

3/12/2020



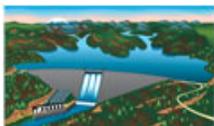
Some Dam – Hydro News™ And Other Stuff



Quote of Note: *“Light travels faster than sound. This is why some people appear bright until they open their mouths.” - Unknown*

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“Good wine is a necessity of life.” - Thomas Jefferson
Ron’s wine pick of the week: 2016 Jim Barry Syrah & Shiraz (Other than French) "Lodge Hill"
“No nation was ever drunk when wine was cheap.” - Thomas Jefferson



Dams:

(New book, it’s fiction.)

The poet on the garbage crew

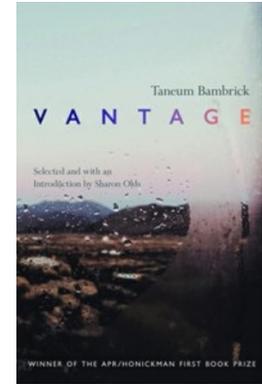
In ‘Vantage,’ Taneum Bambrick digs for refuse along the Columbia River.

By Austyn Gaffney Feb. 6, 2020, hcn.org

I become a part of this garbage crew, empty cans along the Wanapum pool. Peel condoms off rock beside fire pits — call them snakeskins. I learn quick.

So begins Taneum Bambrick’s poem Litter, unspooling her experience as a young person, and a woman, on a six-person garbage crew in eastern Washington. She fictionalizes this period of her life in her first collection, Vantage. **Circling the reservoirs of two massive dams on the Columbia River, the narrator uses litter grabbers to retrieve bodies from the water:** pit bulls, goats, cats, king salmon, even people. She learns to clean trashcans with lighter fluid and a cigarette, to issue commands and to set beaver traps. Together, she and her co-workers navigate the sexism,

classism, paternalism and intimacy that both build and corrode their relationships. In these poems, Bambrick offers an alternate vantage point on the working environment, and how we see the people who work within it.



The Columbia River divides the town of Vantage between working class and wealth. The original town — located near Hanford, one of the world's largest nuclear contamination sites — no longer exists. In the 1960s, its 20-mile basin was drowned to build a hydroelectric dam, one of 60 cutting across the massive river, undoing its ecosystems. The waterway is misshapen by human ingenuity and its errors: Fish ladders and hatchery ponds are built to save aquatic populations. Beyond the dam, the region is carved by power lines, agriculture and I-90. The Yakama Indian Reservation lies to the southwest, and members of the Wanapum Tribe live in Priest Rapids Dam, roughly 25 miles from Vantage. At times, Bambrick alludes to the area's longer history, reflecting on the erasure of Wanapum land as part of the dam's construction.

Instead of showing a bucolic riverside, Bambrick's poems focus on the landscape's human architecture. Her work takes pastoralism and flips it, revealing its vulnerable underbelly. The theme of refuse turns elegiac in this environment. The remains of 27 elk that shot off the canyon's



rim to their death become a curiosity residents call Elk Splat: Whoever'd spooked the elk was the kind of person we liked to imagine as one-rich-kid. What we were better than. We see the bodies of women turned into objects by the gaze and language of men. The narrator herself jumps from the company truck — clipping her forehead on the open passenger door — and onto orchard grass to escape this gaze from a co-worker. But the narrator's own gaze is critiqued, too. She recalls a day when two men showed her and

a crewmember the bloody bodies of 80 seagulls shot to protect salmon. Referring to our girl, they bring out the crown jewel of their collection — a heron with a hole blown through her chest by a hatchery cannon. When the narrator cries at the sight of one dead heron instead of the pile of dead seagulls, one man asks: What's the matter... Didn't you care about the gulls or were they too ugly? Her father tells her it's hard to get funding to restore the sturgeon fishery: It's an ugly fish, he says, it's difficult to elicit sympathy for them.

Within a puzzle of forms, including the lyric essay, it's the pitch and precision of detail in Bambrick's prose poems that glean tenderness. In Gaps, during the drive to work, her co-worker asks her to turn off her loud music and pay attention to the morning, the stillness of the hill-cut light and the quiet on the highway. I'm not denying this is a shit job, he says. It's the last one though. He is asking her to recognize this job is one of his last options, and to offer him some grace.



Climate change is already flooding our communities. More severe weather means the environmental damage we've already wrought is likely to get more ugly and more complicated, more expensive and more violent, especially for low-income communities and communities of color. Bambrick could highlight these dynamics more: She doesn't linger for long over how the displacement of one town compares to the displacement of Indigenous communities along the river. Some disappearances play larger roles than others. No place is more worth saving than the next: They're all worth saving.

Still, in looking beyond pastoralism, Vantage tries to write a place out of destruction. Bambrick wants us to witness madness along with the redemptive moments woven through it — to see that

highlighting violence could be an act of dismantling it. The attention she draws to one place could be drawn to many. No place is more worth saving than the next: They're all worth saving. The seagulls and the heron, the wasps and the mice, the cyclist and the sturgeon, the workers and the elk. As Bambrick writes, any attempt to save the river can only come with our collective memory of what the river means. I'm not denying it's a shit hole. It's the last one though. Austyn Gaffney is a writer, reporter and editor. Her work focuses on people, places, and the relationships that form between them. Email High Country News at editor@hcn.org or submit a letter to the editor.

(Making it safer. Goes to show how prices have changed in 70 years.)

Bluestone Dam's 20-year safety makeover to last nine more years, cost additional \$319M

By Rick Steelhammer, Staff writer, Feb 15, 2020, wvgazette.com

HINTON, W. VA — Construction is scheduled to begin in May to address the final structural issue remaining in the U.S. Army Corps of Engineers' effort to bring 70-year-old Bluestone Dam up to modern safety standards. While there is now light at the end of the tunnel after the two decades of upgrades and retrofits called for in the Corps' Safety Assurance plan for the dam, the tunnel remains long and costly. The project has already cost \$300 million and spanned 20 years. The final contract in the fifth and last phase of Safety Assurance work,



awarded to Brayman Construction, of Pittsburgh, late last month, will take nine years to complete and cost an additional \$319 million. Brayman is tasked with virtually rebuilding the dam's stilling basin — an artificial pool designed to allow energy from water released from the dam to dissipate before continuing downstream.

The contractor will armor the floor of the basin with a thick layer of concrete anchored to bedrock, and replace the original baffle blocks in the basin with 42 new and larger supercavitating baffles. A coffer dam installed last year by Brayman under a \$22 million contract bisects the stilling basin, allowing half of it to continue handling outflow from the dam while the other half is drained to accommodate construction. An estimated 60,000 cubic yards of rock and 65,000 cubic yards of earth will be excavated during the course of the contract, and more than 100,000 cubic yards of material will be used for bank stabilization. A batch plant operated onsite will produce the 90,000 cubic yards of concrete to be installed in the settling basin. Brayman's contract also calls for the restoration of a section of Belle Point Park now used as a staging area for construction materials and equipment once work on the stilling basin is done. New restrooms and a second baseball field will be added and playgrounds and day use areas will be improved. A fishing pier on the opposite side of the dam, removed to accommodate construction, will be replaced.

