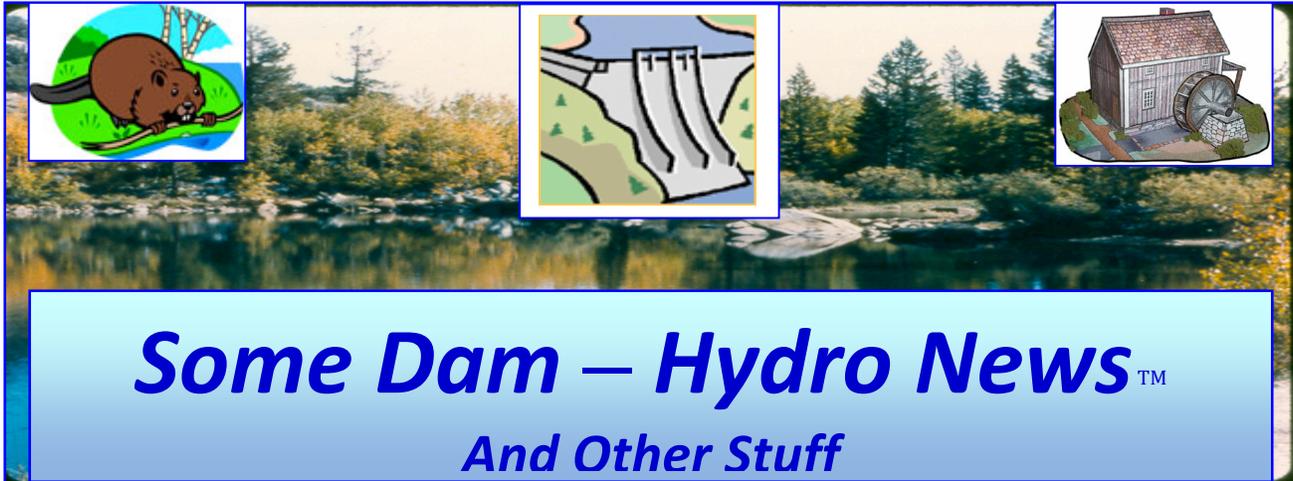


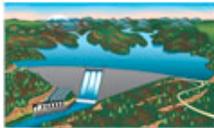
1/25/2019



Quote of Note: *“The world is full of willing people, some willing to work, the rest willing to let them.” - Robert Frost*

Some Dam - Hydro News → Newsletter Archive for Current and Back Issues and Search:
(Hold down Ctrl key when clicking on this link) <http://npdp.stanford.edu/>. After clicking on link, scroll down under Partners/Newsletters on left, click one of the links (Current issue or View Back Issues).

“Good wine is a necessity of life.” - -Thomas Jefferson
Ron’s wine pick of the week: 2016 Columbia Crest US Red Blend "Gold Limited Release"
“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson



Dams:

(Now, this is old).

OLDEST IN TENNESSEE: 230-year old Amis Mill dam in need of repairs

By Tommy Campbell, Editor & Publisher, Dec 28, 2018, therogersvillereview.com

ROGERSVILLE, TN — With a special, catered “A Taste of the Bayou” menu, 200 supporters from Hawkins County and as far away as Knoxville and Bristol turned out recently for an evening of food, a silent auction, and an informative program designed to call awareness to the deteriorating plight of Tennessee’s oldest stone dam. **Those in attendance included several Native Americans who have also become huge “fans” of the site, including Walking Bear, and Stone Wolf, a direct ancestor of legendary Cherokee Chief Dragging Canoe.**



"When we came to Rogersville, we brought everything we had, heart, soul, and resources, and invested it into this beautiful and property," said Jake Jacobs, who, along with his wife, Wendy, own the historic Amis (pronounced 'amy') home and stone dam that spans Big Creek just east of Rogersville. Built in the late 1700's by Thomas Amis, the father-in-law of Rogersville founder Joseph Rogers, the Revolutionary War-era home is one of the oldest in this part of Tennessee. The Jacobs have a very special connection to the property in that Thomas Amis was one of Wendy's direct lineal ancestors. The gala, held at Occasions on the Square, was arranged by friends of the historic and endangered dam, which is a primary water supply source for the Town of Rogersville. "We are so grateful to them for caring, for sharing the concern about what's happening to the dam," Jake said. "The outpouring was just fabulous!" But even though more than \$25,000 has come in to-date — some from the gala and other amounts from earlier donations — that is not nearly enough to carry out the major repairs that are needed to shore up the 1780-era stone and masonry structure to maintain the integrity of the dam and prevent further deterioration.

