

MEMORANDUM FOR THE RECORD**SUBJECT: 23BCL02 Circuit Breaker A320 Fault****Description of the problem:**

On the afternoon of August 22, 2023, between 1200 and 1305, WFOP ramp rate limitations for the daily flow rate increase and decrease in the North Santiam River below Big Cliff Dam were exceeded. This incident was a result of the A320 230kV breaker tripping offline, resulting in Detroit Dam main units 1 and 2 and Big Cliff unit 1 entering an unplanned outage. At 1537 Detroit Dam main unit 2 and Big Cliff Dam unit 1 were returned to service.

Type of event:

Turbine unit outage.

Impact on facility operations:

Flows temporally increased from approximately 1160cfs to 1720cfs before returning to approximately 1190cfs. From 1200 to 1230 there was an .53ft ramp rate increase, above the WFOP limit of .3ft/hour and from 1230 to 1305 there was a .32ft ramp rate decrease, more than the -.2ft/hour WFOP limit.

Total dissolved gas (TDG's) also increased from 100% to 119%, above the ODEQ limit of 110%. By 2200, August 22, 2023, TDG's had returned to 100%.

Expected impacts to fish:

Impacts to ESA listed species are expected to be minimal. Collection of adult fish at Minto Fish Facility has slowed over the last two weeks. Adult fish held within the facility and those within the Minto to Big Cliff reach could be affected by the increase in TDG's, however the limited duration of the increase should keep impacts at a minimum.

The ramp rate increase and decrease could strand a minimal number of adult fish. Due to the temporary nature of the increase, the timing prior to the primary spawning season, and return to but not below gage height for the North Santiam River; it is unlikely that any redds were dewatered.

Corrective Actions:

Additional generation a Detroit Dam from August 22 to August 24, 2023, was scheduled to raise the Big Cliff Dam pool back to its normal elevation after the unplanned outage. All temperature and ramp rates will be maintained above the Bi-Op minimum.

North Santiam River at Niagara, OR - 14181500

August 20, 2023 - August 24, 2023

Streamflow, ft³/s ⓘ

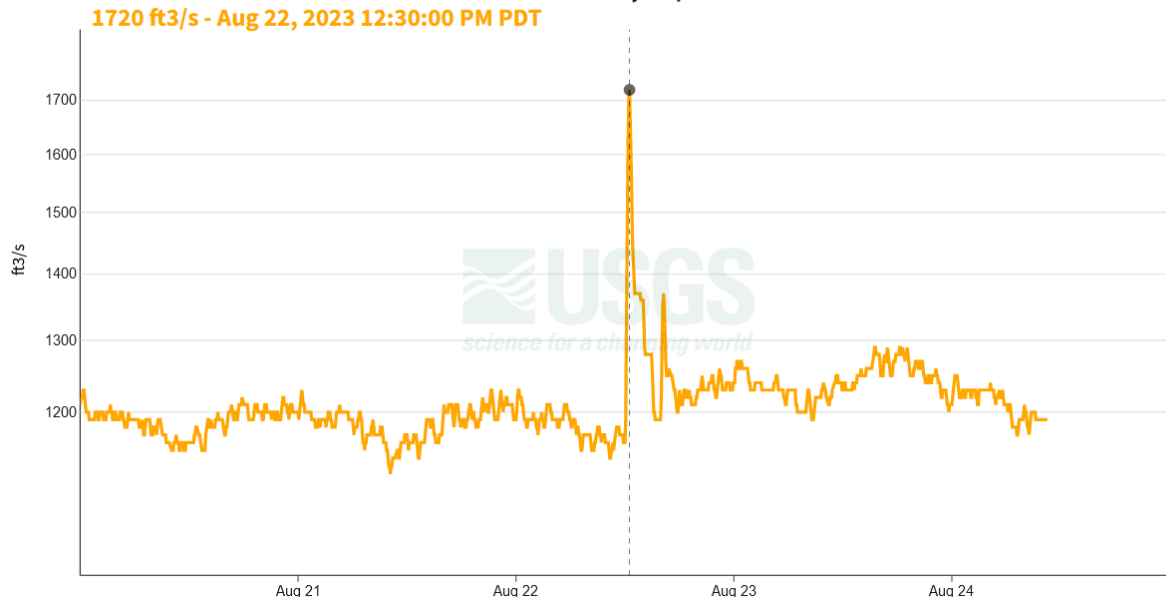


Fig 1. The increase in flow from Big Cliff project seen on 19 April before returning to normal.