Bluestone Dam, built at a cost of \$30 million and operational since 1949, was designed to withstand the most severe 24-hour rainfall on record for its watershed, which at the time was a 1916 hurricane that dumped 13 inches of rain in the New River drainage area upstream of the dam. In the 1990s, the Corps of Engineers adopted a calling for its dams to be able to control a "probable maximum precipitation" new safety standard model developed by the National Weather Service. The new standard for Bluestone's Connecticut-sized watershed was a 20-inch rainfall within a 24-hour span. In order to process the inflow such a storm would produce and maintain the structural integrity of the dam, Bluestone would have to more than double the outflow capacity for which it was designed, according to a Dam Safety Assurance Study conducted in the mid-1990s. The study also determined that runoff from a 20-inch rainfall would exert enough pressure on the dam's concrete superstructure that it could potentially slide off the shale-bearing quartzite bedrock underlying it, eventually causing the dam to fail.

To make certain such a catastrophe won't happen, a Dam Safety Assurance action plan was developed and adopted, calling for five phases of work to correct the dam's deficiencies. The first phase of construction got underway in 2000 with the installation of large concrete thrust blocks to add support to the downstream face of the dam. **Six existing penstocks initially planned for use in a hydroelectric project were converted into an auxiliary spillway.** Later work included adding a giant concrete gravity monolith to the east abutment of the dam, and connecting the dam to nearly 500 high-capacity directionally drilled anchors secured in up to 175 feet of bedrock. Work began last year on the installation of electronics and machinery needed to make the dam's crest gates — opened at times of extremely high water — operable by a remote control system. **Although remaining work planned for the dam is expected to take nine years to complete, the completion date is significantly earlier than previously projected,** thanks to an emergency supplemental allocation for lake and river infrastructure needs attached to the Bipartisan Budget Act of 2018.

The allocation included more than \$500 million to complete all remaining work called for under Bluestone's Safety Assurance plan. Brayman's \$319 million contract from the Corps of Engineers accounted for the largest single contract issued through the 2018 allocation. According the Army Corps of Engineers' Huntington District, the ability to award a single contract to complete all safety assurance work on the dam accelerated completion of the project by six years. **While the project has been costly, Bluestone Dam is credited with preventing more than \$5 billion in flood damage to Hinton, Montgomery, Charleston, and other Kanawha Valley cities.** More than half of the water in the Kanawha River flowing through Charleston first passes through Bluestone, making the dam the most significant of the three flood control dams protecting the city. Since the dam's routine outflow capacity will be reduced while the stilling basin work is underway, with only half of its sluice gates operating, the water level in Bluestone Lake will rise more frequently and take longer to return to normal pool levels. **Whenever the volume of water flowing into Bluestone Lake exceeds 10,000 cubic feet per second, the lake will begin to rise.**

"Boat ramps, parking lots, campgrounds and other features at Bluestone Lake State Park and Bluestone Wildlife Management Area will flood more often at higher levels and for longer times," according to a Corps fact sheet on changes recreationists can expect during **the final construction period. Once the work is complete, lake conditions will return to normal. To compensate for the closure of a fishing pier** adjacent to the W.Va. 20 side of the dam to accommodate the final construction project, the Corps of Engineers installed a new fishing pier at Bluestone State Park. Immediately below the stilling basin, a 300-foot stretch of the New River will be off limits to anglers and boaters for the duration of construction work.

(Fixit!)

Springfield plans \$2.5M improvements to the Watershops Pond Dam

By Leon Nguyen | masslive.com. 2, 25, 2020

Springfield, MA - Springfield mayor Domenic Sarno takes a look down to the Watershops Pond Dam. **City officials on Tuesday announced plans for a \$2.5 million project to improve the dam off Hickory Street.** City officials on Tuesday announced plans for a \$2.5 million project to improve the Watershops Pond Dam off Hickory Street.



(What if they say dam removal won't solve any problems?)

For first time in 20 years, feds take deep look at hydroelectric dam removal on Lower Snake River

By Lynda V. Mapes, Seattle Times environment reporter, Feb. 27, 2020, .seattletimes.com

The futures of hydropower, salmon and orcas in the Pacific Northwest are at stake in the first assessment in 20 years of the environmental effects of dams on the Columbia and Snake rivers. Federal agencies are set to release a draft environmental impact statement (EIS) of dam operations on Friday, opening a 45-day public comment period. On the table will be a range of alternatives for operation of 14 dams in the federal Columbia River hydropower system, including a preferred alternative. The review was required by a federal judge in 2016, and must, among other things, assess dam removal on the Lower Snake.



Lower Granite Dam

It's the first new look at river operations across the entire Columbia Basin since new challenges have emerged for endangered species and the region's power grid. A warming climate has made both ocean conditions and the freshwater river environment tougher for salmon. Another endangered species has also been listed since the last EIS: the endangered southern resident orcas that frequent Puget Sound. The Bonneville Power Administration, which sells power from the dams, is struggling to maintain financial stability and remain competitive in changing Western energy markets. Years of surging expenses have led the agency to raise rates it charges the region's utilities, which pass higher costs on to ratepayers.

Southern residents rely on salmon from the Columbia and Snake rivers as a critical food source, and were listed as endangered in 2005.



They are headed to extinction in part because they do not regularly get enough salmon to eat. Orca and salmon scientists in a letter to the region's governors and congressional delegation on Feb. 20 said a review of the science shows dam removal is the best chance for recovering Columbia and Snake salmon. The four Lower Snake River dams were the last dams built in the federal Columbia hydropower system. Completed in the 1970s, they together provide about 5% of the region's electricity, enough to power a city about the size of Seattle. Growers also draw water from behind one of the dams to water some of the largest orchards and vineyards in the Northwest. In addition, locks built at the dams extend a navigable waterway all the way to Lewiston, Idaho, 465 miles from the Pacific Ocean. Barge transportation via the waterway is more efficient and less polluting than trucks or rail.

Most flood control is provided by the large storage dams in the Upper Columbia on both sides of the U.S.-Canada border and in Idaho.

The stakes are high as the region considers the best options for dam operations. For the first time in recent years, the possibility of power shortages has developed as coal plants have unplugged. Managing the surge of wind and solar power on the grid today relies on hydropower dams like the ones on the Columbia and Snake rivers to quickly balance delivery of energy through the system as demand fluctuates. To fight climate change, the region also is looking for more carbon-free energy sources, not fewer. In its review of the last EIS in 2000, the National Oceanic and Atmospheric Administration called breaching the four dams on the Lower Snake the most reliable path toward salmon recovery and survival. The agency is in charge of both salmon and orca recovery.

“By reducing the effects of one type of human activity, breaching the four Lower Snake River dams would provide more certainty of long-term survival and recovery than would other measures,” the agency found — but stopped short of requiring breaching. More than a dozen salmon runs remain at risk of extinction since then; not a single run has recovered. The region is facing another poor chinook season this year after a string of better years, especially 2015, that raised hopes. Long term, recovery rates have remained far below recommended targets to beat extinction. The population of southern resident orcas has declined to 72 whales. This EIS marks the sixth time federal agencies will try to come up with an operations plan that meets the requirements of the Endangered Species Act to protect salmon. Each time in the past, the state of Oregon, the Nez Perce Tribe and multiple fishing and conservation interests have won legal challenges to the agencies’ plans. Some are ready for a new approach.