The dam was designed and built by Pennsylvania stonemason, architect and Dutch native Thomas Harlan. A 2012 survey conducted by a professional engineering firm estimated the cost of repairs at between \$150,000 and \$200,000. And since the dam is totally located on private property, the Jacobs' have been unable to locate any "public" help through the Town of Rogersville, Hawkins County, State of Tennessee or U.S. governmental agencies. "It's just showing its age," Jake said of the dam. "It was designed well and built well, and it has held up remarkably well, but it is more than 230 years old and it needs some TLC right now or else it's going to continue to get worse." The 174-foot long structure is an iconic photo-site on Big Creek, just across the road from the Jacobs' popular Amis Mill Eatery restaurant, which is frequented regularly by tourists from across the country. A note contained in the 2012 engineering report notes that, for a structure that is more than two centuries old, the dam is still in "relatively good condition". However, there are a number of leaks throughout the span of the dam that have developed in recent years. "Nothing was observed indicating that the dam was in danger of collapsing, although the opening to the former flume (which once extended downstream to the no-longer existent grist mill) could fail if subjected to hydrostatic and debris impact loads if the impoundment level rose to the top of that part of the dam," warns the report by the Lexington, South Carolina -based Kleinschmidt engineering firm. The report goes on to note that the dam "is in good enough condition to warrant repairs and maintenance". The repairs could involve several workable options, the report states.

"Through the donations we have received to-date, we have 'seed money' for the repair project, but not nearly enough to sign a contract for the work that we know is needed," Jake said. And while the property is privately owned, Jake pointed out, they have tried to establish there a publically-available site for people to enjoy and appreciate. "We allow anyone who wants to enjoy the beauty of the place, make photos, have picnics, and to fish," he said. "We have never charged admission. We have a deep love for this place and just want to share it and make it available with others who also appreciate the significance of this piece of property and just how big of a role it played in the early history of the United States, and the State of Tennessee."

On the side of Big Creek, just below the dam, is the new Amis Visitor Center and Civil War Trails marker which calls attention to the battle that took place on the site and surrounding property during the War Between the States. "This place is just overflowing with history!" Jake said, pointing out that some of the key players in early American history stayed at the Amis house when it was an inn on a Wilderness Road and stagecoach route from Knoxville to Washington, DC, including several former presidents, early explorers, and the founder of the Methodist Church in America, just to name a few. "The cartographer who was commissioned to do the first map of the new State of Tennessee stayed right there in my house!" Jake said. "The very first map of this state was drawn right here." The Jacobs said the recent gala was a first step to raise awareness of the need for significant repairs to the dam. "We want everyone who appreciates history and our heritage to be aware of this and to let's all get on board and make this happen," Jake said. "This

is a historically significant structure that we do not need to sit back and allow to deteriorate further. So many of our historic landmarks, many of them right here in Hawkins County, have already fallen to neglect or deliberate destruction, and it just breaks my heart to think that, with all of the resources this state has, we can't find a way to pull those resources together here to repair one of the most iconic dams in Tennessee.”

(Even the little dams get involved.)

Officials seek dam upgrades in Alpine Lakes Wilderness to help salmon, water demand

By Evan Bush the Seattle Times, Jan 4, 2019, tdn.com

Officials are calling for the automation of little-known mountain dams in the famous Enchantments area near Leavenworth, Wash., as they try to provide a better flow to Icicle Creek, its languishing fish, Wenatchee Valley orchards and the city of Leavenworth, which all rely on the creek's cold waters. After six years of considering its options, the Icicle Working Group outlined its long-awaited plan to draw a stronger, consistent flow that is more resilient to drought and climate change in an environmental-impact statement released Thursday. The decision has been



