - e. irrigation
6. Plant maximization and preservation

## BACKGROUND

**O**n Feb. 24, 2014, a worker at Wanapum Dam noticed that part of the dam's spillway deck had shifted slightly. Divers were called in to inspect the area on Feb. 27 and discovered a fracture below the water line on Wanapum Dam's spillway pier monolith No. 4. The fracture ran in a horizontal direction across the 65-foot width of the monolith and had a 2-inch opening.

### GOAL 1 - WANAPUM DAM IS STABLE

After consulting the Federal Energy Regulatory Commission, Grant PUD, which owns and operates the dam, began to draw down the elevation of the Wanapum reservoir by 26 feet to reduce pressure on the monolith. A survey of the structure on March 4 showed that the fracture had closed and the monolith was stable. A thorough examination of the upstream face of the dam found no other fractures.

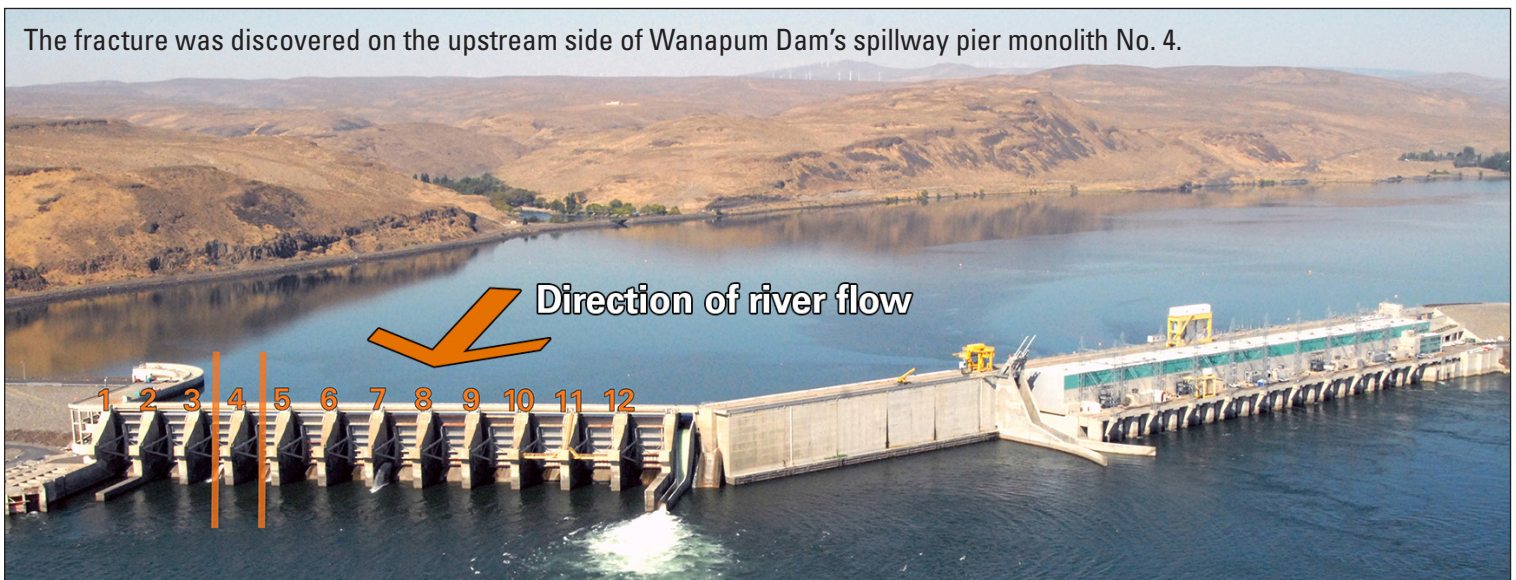
### GOAL 2 - ROOT CAUSE IDENTIFIED

A mathematical error was discovered during an examination of the original designs of the Wanapum Dam spillway. When engineers recalculated the original design formulas, they found that additional concrete and/or reinforced steel should have been included in the construction of the monolith No. 4 and all of the other 13 monoliths on the dam. Now that the root cause has been determined, Grant PUD and its contractors are working to repair monolith No. 4 and strengthen the whole spillway.