“There is a fundamental question of whether the EIS can deliver the kind of broader solution the region needs,” said Todd True, an attorney with Earthjustice who represents plaintiffs in the long-running court battle to save Columbia and Snake salmon. People across the region are going to have to dig in and problem solve, True said. “At this point, multiple paths are needed and it will take some political leadership to forge a package that will get people on board.” Oregon Gov. Kate Brown said in a letter to Washington Gov. Jay Inslee on Feb. 11 that dam removal on the Lower Snake would be the best boost for salmon in the river to provide more food for orcas. She also called for a process to determine solutions to minimize economic harm from changes in dam operations. Even that mild letter brought sharp disagreement from river users. Kurt Miller of Northwest River Partners, which represents ports, utilities, industries, shippers and other dam users, said it’s time to agree to disagree about the dams and move on to other solutions. His group is looking to partner wherever there is common ground, Miller said, but dam removal is a non-starter.

“We are very clear that we believe the Lower Snake River dams are essential to the region achieving its clean-energy goals in a fair and equitable way,” he said. “We believe there are other ways to help salmon without removing this critical infrastructure.” Changes intended to benefit salmon have already been made in the hydropower system since the last EIS, including hundreds of millions of dollars’ worth of retrofits to the dams to help fish passage. A big change in river operations also was initiated last year in a so-called flexible spill agreement, intended to help salmon while keeping dams in place and boosting power revenues. The spill agreement through 2021 calls for spilling water over the dams, bypassing generators, to benefit fish when electricity prices are low. The agreement “demonstrates a spirit of collaboration and cooperation among people and organizations with diverse opinions,” the BPA and U.S. Army Corps of Engineers stated in a joint statement. Implemented in 2019, the program is a “promising start,” the agencies said, but evaluating its success will require more time. The review is being done by the Corps, the BPA and the Bureau of Reclamation. Their final EIS and record of decision is due in September. At that time, NOAA will determine in a biological opinion if the agencies’ preferred alternative for dam operations complies with the Endangered Species Act and adequately protects listed species, including orcas and salmon.

(Well the answer is in, but who will buy it.)

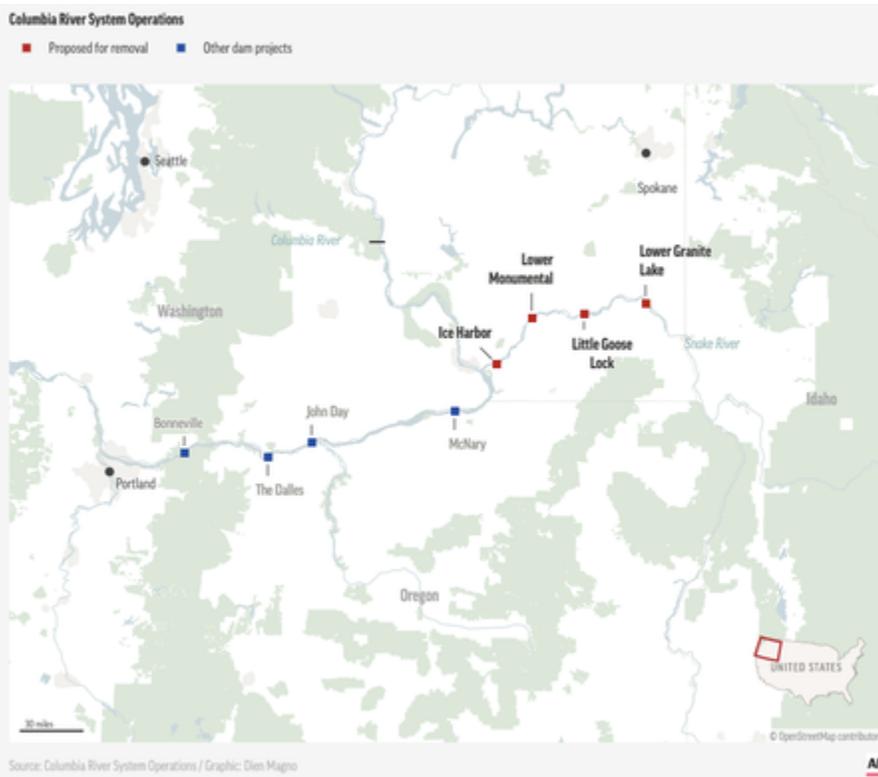
Long-awaited Snake River dam assessment rejects removal, recommends increasing spill to help endangered salmon

By Kale Williams | The Oregonian/OregonLive, Feb 28, 2020, oregonlive.com

A report from several federal agencies has recommended the four dams on the lower Snake River stay in place but that the amount of water spilled over those dams be increased to help endangered salmon. The Draft Environmental Impact Statement, which spans thousands of pages, is the sixth attempt by the federal government to operate the 14 dams that comprise the Columbia River Hydropower System in compliance with the Endangered Species Act. The five previous attempts have been rejected after legal challenges from environmental groups, the state of Oregon and local tribes.



The U.S. Army Corps of Engineers, the Bonneville Power Administration and the Bureau of Reclamation analyzed several alternatives, ranging from taking no action to breaching all four. While removing the dams would provide the best avenue to salmon recovery, according to the report, the option selected by the agency, referred to as the “preferred alternative,” calls for leaving them in place and increasing the amount of water released at select times of year to help with fish migration. The Ice Harbor, Lower Monumental, Little Goose and Lower Granite dams, all in eastern Washington, provide about five percent of the region’s electricity, along with irrigation for agriculture, flood management and navigation for barges from the mouth of the Columbia River near Astoria more than 450 miles inland to Lewiston, Idaho. But they also represent significant impediments to fish migration, one of several factors that have caused declines in salmon stocks in the Pacific Northwest. Southern Resident orcas, which live in the waters off the Pacific Northwest and feed on salmon, have also seen steep declines.



Since the last of the dams were constructed in the 1970s, billions have been spent on salmon recovery — establishing hatcheries, constructing fish ladders and implementing other habitat restorations initiatives. Environmentalists and salmon advocates have long pushed for removal of the dams, pointing to studies that show a free-flowing Snake River is the best way to help the imperiled salmon runs. Electric utility groups have argued the opposing

position, noting that hydropower represents a renewable energy source that should not be scrapped as regional governments look for ways to curb their carbon emissions. An analysis of dam removal in the report found that it would be the most beneficial alternative to salmon and other native fish species, but it also said the loss of power generation, without significant investment in other power sources like wind and solar, could result in more frequent power shortages and higher rates for consumers.