closely watched by environmental groups and could face legal challenges. Icicle Creek draws on seven lakes in or near the Enchantments basin, a portion of the Alpine Lakes Wilderness that hikers seek for its high-alpine terrain dotted with crystalline lakes. Federal wilderness laws generally disallow new construction in wilderness areas, but the dams were built before the Wilderness Act of 1964 and the area's designation as wilderness by Congress. The plan aims to address myriad water needs, according to the impact statement. Consistent stream flow would help endangered chinook salmon, steelhead and bull trout. Tribal salmon harvest has been in decline and aquatic habitat has been reduced by low flow and warm waters. The Leavenworth National Fish Hatchery, which operates on Icicle River, needs a more reliable supply of cold, clean water for its operations. The city of Leavenworth, which pulls water from the Icicle, does not yet have enough water to meet projected demand in 2050, and is examining various options. Some years, there is not enough water to supply demand for agricultural irrigation. The measures will cost an estimated \$82 million, officials predict in the impact statement. They include a plan to automate dam releases from seven alpine lakes, including hiking destinations like Eightmile Lake, Colchuck Lake and Nada Lake. The plan also calls for Eightmile Lake to be raised several feet, or "restored," to its "historical and permitted high water storage elevation." The hatchery would see infrastructure upgrades. Some Icicle Creek channels could be modified for better fish passage around a large boulder field that stops fish from migrating upstream. The plan also emphasizes conservation projects in the Leavenworth area, like leak detection and new residential meter installation.

"We're pretty excited. When we started the effort in 2012, there was a long history of litigation and little problem solving," said Mike Kaputa, natural resources director for Chelan County. "It took us six years to get to this point and we have a restoration path forward."

(A part of history we could do without.)

What Happened When The Colorado KKK Tried To Build A Dam

By LUKE RUNYON • JAN 2, 2019, .aspennpublicradio.org

A tiny sign greets hikers as they pass the structure. It reads: "Chimney Rock Dam." A small arrow points to the right. What the sign doesn't tell you is how that cement slab ended up there. It doesn't mention the Ku Klux Klan's rise to power in Colorado nearly 100 years ago. It doesn't include how the Klan took over Longmont, and pushed hard for the splashy public works project. The sign fails to mention how day laborers started setting cement in the creek, and how this cold slab of cement eventually played a part in kicking the Klan to the curb.



It's bitterly cold outside when Erik Mason and I walk up the road that curves alongside the creek. Mason is a local historian and a curator at the Longmont Museum. The snow crunches under our feet as we get closer to the dam site, or what's left of it. The dam doesn't block the creek completely, water still flows past. That's because it's unfinished, left in the same state since 1927. "You can see a lot of the structure that normally would be concealed in a finished dam that is still exposed because it was essentially abandoned mid-construction," Mason said, pointing to the rusted pipes that poke out from the cement on all sides. "Do people call it the KKK dam?" I asked. "I actually don't think too many people know the story," Mason said. "People may know that the KKK was in Longmont. But that they had this strange public works project is probably a lesser known aspect of the KKK's history in Longmont." An election in 1925 put Ku Klux Klan leaders into a majority of Longmont's city council seats. The Klan in Colorado rose to power in the 1920s and targeted Catholics, Jews and Mexicans, swept into office with anti-immigrant rhetoric. They held rallies on the Front Range, clad in white hoods and robes.

A small news item in the Longmont Ledger, one of the city's newspapers at the time, from June 1923 noted a speech given by a KKK lecturer visiting from Atlanta: "He gave what might be called a strong patriotic address, claiming that loyalty to the Constitution was the first principle of the Klan. Whether any of his listeners were sympathizers of the Klan or not could not be told, but all applauded his patriotism to the flag. Several hundred people heard the address which lasted nearly two hours." The Klan's growing political power in Colorado lent itself to running for elected office. In Longmont, that meant the city council and school board. In 1925 KKK members gained a majority of Longmont city council seats, and dismissed longstanding city employees like the city engineer and the fire chief, replacing them with Klan sympathizers. When it came to governing, the Klan majority had a narrow focus: water security. Once in control of the council, they started looking for an eye-catching infrastructure project. They wanted something big, something made of cement, something to show the people of Longmont they were getting the job done. "Essentially they were trying to find a way to employ their friends," Mason said. Bags of cement started piling up at the site. And KKK sympathizers were placed in jobs overseeing the build. To complete the job the council opted for day laborers, a way to make sure foreign workers weren't tapped for the build, Mason said. But the work was slow -- and the initial cost of \$85,000 quickly ballooned to \$350,000. The rising cost, combined with a growing anti-KKK sentiment in the city is what killed the dam, Mason says. A group of locals unhappy with the change the KKK brought called themselves the Visible League, and they took out an ad in the Longmont Daily Times. It read that if the KKK wasn't kept in check, it would only lead to "hatred and distrust" in town. "Citizens are threatened," the ad continued. "A campaign of persecution has been started." By the time the next election rolled around in 1927, voters ousted Klan members from the council. "People really, I think particularly in that first council election, weren't paying attention," Mason said. "And it wasn't until they got into office and started doing some of these crazy things that people realized that this was a really bad idea." The new council took a look at the escalating costs and the poor design and put the kibosh on the dam's construction. Left with 7,000 sacks of unused cement, the

bags were hauled into town for a different public works project: road paving. But walking past the dam you'd never know it. Mason sees it as a monument to the power of civic engagement. **And to our reluctance to engage with uncomfortable racist history.**