### GOAL 3 - INTERMEDIATE POOL RAISE

Repairs to the spillway will occur throughout the summer allowing the utility to raise the reservoir behind Wanapum Dam in the fourth quarter of 2014 by an additional 19 feet to an operating elevation of 560-562 feet above sea level. Shortly after this intermediate river level is reached, public access to the Wanapum shoreline and reservoir will likely be restored.

The fracture was discovered on the upstream side of Wanapum Dam's spillway pier monolith No. 4.



# WANAPUM DAM RESERVOIR DRAWDOWN

## GOAL 4 - RESTORING THE SPILLWAY AND RESERVOIR

Wanapum Dam's reservoir will be restored to its normal operating range once the repair and stabilization work is complete. Grant PUD is working to repair the spillway with its consultants and contractors. Repairs include additional steel reinforcement through the concrete into bedrock below the dam throughout the entire spillway.

## GOAL 5A - ENSURING PUBLIC SAFETY

The shoreline and boat launches on the Wanapum reservoir are closed to the public partly because of hazardous conditions. Grant PUD is working with law enforcement agencies to patrol areas closed to the public.

## GOAL 5B - PROTECTING CULTURAL RESOURCES

Grant PUD staff, security contractors and area law enforcement are patrolling the shoreline of the Wanapum reservoir to monitor and protect cultural resource sites seven days a week.

## GOAL 5c - PROVIDING FOR FISH PASSAGE

Working with stakeholders and regulatory agencies, Grant PUD modified its fish ladders to allow fish to safely pass at Wanapum Dam during the low reservoir elevation. More than 700,000 Chinook salmon, sockeye and steelhead have been observed successfully using the modified fish ladders. Working with regulatory agencies and stakeholders on the river, the utility has suspended a trap-and-haul program. The trap-and-haul program could be reinstated as a contingency if needed.

## GOAL 5D - FACILITATING SAFE PUBLIC RECREATION

Grant PUD recreation areas on the Priest Rapids reservoir are open to the public. The utility has accelerated planned renovations to boat launches on the reservoir, reducing environmental impacts and expenses.



## GOAL 5E - ADDRESSING IRRIGATION

All of the 11 irrigators with surface-water withdrawals on the Wanapum reservoir have successfully acquired permits to modify their irrigation systems.

## GOAL 6 - WANAPUM DAM CONTINUES TO OPERATE

At current levels, Wanapum Dam is capable of generating electricity at between 50 to 60 percent of capacity. The dam will be able to accommodate river flows in coordination with other dams operating on the Columbia River.

**Left:** Workers install an anchor tendon into the Wanapum Dam spillway. The anchor tendons will reinforce the spillway.



## What is a spillway pier monolith?

A spillway pier monolith is the structure that supports the spillway gates at Wanapum Dam. There are 13 spillway pier monoliths at Wanapum Dam. The fracture was found on spillway pier monolith No. 4.

## About Wanapum Dam

Wanapum Dam was constructed from 1959 to 1963 at a cost of \$93 million. It is located about six miles south of the community of Vantage in Central Washington and is 37.6 river miles downstream from Rock Island Dam, which is operated by Chelan PUD, and is 18.7 river miles upstream of Priest Rapids Dam, operated by Grant PUD. The dam has a rated capacity of 1,092 megawatts with its 10 generating units. It stretches 8,637 feet across the river with Grant County on its left bank and Kittitas County on its right bank. The dam is named after the Wanapum band of Native Americans who are indigenous to the region.

**FOR REGULAR UPDATES ON THE WANAPUM DAM SPILLWAY RESPONSE, SEE: [WWW.GRANTPUD.ORG](http://WWW.GRANTPUD.ORG)**

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