The release of the environmental assessment Friday drew quick criticism from those who favor breaching the dams. "Instead of taking the one step identified by scientists as absolutely crucial for salmon recovery, these agencies failed our region yet again," Meg Townsend, an endangered species attorney with the Center for Biological Diversity, said in a statement. "The science shows that pulling out the four lower Snake River dams is the only way to save Columbia river salmon and the Southern Resident orcas that depend on them." Ted Case, executive director of the Oregon Rural Electrical Cooperative Association, which represents 18 small power providers that serve half a million Oregonians with hydroelectricity harvested from the dams, welcomed the plan. "Oregon's electric cooperatives are pleased the (environmental assessment) recognizes the lower Snake River Dams are a critical part of the Northwest's clean energy future," he said. "The (plan) also concludes that breaching the dams would have adverse effects on power costs, particularly in rural counties, while putting the reliability of our electrical grid at risk."

Earlier this month, Oregon Gov. Kate Brown endorsed the eventual removal of the dams in a letter to Washington Gov. Jay Inslee, which spurred a sharp rebuke from rural electric cooperatives, as well as lawmakers in Washington and Oregon. After the letter went out, Brown's office tempered her stance, saying "we see value in analyzing a future without the dams in the long term, but focusing any definitive next steps on working together to identify a viable path forward to that future with interim steps such as flexible spill agreements." David Moryc, senior director of river protection with the group American Rivers, has worked on the Snake River issues for two decades. He said he thought the plan released Friday, like the ones that were struck down in court before it, was likely to face legal challenges. "We're asking narrow questions so we're getting narrow answers. What we need is a broader discussion around all of the communities that depend on the Columbia and Snake rivers," he said. "What we need is political leadership." The plan is now open for public comments for a 45-day period, after which, a final version is due by September.

(Many folks don't like them.)

Mine waste dams threaten the environment, even when they don't fail

http://www.sitnews.us/0220News/022720/022720_mine_waste_dams.html

(Are they circling the wagons?)

Community leaders gather in show of support for Snake River dams

By Carissa Lehmkuhl, March 2, 2020, yaktrineews.com

KENNEWICK, Wash. — The 'to breach or not to breach' conversation continued in Kennewick on Monday as community leaders gathered in support of the Snake River dams. A press conference was held to allow local stakeholders the chance to respond to the federal Environmental Impact Statement released on Friday. Agencies represented at Tuesday's event included Benton PUD, Franklin PUD, Port of Pasco, Tri-City Regional Chamber of Commerce, Benton Clean Air Agency and Benton Rural Electric Cooperative.



"Today's gathering is not a victory lap," said Mike Gonzalez, senior manager of public affairs at Franklin PUD. "There are still going to be many people who disagree with the conclusion of this

draft report to keep the dams, and **they're going to be very active trying to change it.**" The speakers brought a variety of perspectives to the table – addressing everything from the dams' effect on air quality to power generation. "I see firsthand the benefits the dams provide, including moving cargo up and down the river along with irrigation for agriculture" said Vicki Gordon, Port of Pasco commissioner and **owner of Gordon Estate Winery and Kamiak Vineyard.** Both sit right on the Snake River just below Ice Harbor Dam. Robin Priddy from Benton Clear Air Agency was concerned about Eastern Washington losing barging as a method of transportation and potentially replacing it with trucks. She said it would increase ozone levels in the Tri-Cities, which are already close to the federal standard due to its geography. "If we exceeded the federal standard, that would keep businesses from being able to develop or expand, and it would impact transportation projects," she said.

Another major concern brought up at the event was losing a source of clean electricity. Under legislation signed by Governor Inslee, Washington has been put on the path to be completely reliant on clean energy by 2045. **This also comes as another source of power – coal plants – are shutting down.** "If you start to retire that much electricity generation, you know then that what you have left is going to be incredibly important, and that's really where the lower Snake River dams come in," said Kurt Miller, executive director of Northwest RiverPartners. "They are carbon-free at a time when you aren't really allowed to add new carbon to the grid, and you're getting rid of a lot of your old carbon resources."

Those who want to breach the dams – like many environmentalists and tribe members – believe they are the largest contributor to lower salmon returns and declining orca survival. **However, many at the event felt that there are other factors at play, like warmer and more acidic oceans and predatory birds.** They said more could be done to help salmon and orca numbers apart from breaching the dams. "On the one hand, you have guaranteed harm to society and the environment, and on the other hand, you have questionable benefit," said Miller. "That doesn't seem like a good tradeoff."

A public comment period is now open for people to share feedback on the draft report. A public meeting will also be held in Kennewick on March 18. **The final version of Governor Inslee's state-funding stakeholder study on the dams is expected to be released this Friday.**

(It's about time they get to this. This a big dam!)

Seepage monitors installed at Oroville Dam

By Kelli Saam, March 3rd 2020, krcrtv.com

OROVILLE, Calif. — This week, the California Department of Water Resources (DWR) will install **eight new measurement devices at the base of the Oroville Dam.** The devices, called piezometers will monitor seepage and will be used to confirm seepage measurements that the DWR already collects. Seepage refers to a small amount of water that can pass through the dam. DWR said **seepage is normal and expected, especially in large, earthen dams like Oroville.** Seepage is measured and collected through a drainage system.



There were 56 piezometers originally installed in the dam fifty years ago which, as anticipated, have since stopped functioning. DWR plans to install additional piezometers throughout the facility in the coming years. If seepage were to dramatically change, it would indicate an issue that would need further investigation. This work is part of the Oroville Dam Safety Comprehensive Needs Assessment which is focused on identifying priorities and appropriate solutions **to bolster the integrity and resiliency of the Oroville Dam complex** to ensure public safety Work installing the new ones began this week and will continue for several weeks.

(Who said it was going to be cheap? Bet it costs more! It doesn't matter. When you start tearing them down, there's no turning back. Guess they never heard of change orders.)

Maximum price set for removing Klamath River dams

By GEORGE PLAVEN, Capital Press, Mar 3, 2020, capitalpress.com

KLAMATH FALLS, Ore. — The nonprofit organization working to tear down four hydroelectric dams on the lower Klamath River in southern Oregon and northern California has provided its latest cost estimate for the project to federal energy regulators. In a filing to the Federal Energy Regulatory Commission on Feb. 28, the Klamath River Renewal Corp. estimates full dam removal will cost \$446 million — within the project's \$450 million budget.

KRRC formed in 2016 as part of the amended Klamath Hydroelectric Settlement Agreement to carry out removal of the J.C. Boyle, Copco 1, Copco 2 and Iron Gate dams, opening about 400 miles of upstream habitat for threatened coho salmon and steelhead. But first, FERC must approve transfer of the dams' operating license from PacifiCorp to the KRRC, which submitted its 2,300-page "Definite Plan" for razing the four dams in 2018. Mark Bransom, KRRC executive director, said this latest filing proves they have the funding, team and expertise to get the project done. "Our project is on track, within budget and ready to roll," Bransom said in a statement. "Healthy rivers breathe life into the communities they touch. Dam removal and a revitalized Klamath River will enhance resiliency to strengthen the entire Klamath watershed for the future."