North Santiam River at Niagara, OR - 14181500

August 20, 2023 - August 24, 2023

Total partial pressure of dissolved gases, water, unfiltered, percent of saturation ⓘ

119 % - Aug 22, 2023 04:00:00 PM PDT

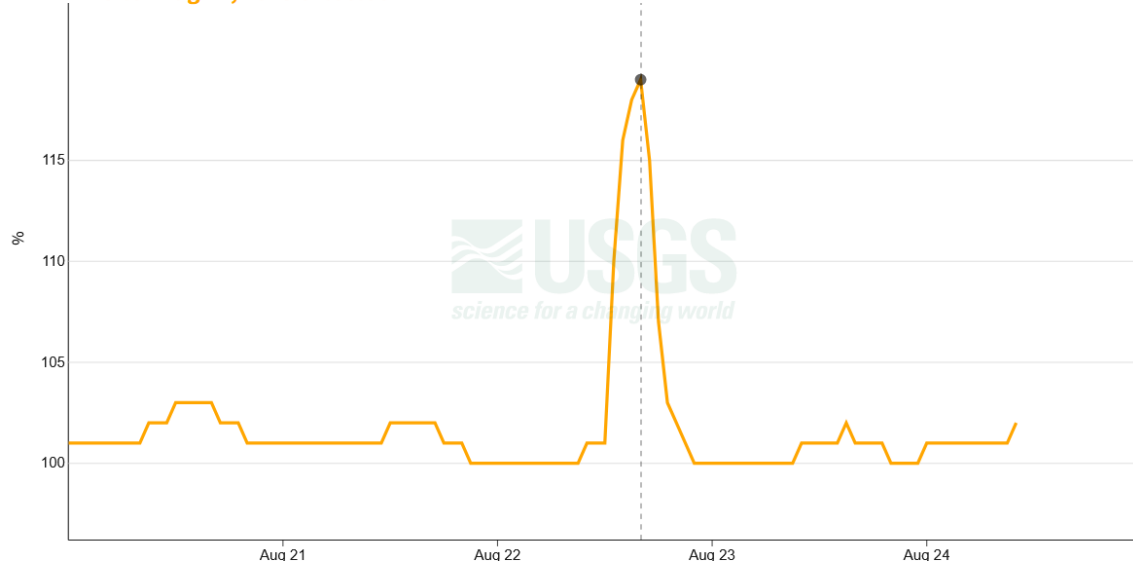


Fig 2. TDG's were temporally elevated above the 110% limit.

North Santiam River at Niagara, OR - 14181500

August 20, 2023 - August 24, 2023

Gage height, ft ⓘ

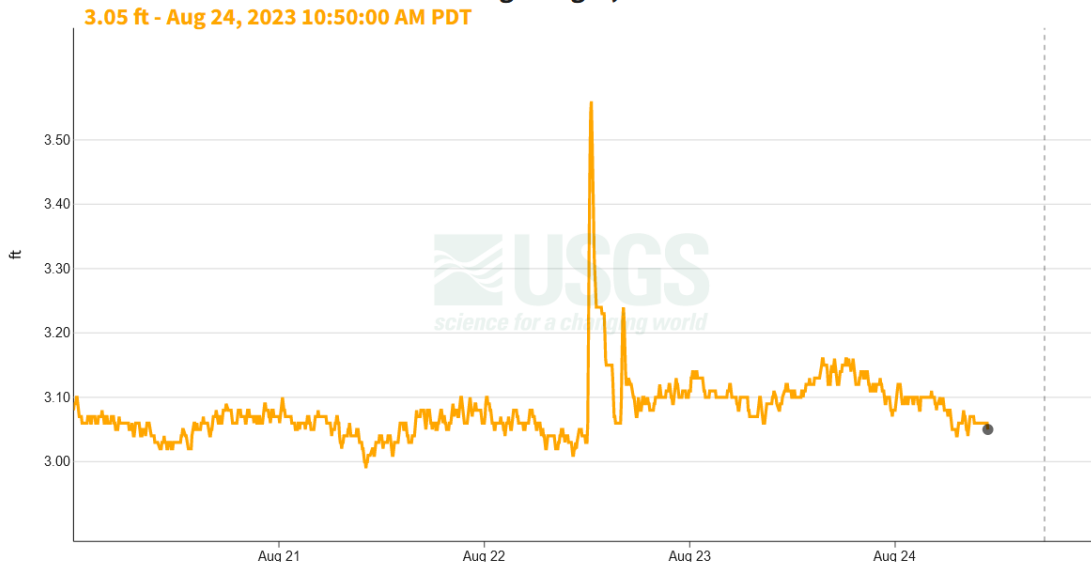


Fig 3. Gage height for the North Santiam River at Niagara. After the temporary increase on August 22, 2023, the gage height returned to but not below the previous height of approximately 3ft.

Comments from agencies:

No comments

Please email with questions or concerns, thank you.

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