"People don't like negative history and they want to think that everything was great in the past and that there weren't the problems we have today," Mason said. "Reality is that people have been struggling and fighting against each other for as long as there have been people." **History is supposed to teach, Mason said. How else are we supposed to avoid making the same mistakes over and over again?** "This project reminds us that we always need to be vigilant." This story is part of a project covering the Colorado River, produced by KUNC and supported through a Walton Family Foundation grant. KUNC is solely responsible for its editorial content.

(Lots of things are affected by "the wall", even dams.)

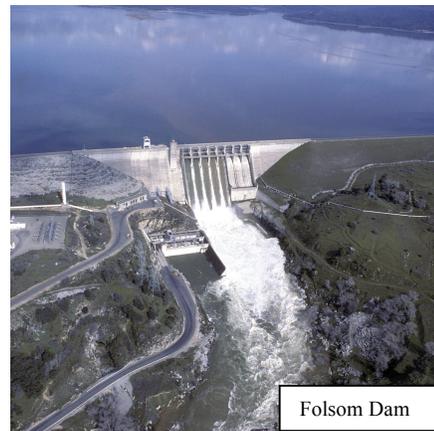
Trump could divert money from Folsom Dam to fund a border wall; Democrats vow a fight

BY EMILY CADEI AND STUART LEAVENWORTH, JANUARY 11, 2019, sacbee.com

Washington - **President Donald Trump is reportedly considering raiding disaster recovery funding — including more than \$1.7 billion for Sacramento-area flood protection projects — to help pay for a wall on the southern border.**

Congressional Democrats are promising a fight. "Congress allocated these taxpayer dollars for vital flood protection projects all over the country, including projects that safeguard Sacramento and over half a million of my constituents," Democratic Rep. Doris Matsui of Sacramento said in a statement. "It's unconscionable that President Trump wants to take Sacramento's flood protection funding away to build his border wall, which he repeated, time and time again, that Mexico would pay for."

According to members of Northern California's congressional delegation, the White House is weighing a plan to tap \$5 billion in supplemental appropriations that Congress approved for the Army Corps of Engineers to finance urgent flood-control projects in California and Puerto Rico. **This includes more than \$1.7 billion for Sacramento projects, such as elevating the height of Folsom Dam**



Folsom Dam

(Haven't they spent enough?)

Removing dams not solution for salmon, orcas

heraldnet.com, January 11, 2019, OPINIONLETTERS

The futures of chinook salmon and orca whales are entwined. Many propose removing dams to increase salmon runs. While well-intentioned, dam removal is a short-term and short-sighted proposal. The dams to be removed provide the largest electrical power in the United States. As the earth warms, water behind these dams may become a potable water source as mountain snowpacks diminish. **Why don't we re-engineer present fish ladders around the dams in question? By doing so, we maintain and increase chinook salmon runs, feed the orcas, continue to generate electricity and have potable water reserves in the event of declining mountain snowfall and spring runoff** *Warren Walton, Bothell*

(They never give up.)

Jan. 14 Letters to the Editor

Jan 14, 2019, lmtribune.com

Get the facts

This month Kristin Meira of Pacific Northwest Waterways Association will present in Lewiston what she refers to as “real information” about the Columbia-Snake River system.



But let’s look at realities she likely won’t tell you. In the past dozen years, the U.S. Army Corps of Engineers spent more than \$30 million on sediment management just in the Lower Granite pool, not including the \$6.7 million dredging contract the corps just awarded for more dredging this winter. While annual freight volume on the Columbia and Snake rivers total around 56 million tons, the Snake contributes only 5 percent of that total.