The \$446 million price tag is considered the "guaranteed maximum price," including \$199 million for Kiewit Infrastructure West, the project's main contractor, and \$78 million for Resource Environmental Solutions, which will head the environmental cleanup and restoration effort. Some \$50 million is earmarked as contingency funding for unanticipated costs, with the remainder covering personnel costs, planning and engineering work to date. Funding for dam removal comes primarily from PacifiCorp ratepayers, who have contributed \$200 million, and up to \$250 million from California Proposition 1, a \$7.5 billion statewide water bond that passed in 2014.

Built between 1911 and 1962, the lower Klamath River dams have a total generation capacity of 169 megawatts. Farmers, tribes, environmental groups and government agencies all signed on to the Klamath Hydroelectric Settlement Agreement in 2010 to remove the dams for fish passage. American Rivers, a Washington, D.C.-based advocacy group dedicated to protecting wild rivers, has stated the Klamath River restoration project is arguably one of the most significant dam removal projects in U.S. history. They might not be the tallest dams ever removed — the tallest of the four Klamath River dams, Iron Gate, stands at 173 feet tall, 37 feet shorter than the Glines Canyon Dam on Washington's Elwha River, which came down in 2014. Removal of two dams on Maine's Penobscot River in 2012 and 2013 also opened more fish habitat, at 1,000 miles. Yet the Klamath River dam removal is expected to cost more than those two projects combined. The Elwha River project came in at \$324.7 million, and the Penobscot River project at \$54 million. As part of the review process, an independent board of consultants approved by the feds will review the KRRC's latest filing and submit its own report to FERC in mid-March. The KRRC anticipates it will begin drawing down reservoirs for dam removal in 2022, though dates are subject to change.



Hydro:

(Necessary maintenance, more projects need to do that...)

Columbia's Riverfront Park closing for 2 weeks. Here's why

BY BRISTOW MARCHANT, FEBRUARY 25, 2020, thestate.com

COLUMBIA, SC - If you were planning to go for a daytime run or stroll along the river for the next couple weeks, you may have to make other plans. **Columbia's Riverfront Park is closing on weekdays for two weeks as crews conduct maintenance work,** the city Parks and Recreation Department announced on Monday. The park will be closed beginning Tuesday, but will reopen in the evening from 5:30 to 9 p.m. after work is done for the day. Riverfront Park will also continue to be open on Saturday and Sunday.



The closure will allow Dominion Energy to remove tree stumps from the canal levee, and repair areas where trees have recently been excavated, the city said in a release. The work is necessary to maintain dam safety, the release said. Trucks and other heavy equipment will be moving down the canal levee during the project, so there will be no access to either the canal trail or the lower trail along the river during weekdays. The Broad River Bridge ramp into the park will also be closed to bike and pedestrian traffic, **but the fitness center and restrooms will continue to be open along with the Esplanade.** Both the north entrance at 4122 River Drive and the south entrance at 312 Laurel Drive will be closed. Granby Park further down the river will continue to operate normally during the project. City officials said last month that Columbia is close to an agreement with FEMA for \$42 million worth of repair work on the canal from damage dating back to the 2015 flood, although that work has not yet commenced. That will also allow a hydroelectric plant on the canal to get back up and running, **adding an estimated 5 to 10 megawatts per day to the city's power supply.**

[\(More photos of the Oscillating water column.\)](#)

Oscillating water column gallery (Margot Krasojevic)

<https://archello.com/story/75440/attachments/renders/4>



[\(It's a preliminary permit, you can't build anything with a permit and they'll have to study the things mentioned.\)](#)

Proposed SF River dam, pumping project raises environmentalists hackles

By Ken Showers, eacourier.com, Feb 28, 2020

CLIFTON, CA — **A pumped storage dam facility proposed by a Phoenix-based company has come under fire from the Center for Biological Diversity.** The San Francisco River Pumped Storage Project was proposed by Pumped Hydro Storage LLC, which applied for a permit with the Federal Energy Regulatory Commission for the project. The permit came under fire from the Center for Biological Diversity last week, **which blasted the proposed dam as potentially damaging the region's watershed.**

"The San Francisco River Pumped Storage Project, proposed within protected areas of two national forests, would damage or destroy dozens of miles of critical habitat for five endangered species," the Center for Biological Diversity wrote in a release issued Feb. 21. The dam project would pump water from a reservoir on the San Francisco River to another located on an adjacent plateau in order to generate electricity. "The free-flowing San Francisco River is one of the last, best cradles of biodiversity in the Southwest. This disastrous project would be its end," said Taylor McKinnon, a public lands campaigner at the Center for Biological Diversity. **"We'll fight like hell to ensure this boondoggle is never built."** The project includes both reservoirs, power lines, buildings, a new substation in New Mexico and roads among other infrastructure. The Center for Biological Diversity charges all that infrastructure will affect protected wilderness areas within the Apache-Sitgreaves and Gila national forests.

In its legal challenge issued to the Federal Energy Regulatory Commission regarding Pumped Hydro Storage LLC, the Center for Biological Diversity stated that the application was incomplete, writing, “The application includes no mention of the proposal’s potential impacts upon the Lower San Francisco Wilderness Study Area on the Gila National Forest (which would be inundated by reservoir), Inventoried Roadless Areas on the Gila and Apache/Sitgreaves national forests, and on Wild and Scenic Eligibility Status (San Francisco River designated eligible on Apache/Sitgreaves, highly likely on Gila National Forest in new forest plan). In addition, the Application fails to mention the impact the proposal would have on federally threatened and endangered species, including Southwest willow flycatcher, loach minnow, spikedace, narrow-headed garter snake and Northern Mexican garter snake.”

The document also accuses the application of being misleading and not considering the complicated water rights issues that plague the lower Gila agriculture community and the ongoing conflict with the San Carlos Apache Tribe and Gila River Indian Community. “Water rights in the Gila/San Francisco watershed are highly contested — there are likely no water rights available for the proposed project,” Center for Biological Diversity wrote. Pumped Hydro Storage LLC received similar opposition to another proposed pumping project on the Little Colorado River near the Grand Canyon last year. The Navajo Nation Salt Trail Canyon Pumped Storage Project saw contention from a number of activists and environmental groups, including the Hopi Tribe, which called the proposed project land sacred to their people. The groups that filed against last week’s proposal are Center for Biological Diversity, New Mexico Wilderness Alliance, Wild Arizona, The Rewilding Institute, Kahtoola, Gila Conservation Coalition and Sierra Club.

[\(Bit by their own shenanigans\)](#)

Section 401 Water Quality Certification Waiver/Hydroelectric Relicensing: Federal Energy Regulatory Commission Addresses Southern California Edison Company Request for Declaratory Order

By Walter Wright, Mar 4, 2020, jdsupra.com

The Federal Energy Regulatory Commission (“FERC”) issued a February 20th document titled: **Declaratory Order on Waiver of Water Quality Certification (“Order”)** The Order addresses a petition filed by Southern California Edison Company (“Edison”) requesting that the FERC declare that the California State Water Resources Control Board (“California”) waived its authority to issue a certification for the relicensing of certain hydroelectric projects under Section 401 of the Edison is stated to be an applicant for six projects within the Big Creek Hydroelectric System (“Projects”).

