

Current Operation of Rest Lake Dam

Flow Measurements

Flow Reporting Discrepancies

2008 Measurements

- Early Fall 2008 – Flows being reported by Xcel Energy were lower than what DNR biologists were measuring with in stream gauging techniques at a station about 1.5 miles downstream from the dam (below Highway 51).
 - It was determined that a leakage at the dam was not being taken into account by Xcel which caused Xcel's reporting to underestimate what was actually being discharged downstream.
- Xcel made some changes to the dam to minimize leakage.
 - Cinders were placed between the lower level stop logs later in the fall of 2008. Also, loose fitting and irregularly shaped stop logs were replaced with tighter fitting stop logs. This has been generally successful in reducing leakage through the dam's stop logs.
 - DNR staff were made aware of the cinders in 2009.

2009 Measurements

- July 2009 – Flows being reported by Xcel were consistently higher than the flow measurements being taken by DNR staff.
 - During this time frame, Xcel was reporting 40 cfs while the DNR was measuring 29 cfs.
 - This became critical when Xcel reduced their release to the minimum allowable flow.
 - A DNR biologist contacted Xcel regarding the 25% discrepancy in reporting during a time frame when the river is already being stressed even at the allowable discharge of 40 cfs.
- Xcel took measures to determine the reason for the discrepancy in their reporting.
 - Xcel determined that the new, untreated, stop logs expanded when they became totally saturated/waterlogged. This accounted for an additional 1.5 inches in the height of the dam's crest at the summer operating elevation. This was not accounted for in the equation used to calculate flow releases, so the flow was overestimated.
 - To verify that this correction accounted for the difference, DNR staff recalculated the release flows from the dam during the time frame of the 25% difference. The recalculated flows were very close to the DNR field flow measuring results.
- August to October 2009 – Flow measurements from DNR staff are consistently closer to what is being reported at the dam. In most cases, Xcel flow reporting is slightly higher than what DNR gauges.

Eliminating Reporting Discrepancies

- The contacts between DNR staff and Xcel have gone a long way in identifying and quantifying flow reporting irregularities.
- We will continue to monitor into the future to assure an accurate flow estimate.

