

# Lower Nisqually Flood Issues in TC

## FHMP July 19, 2017 Meeting

by Howard Glastetter

This is a subject of interest to me. I have lived in TC NV for 47+ years. I've had personal experiences with floods. Our group is currently developing the Flood Hazard Mitigation Plan (FHMP) for Thurston County (TC). At our June 21, 2017 meeting, I suggested the FHMP group draft a letter that The Board of County Commissioners (BoCC) send Tacoma Power (TP). The letter would suggest that TP keep the Alder Lake Reservoir level no higher than 10' below capacity in the fall/winter season. Current Federal Energy Regularity Commission (FERC) rules for Alder Lake seasonal levels are at the end of this document. In a nutshell, they state: *Lake water levels remain above 1,197.0 feet from Memorial Day to Labor Day and above 1,170.0 feet at all other times.* There are no rules to say the level must not exceed a certain height in flood prone times of the year. I recommend this be changed to *Lake water levels remain above 1,197.0 feet from Memorial Day to Labor Day and below 1,197.0 feet at all other times.* The Alder Lake Reservoir Pool is full at 1207'. I'd also suggest a copy of the letter be sent to FERC.

My justification for this suggestion follows:

The Nisqually floods are fairly common, but with a twist. Sometimes the Nisqually River (NR) floods when other state rivers are not. Other times, other state rivers are flooding and the NR isn't. **Why?**

Lower NR floods start at Alder Lake Reservoir. Mother Nature (MN) controls the Inflow to Alder Lake. Tacoma Power (TP) controls and mitigates the Outflow. Occasionally, MN overrides TP & TP has to exceed what it intends to release. December 2015 is an example. (I presented a report of this to the BoCC and the Storm and Surface Water Advisory Board (SSWAB) in the past.) Much larger floods, that I witnessed happened in 1977, 1995, 1996. These were all exacerbated by TP dam management.

TP has tried to keep the reservoir as full as possible through all seasons over the years with improved weather forecasts, they try to cut things even finer. This is acceptable in Spring/Summer when weather is normally quite stable, but not in Fall/Winter seasons. This risky behavior has caused problems (e.g., December 2015). In monitoring National Oceanic Atmospheric Administration (NOAA) graphic sites, I have often observed TP topping off the reservoir in the winter at 1' or 2' below capacity with a heavy snow pack in the hills. This is akin to Russian Roulette.

Further issues: TP's WEB site shows that their Riffe Lake Reservoir level will be held no higher than **30' below capacity** due to a new **earthquake** study. Their WEB site discussion of Alder Lake is a bit of double talk. Remember, FERC rules allows fall/winter level to be as low as 1170' (37' below capacity). TP's WEB site says "Alder Lake is considered a small reservoir and is unable to provide downstream flood control." Side point: In the devastating upper Nisqually flood of November 2006, the reservoir was 53' below capacity. The outflow caused the reservoir level to rise 37' in 32 hours with no flooding below the dam. MN provided the flood control that TP was "unable to provide", thanks to a previous dry summer and fall.

Furthermore, FERC sent TP a letter on 3/28/2017. They stated: "We have noticed a disturbing trend regarding the lack of attention to some of the Part 12D requirements". One of the documents FERC wanted from TP was a "Review of Site Seismicity". In otherwords FERC wanted the same study done on Alder Lake that had been done on Riffe Lake and caused TP to hold that lake at no higher than 30' below capacity year round.

Why care about all this? Floods are a natural part of nature. Right? No, not these kinds of floods. They don't just spread nutrients around. They spread pollutants around, damage property and are bad for both nature and people.

Last meeting (June 21), I recommended to those working on the FHMP that we suggest the TP reservoir pool level at Alder Lake be held to no higher than 10' below capacity (1197 feet) in the fall / winter seasons. Above are my reasons. This is not an unreasonable request, it's quite conservative. I ended my working life at Weyerhaeuser. Their company motto was: "Safety is number one". What is expected as a reasonable standard for private business should apply to public business as well.

Below are the Federal Energy Regularity Commission (FERC) rules for Alder Lake levels reservoir levels.

## **2.4 ARTICLE 404: RESERVOIR ELEVATIONS**

### **Background**

Article 404 of the Project license requires Tacoma Power to annually maintain the summertime

water elevation in Alder Lake to support recreation between Memorial Day and Labor Day. The

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article was revised in the Order on Rehearing dated November 27, 1998. The final license

article reads as follows:

*Article 404. Within 60 days following approval of the monitoring plan required by Article 408, the Licensee shall operate the project such that Alder Lake water levels remain above 1,197.0 feet from Memorial Day to Labor Day and above 1,170.0 feet at all other times, except as necessary to meet those minimum instream flows specified in the 1993 Decision Terminating Docket (63 FERC 61,026), to protect fish habitat and recreation opportunities in Alder Lake. If the water level in Alder Lake falls below these limits, the Licensee shall operate the project to conserve water such that the combined discharge of LaGrande dam and the LaGrande powerhouse is no more than 5 percent greater than the conservation flows listed below (necessary to meet the minimum instream flows specified in the Decision), or such temporary flows as the Nisqually River Coordinating Committee shall deem appropriate.*

*These limits may be temporarily modified if required by operating emergencies or flood conditions beyond the control of the Licensee, and for short periods upon agreement between the Licensee, the Nisqually Tribe, Washington Department of Fish and Wildlife, National Marine Fisheries Service, U.S. Fish and Wildlife Service and the Nisqually River Coordinating Committee. If these limits are so modified, the Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.*