Section 401 of the Clean Water Act requires an applicant for a federal license or permit to provide a certification that any discharges from the facility will comply with applicable state water quality standards. If not provided, the federal permit or license may not be granted. Further, states can impose certain conditions upon federal permits or licenses as a prerequisite to granting the permit or license. Because a federal license was needed from the FERC, Edison was required by Section 401 of the Clean Water Act to apply for a water quality certification. If the state fails or refuses to act on a request for certification in a timely manner, the certification requirements are waived with respect to such federal application. The FERC cites in its February 20th Order the January 25, 2019, United States Court of Appeals for the District of Columbia Circuit Opinion in *Hoop Valley Tribe v. FERC*. **The D.C. Circuit held that where a state and applicant agree to repeatedly withdraw and refile the same water quality certification request, the state has waived certification.** California argued that Hoopa Valley should not be retroactively applied to the Edison water quality certification application. It states that determining that withdrawal and resubmittal of a certification request is grounds for waiver departs from the FERC’s past practice and should only be applied prospectively.

The FERC responded to this argument by stating that Hoopa Valley “simply enforces the plain language of the existing statute, as opposed to invalidating a rule previously in force or

announcing a wholly new rule.” It states that the FERC is not announcing a new policy. Instead, it is stated to be following Hoopa Valley’s articulation of the plain meaning of Section 401 of the Clean Water Act. The FERC further states:

... As we have long held, once a state agency has waived its authority to act on a water quality certification application, the water quality conditions are not mandatory and acceptance of the conditions is a matter within the federal agency’s discretion. Accordingly, in the individual relicensing proceedings, the Commission will consider all of the May 31, 2019 certification conditions as recommendations under section 10(a)(1) of the Federal Power Act.

As a result, the FERC concluded that the Petition for Declaratory Order should be granted, holding that the Board waived its water quality certification with respect to the relicensing of:

- Big Creek Nos. 2A, 8
- Eastwood Project No. 67
- Big Creek No. 3 Project No. 120
- Mammoth Pool Project No. 2085
- Vermilion Valley Project No. 2086
- Portal Project No. 2174
- Big Creek Nos. 1 and 2 Project No. 2175

A copy of the Order can be downloaded here: <https://www.ferc.gov/whats-new/comm-meet/2020/022020/H-1.pdf>



Water:

(Without the hydro projects, it would have been worse!)

Tacoma Power Officials Say Dams Likely Prevented More Severe Nisqually Flooding

Nisqually Flooding Was ‘Highest Discharge We’ve Had In 20 Years,’ Staff Say; County Officials Have Called Tacoma Power’s Release of Water Into Question

By Eric Rosane / yelmonline.com, Feb 27, 2020

Stan Strand thumbs through a scrapbook of photos showing flood damage from the 1996 flood on a recent Monday afternoon at Tacoma Power’s Nisqually River Project. Grainy 5-by-7 photographs chronicle the waist-high water swirling around the floor of the LaGrande Dam powerhouse, which still operates from a natural canyon just a half-mile away from the administrative building. Back then, the facility sustained 34 inches of floodwater in the powerhouse, said Strand, hydro project manager of the Nisqually River Project owned by Tacoma Power.



It was unlike anything he had seen in his 29 years of working at the Nisqually hydroelectric dam, and efforts to repair and rewire the facility took nearly 11 months to complete. Earlier this month, Tacoma Power was hit with an event much less devastating, yet equally as jaw-dropping for those impacted downriver — a wet January and February contributed to higher-than-average water flows on the upper Nisqually River and on tributaries, which eventually led Tacoma Power to release large amounts of water from its dams. This contributed to flooding for residents on the lower Nisqually Delta, prompting calls for answers from Thurston County officials.

“This is the highest discharge we’ve had in 20 years,” said Todd Lloyd, director of resource operations and trading for the Nisqually River Project. This recent flood led to the damage of more than 60 homes on the lower Nisqually River Delta and displaced nearly 1,000 people living around the area as an evacuation advisory lasted three days. Despite their call to increase flows,

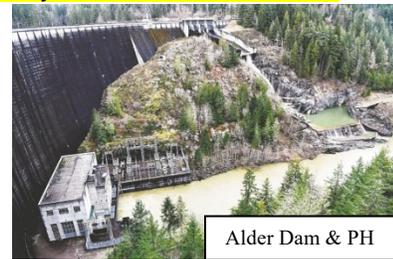


LaGrande Dam

Lloyd said their efforts have largely been beneficial toward mitigating the downriver flooding impacts. The higher of the two structures, Alder Dam, was able to restrict waterflow that otherwise might have impacted more residents living downstream. "During the event, we had decreased water flows by 5,000 cubic feet per second (cfs). We were holding 20,000 cfs coming into Alder and had 15,000 coming out," Lloyd said. "Flooding would have been 5,000 cfs higher if the hydro project wasn't here." Residents have since returned to their homes near the Nisqually River.

LaGrande and Alder dams are a joint hydroelectric project operated by Tacoma Power several miles upstream from Yelm called the Nisqually River Project. The LaGrande Dam powerhouse has produced power regularly since 1912, when the project first came online. Upgrades to the facility came in 1945, as well as the addition of Alder Dam which sits a mile and a half upstream from LaGrande, the smaller of the pair. Alder serves as the hydro project's main water storage and regulates a majority of the flow downstream, staff told Nisqually Valley News. LaGrande Dam produces enough electricity to power 25,000 homes. Alder provides electricity to about 16,000 homes.

Lloyd leads a team of four resource officers who, among other duties, responds to adverse weather by increasing and lowering waterflow through both dams. Last December was the fifth driest on record at Alder Dam, community relations specialist Monika Sundbaum told the Nisqually Valley News from atop the 330-foot structure. So when the weather took a turn for the wetter in January, it was unexpected. "We've



Alder Dam & PH

been running on full generation since the first of the year and we've actually been experiencing some spillage," Lloyd said. Much of that rain has built up at the Alder Dam reservoir. Strand and Lloyd say LaGrande Dam usually discharges water at a fairly consistent rate. Tacoma Power can maintain flows from the dams for months on end without



having to change the rate of water released. That's if the weather stays consistent, Lloyd said. Sundbaum said Lloyd and his team work around the clock to make sure water flows are at a safe rate, despite not having enough capacity for flood control.

Tacoma Power maintains and operates four hydroelectric projects throughout the southern Puget Sound area, Sundbaum said. Only two of them have flood control capacity. None of the reservoirs on the Nisqually River Project are large enough to

account for such a system. Lloyd said their Cowlitz River Project also experienced flooding upriver in rural Lewis County. At the height of flooding this February, 58,000 cfs was coming into the system. The project was able to withhold a large volume of water and turned around to discharge a mere 22,000 cfs. On the Nisqually, Strand and Lloyd say many of the river's other tributaries downstream, including the Mashel River and Ohop Creek, may have played a role in contributing to the intense rise on the delta.