Since 2000, the number of loaded barges passing Lower Granite Dam has declined from 1,058 barges to 314, a drop of 70 percent and less than one barge per day. The corps spent \$800 million to “fix” the dams for juvenile fish passage. However, fish survival through the hydrosystem remains around 50 percent due to extended travel times, exposure to predators and high water temperature. Delayed mortality from repeated dam passages further reduces smolt numbers as they enter the ocean. Since 2009, Bonneville Power Administration has not needed any power from the lower Snake River dams to meet its contracted load demand. Thirty-three prominent fish scientists and a separate group of whale scientists recently stated without removal of the lower Snake River dams, Puget Sound’s southern resident killer whales will become extinct. These facts provide “real information” based on hard data. Don’t expect the same from Meira’s creative spin. *Bonnie Schonefeld, Kooskia, Idaho*

[\(More on the Lower Snake River dams.\)](#)

Study on tearing down Snake River dams is a waste of taxpayer money, says letter to governor

BY ANNETTE CARY, JANUARY 15, 2019, [.tri-cityherald.com](#)

Kennewick, WA - A proposal to spend \$750,000 of Washington state taxpayer money to study the economic and social impacts of tearing down the Lower Snake River Dams is not sitting well with Tri-City-area supporters of the dams. They’ve drafted a letter to Washington Gov. Jay Inslee saying the study would be a waste. The latest push to remove four Snake River dams is tied to the decline of the population of the iconic orca, or killer whale, population off the Washington coast. The orcas rely on chinook salmon, including from the Snake River, for most of their food. “No one disagrees that this group of orcas is in trouble,” said the letter.



Hydro

(Yeah! That’s what I say.)

Want “Carbon Free” Electricity? Promote Hydroelectric Power

Written by Isaac Orr, January 07, 2019, [americanexperiment.org](#)

Did you know that the Next Generation Energy Act (NGEA), Minnesota’s law that requires the state to obtain 25 percent of its electricity from renewable energy sources by 2030, explicitly prohibits counting electricity generated from large hydroelectric sources to measure compliance with the law? The law was written this way to promote wind and solar power, but this special carve out for wind and solar has cost Minnesotans more than \$15 billion, so far, and this spending spree is the primary reason our electricity prices have increased 26 percent faster than the national average since 2007.

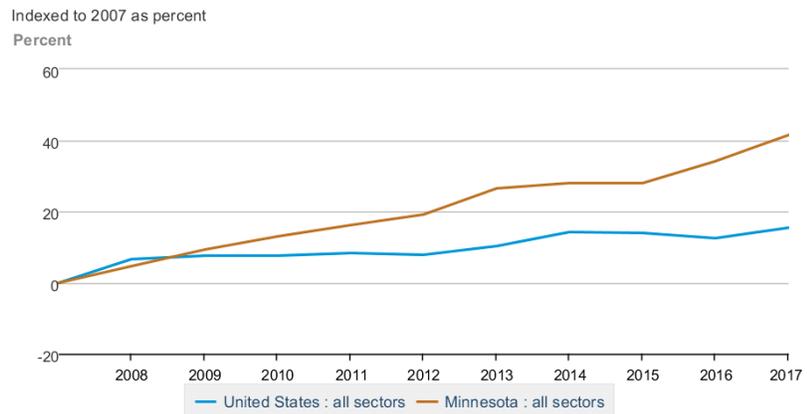
Promoting wind and solar at the expense of other technologies, like hydroelectric power, has unnecessarily driven up the cost of our electricity, and delayed reductions in carbon dioxide emissions associated with electricity use in Minnesota by providing less incentive to purchase hydroelectric power from our friends in Canada. Hydroelectric power is more desirable than wind

and solar because it is more affordable, more reliable and more permanent. Washington state derives more of its electricity from renewable energy sources than any other state in the country, yet it has the second lowest electricity prices. This is due entirely to the fact that hydroelectricity constitutes 78.9 percent of Washington's electricity generation.

Furthermore, hydro is far more permanent than wind turbines, which only last for 20 years. In fact, many many of their hydroelectric dams there were built in the 1930's and 1940's as part of the public works projects associated with the New Deal. For example, the Grand Coulee dam began operating in 1942, 76 years ago, and is still the 5th largest producer of electricity in the country. Therefore, hydroelectric presents a far better value proposition both environmentally, and economically, than wind and solar. While

Minnesota has largely run out of suitable sites for new hydroelectric dams, Canada has not. Rather than creating special carve outs for unreliable, expensive, and relatively short-lived sources of energy like wind and solar, Minnesota should expand its definition of renewable to include all sources of renewable energy. This action will give Canadian power companies more incentive to build large dams that will have long lifespans, and generate electricity that is more affordable and more reliable.