Tacoma Power's role in increasing water flow has received some skepticism from elected officials, most notably from the Thurston Board of County Commissioners. During an agenda-setting meeting earlier this month, Commissioners Gary Edwards and John Hutchings voiced concern for those on the delta and said they were eager to find a solution to see that downriver flooding doesn't occur again on the Nisqually. Edwards asked at the meeting if it was possible that they could have released water earlier. Sundbaum told the Nisqually Valley News that Tacoma Power and the staff are always attempting to stay on top of changing weather conditions and collaborate with local authorities



LaGrande Dam

in case flooding scenarios do happen. "Operation on hydro plants, it's always a balancing act," Lloyd said. "We do what we can to reduce flooding downstream."

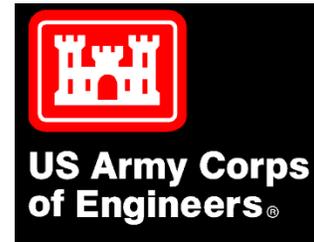
The Nisqually River was just one of many rivers throughout the Puget Sound that were hit hard during flooding in early February, leading to multiple road closures and a small number of regional evacuations. Sundbaum said Tacoma Power plans on including information on operations and data on water rates during the flood to the Federal Energy Regulatory Commission in its annual report. A separate report on the flood is not expected at this time

(Getting if there's too much water.)

Elevations On Lake Ashtabula And Reservation Dam Being Lowered PREPARING FOR POTENTIAL SPRING SNOWMELT

By T.J. Nelson, March 1, 2020, kvrr.com

ST. PAUL, Minn. — U.S. Army Corps of Engineers is lowering reservoir elevations within the Red River Basin based on recent snow measurements, in order to prepare for potential spring snowmelt. The Corps is currently lowering the elevation of Lake Ashtabula, located near Valley City. It will be drawn down nearly 2 feet in time for spring runoff. Reservation Dam, part of the Lake Traverse project, near Wheaton, Minnesota, will be lowered by a foot and a half by the end of the month.



(This one otta get a lot of notice. Imagine, producing power is the lowest priority.)

Seattle City Light to begin process to relicense Skagit River dams

By KIMBERLY CAUVEL, Mar 3, 2020, goskagit.com

A lot has changed since 1995, when Seattle City Light last received a license to operate three hydroelectric dams on the Skagit River. Changes include developments in climate science, impacts of climate change, and the growth of renewable energy sources such as solar and wind. "Climate change will certainly play a role in this next relicensing process," said Chris Townsend, Seattle City Light director of natural resources and hydro licensing. He said the utility plans to begin the relicensing process with the Federal Energy Regulatory Commission in April. It hopes to receive a new license of at least 30 years.



In preparation for relicensing, a meeting will be held at 6:30 p.m. Thursday at the Skagit Station Community Room, 105 E. Kincaid St., Mount Vernon. The meeting will include a presentation from Seattle City Light staff. "We're just about ready to file our preliminary application document ... so we wanted to have a public meeting to let people know; to be transparent and keep the community engaged," he said. The current license for Seattle City Light's Skagit River Hydroelectric Project that includes the Ross, Diablo and Gorge dams, was issued May 16, 1995, and expires April 30, 2025. The about 700-megawatt Skagit River Hydroelectric Project was first licensed for a 50-year period from 1927 to 1977. In more recent years, various settlements were reached that prompted a shift in priorities for dam operations.

Those settlements were agreed to in the 1990s "to resolve all issues related to project operation, fisheries, wildlife, recreation and aesthetics, erosion control, archaeological and historic resources, and traditional cultural properties," according to FERC documents. Seattle City Light now manages its Skagit River hydroelectric system — which encompasses about 19,200 acres

and 33 river miles — to protect fish, reduce floods and provide recreation, as well as produce power for the city of Seattle. Townsend said those priorities will not change in the relicensing.



“Our baseline assumptions about how we manage the project will remain the same,” he said. “We manage the project to first manage floods, second to address fish, third to address recreation issues and fourth for power production.” Townsend said Seattle City Light, working with 21 nonprofit and government organizations, has identified 28 scientific studies to complete over the next few years. “Those who are stewarding the Skagit Valley have been involved,” he said. Seattle City Light has also purchased about 15,000 acres of land to conserve for wildlife habitat and has completed salmon habitat restoration projects throughout the watershed. “We’re

really an important player that isn’t often recognized in protecting and restoring the Skagit River system,” Townsend said. “We consider ourselves good stewards and we like to understand and respect the priorities of the community.” Not all are convinced the dams are favorable, particularly members of the Upper Skagit Indian Tribe. “A century ago the City of Seattle came to our sacred river ... and began building the first of these three dams,” tribal member Janelle Schuyler write in a Dec. 15 letter to Seattle Mayor Jenny Durkan. “This action by the city immediately brought unprecedented devastation and destruction to the then pristine Skagit and harmed my people, the salmon and our very culture.”



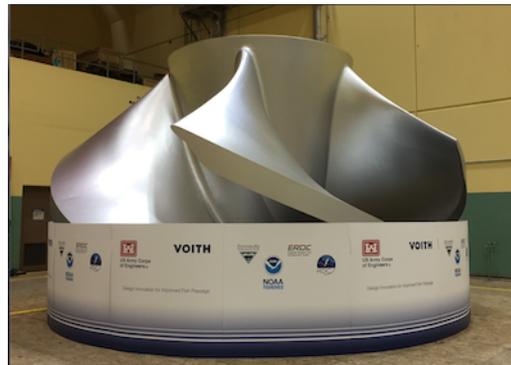
Environment

(Great results.)

Test shows Ice Harbour turbine achieves high fish passage survival rates

3 March 2020; waterpowermagazine.com

Preliminary testing on a new turbine installed by Voith at the Ice Harbor Dam on the Snake River in Washington state, US, shows the new design has achieved a survival rate of 98.25% for Chinook salmon passing through the turbine - a significant improvement over similarly sized conventional Kaplan turbine installations which typically see survival rates in the low 90 percent range, says Voith. One of the primary goals of the new Unit 2 turbine design was to improve the fish passage survival rate, and this was accomplished while simultaneously increasing the turbine’s hydraulic performance and extending the life cycle of the unit. Voith says the turbine achieved a 4% boost in hydraulic efficiency.



The success of the updated design was the result of collaboration between Voith, the United States Army Corps of Engineers (USACE), the National Marine Fisheries Service (NMFS) and the Bonneville Power Administration (BPA). “This was a truly collaborative effort between BPA, USACE, NMFS and Voith,” explained Stanley Kocon, President and CEO, Voith Hydro North America. “Together, this team looked at the results of the modeling and designed a propeller turbine based on what was safest for the Snake River’s Chinook salmon fish population. This is a significant step in protecting this and other species, such as steelhead, while also continuing to

serve the renewable electricity needs of the Pacific Northwest.” The testing was conducted in late 2019 with the Voith-manufactured turbine that had been installed earlier that summer. To perform the test, the Pacific Northwest National Laboratory (PNNL) released “sensor fish” devices within the turbine intakes to collect pressure and acceleration data during operation. Also part of the testing was the release of live juvenile Chinook salmon equipped with balloon-tags to aide in the recovery process. After release, each fish was then examined following passage downstream through the turbine. Analysis of the preliminary results of these tests showed a high rate of direct survival for migrating juvenile salmonids as they passed through Unit 2, satisfying a key goal of the modernization project.

Designing and manufacturing the turbine

For Voith, the project began in 2010 when the manufacturer was awarded the contract by USACE. After a multi-year design period, manufacturing at its Pennsylvania facility began. Installation and commissioning on the propeller turbine was complete in the summer of 2019. “The collaboration involved in this project is what made it succeed,” said Jason Foust, Hydraulic Design Engineer, Voith Hydro North America. “Utilizing a combination of detailed numerical simulations, physical model testing, and decades of hydro turbine experience, we created one of the most advanced turbines installed anywhere in the world right now for improving direct survival. All of our tools and knowledge were focused on achieving a high survival rate for migrating fish. We weren’t willing to compromise on any aspect of fish passage, and that meant that we had to develop innovative solutions. Through the process, we also boosted the turbine’s hydraulic efficiency, improved cavitation behavior and increased the turbine life cycle, making this project an incredible success.”

Another Voith turbine, a Kaplan with adjustable blades designed by the same team using the same fish-passage evaluation process, is currently being installed at the site, and is expected to undergo similar testing once it is commissioned. Ice Harbor is located about eight miles northeast of Burbank, Washington, and is one of four dams on the Lower Snake River under USACE operation. Improving the fish passage rates at each dam is a critical need as it allows more juvenile fish to migrate downstream after hatching while also maintaining the high renewable energy generation capabilities for the region. Ice Harbor Dam is a concrete gravity run-of-river renewable energy facility that began operation in 1962 and has a generating capacity of 603MW.



Other Stuff:

(These people must be smoking some strong stuff. With all the wind and solar power being built, Pumped Storage is the future.)

PSEG Power Unloads Its Yards Creek Hydro-Pump Storage Facility Move tracks company’s plan to optimize generation, maximizing profit from its regulated utility

BY TOM JOHNSON | FEBRUARY 28, 2020 | ENERGY & ENVIRONMENT, .njspotlight.com

PSEG Power is shedding another generation asset, continuing a trend in which its parent, Public Service Enterprise Group, is moving to make the most profit from its regulated utility. In the company’s quarterly earnings call,



PSEG

PSEG executives disclosed it has entered into an agreement to sell its half-interest in the Yards Creek hydro-pump storage facility in Blairstown and what was once Paha quarry in Warren County. FirstEnergy Corp. owns the other 50% of the facility. The 420-megawatt facility, opened in 1965, is expected to be sold to Yards Creek Energy, LLC, a subsidiary of LS Power, an independent merchant-energy supplier. Terms of the deal, expected to close in the second half of 2020, were not disclosed. “This sale reflects our ongoing commitment to optimize the generation

plants,” Ralph Izzo, chairman, president and CEO of PSEG, told analysts in the earnings call on Wednesday.

Making plans for PSE&G

The sale is hardly surprising as PSEG has long signaled it intends for its utility, **Public Service Electric & Gas, to drive earnings for the Newark company.** This year, PSEG is projected to earn 80% of its profits from PSE&G, and 90% of its capital spending over the next five years will be directed there. Last June, the company sold off two of its coal plants in western Pennsylvania, leaving the generating subsidiary with **only one remaining coal unit in Connecticut. That facility is due to be retired in 2021.** “PSEG’s long-term strategy to transition our business to a mostly regulated company with predictable cash flows is on track,” Izzo said. Perhaps more meaningfully, **it appears that the utility’s filings are meant to align with the Murphy administration’s clean-energy goals.** These seem to be moving forward, after being on hold for many months before the New Jersey Board of Public Utilities. PSE&G has proposed nearly \$3.5 billion worth of initiatives for the regulatory agency to consider. They include \$2.5 billion in energy efficiency programs, \$500 million to \$600 million for advanced metering infrastructure, \$100 million for energy storage and \$100 million for charging stations for electric vehicles. Each of the initiatives has been identified as a priority in the state’s new Energy Master Plan and would be spread out over the next six years, according to the filings. The BPU has issued draft procedural schedules to take up the filings this year. **Izzo said he hoped approvals could come by the first quarter of 2021, or even late this year,** if negotiated settlements can be reached.

(My alma mater is doing its part.)

Pitt commits to being carbon neutral by 2037

BY TEGHAN SIMONTON | February 28, 2020, triblive.com

By 2037, University of Pittsburgh intends to be completely “carbon neutral,” just in time for its 250th anniversary. Pitt’s Board of Trustees voted Friday to support Chancellor Patrick Gallagher’s signing of the “Second Nature Climate Leadership Statement and Carbon Commitment,” a resolution to improve energy efficiency and sustainability. The commitment was in partnership with Second Nature, an organization dedicated to increasing climate action in the higher education sector. “Addressing climate change is a vital issue for our university, society and future,” Gallagher said in a statement. **“Pledging to go carbon neutral is a critical next step for the University of Pittsburgh.”**



Carbon neutrality refers to the action of balancing emissions of carbon with commensurate carbon removal or offsetting — taking measures to reduce or eliminate carbon dioxide, with the goal of achieving a net zero carbon footprint. The Second Nature commitment pledges its signatories to develop a specific climate action plan and submit an annual evaluation of progress. **“We believe colleges and universities must exercise leadership in their communities and throughout society by providing the knowledge, research, practice, and informed graduates to create a positive and sustainable future,”** the commitment reads. According to a university news release, Pitt reduced greenhouse gas emissions by 22% between 2008 and 2017. Aurora Sharrard, director of the university’s Office of Sustainability, said the commitment will build off an existing, “ambitious” Sustainability Plan. “We’ve made significant investments to reducing our carbon footprint,” Sharrard said, listing the university’s strides through the existing plan — including reduced landfill waste, a growing fleet of electric vehicles and more. “This helps us attack that with a renewed vigor,” she said. “It helps us be accountable and transparent on-campus, off-campus and in the world, while challenging us to lead and partner with other organizations.” The new commitment builds on the Sustainability Plan by outlining more tangible steps to achieve carbon neutrality, Sharrard said. For example, the university will pursue a 50% reduction in energy use in existing facilities by 2030, along with an 80% reduction for new

construction. The university has also committed to purchase at least 50% of campus electricity from renewable sources by 2030, including from a hydroelectric power plant in the Allegheny River expected to be operational by 2023.

The commitment also focuses on “infrastructure efficiency,” according to a news release, building on existing low-carbon transportation and supply acquisition, and the continued development of new energy-saving initiatives in the future. The university’s progress will be shared through a “sustainability dashboard” online, updated by Sharrard’s office. Sharrard said the commitment was made possible with the support of a number of sustainability organizations on campus, involving students, faculty and staff. There are 27 student organizations on the campus that are dedicated to improving sustainability practices. Tim Carter, president of Second Nature, said since launching the commitment in 2007, more than 800 institutions across the U.S. have signed it. Signatories, he said typically produce nearly 50% less carbon than non-signatories. Carter said the commitment could have a broader effect on influencing not only other colleges and universities, but also the surrounding region. “The schools can be a leading indicator of what can happen in the community,” Carter said. “The relationship between sectors really play off each other. We’re trying to have campuses do more to influence in the communities around them.”



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