Average retail price of electricity, annual



Data source: U.S. Energy Information Administration

It's time to legalize large hydro in our state.

(Something is going on that they don't want to talk about.)

FirstLight requests re-licensing change

By RICHIE DAVIS, Staff Writer, January 10, 2019, recorder.com

More than five years into its federal relicensing process, FirstLight Hydro Generating Co. is seeking to shuffle its Northfield Mountain and Turners Falls projects into two separate holding companies. The Federal Energy Regulatory Commission, which has been overseeing the consolidated license for both Connecticut River projects, posted notice Tuesday of FirstLight's application to make Northfield Mountain LLC the applicant for the 1,168-megawatt pumped-storage project's operating license. The process by FERC — which remains operational despite the federal government shutdown — sets a Feb. 8 deadline for comments, protests and interventions to be posted.



The intake/outflow of the Northfield Mountain Pumped Storage Facility using water from the Connecticut River. STAFF FILE PHOTO

FirstLight Hydro's Dec. 20 application to FERC seeks to also transfer its Turners Falls and Cabot Station operations — with a combined generation of 68 megawatts — to a new affiliate, FirstLight MA Hydro LLC, and to transfer both new project owners as applicants for relicensing that was officially applied for in April 2016. The current 40-year-license, which expired last April 30, has

been extended. The company seeks an expedited process that would grant approval by March 31. FirstLight spokesman Leonard Green said in a statement, “We are simply trying to align the projects by the type of service they provide. We envision Northfield Mountain to be part of a FirstLight storage company,” while the two Turners Falls hydro plants would remain in a “conventional hydro company” along with its Housatonic and Scotland projects in Connecticut. “There are no plans to sell any of the assets. The projects already operate under two different FERC licenses, so this will not impact the re-licensing effort in a meaningful way. ... Since this has no impact on re-licensing, we are requesting this change now.”

But while FirstLight downplays connections between the proposal and the relicensing, timing is key, suggest those who have been working on or closely observing the multiyear federal process. “If they segregate the two, it’s purely a transaction for them. They’re trying to protect their big cash cow, the pumped storage project,” guesses Franklin Regional Planning Board member Thomas Miner, who’s followed the hydro project relicensing issue for years. Federal and state fisheries and wildlife agencies want more flows to protect endangered species like shortnose sturgeon below the dam, Miner notes, while American Whitewater and Appalachian Mountain Club have what he calls “a very ambitious plan to make this a premiere whitewater boating opportunity.” The nonprofit recreational groups have been advocating for that, Miner suggests, while the government agencies “have a statutory right to require these things. Which, I’m sure, is what concerns FirstLight and its many different guises the most.” In closed-door settlement negotiations among all those groups — which Miner has not been party to — “everybody’s supposed to be putting their cards on the table. That’s got to be scary to the bean-counters.” Allowing more flow into what is now essentially a dry river below the dam would be lost revenue for the dam’s owner, while Northfield Mountain — designed 50 years ago as a “peak-load” generator for the electric grid — is a very valuable asset, able to boost the power supply as it goes from standby to 1,143 megawatts in six to eight minutes. The December filing by the plants’ owner, which has been meeting for months in closed settlement agreement sessions with a group of governmental and state agencies and environmental organizations, caught at least some of those by surprise.

“We were taken by surprise,” said Kimberly Noake MacPhee, a Franklin Regional Council of Governments planner. “In the beginning, FERC said it wanted to re-license all five projects together, concurrently, so the facilities can be operated and permitted as a system. That makes sense on a river, where one project affects the others, so it’s concerning there’d be separate licenses.” She said she expects the affected towns would be among those responding to the FERC notice. “There was no indication. I had no idea,” said Andrea Donlon, river steward for the Connecticut River Conservancy, who has been party to those talks and has worked on getting erosion, fisheries and water quality issues resolved as part of the relicensing process. The Greenfield-based environmental nonprofit plans to intervene in the process over concerns that the two hydro operations should not be separated.

“Turners Falls and Northfield are so interdependent, I would be really concerned if they tried to have them under truly separate ownership,” she said. The 20-mile impoundment area between the Turners Falls and Vernon dams constitutes the “lower reservoir” of the pumped-storage project, which produces power by pumping river water to a mountaintop reservoir and releasing it through underground generators back to the river. The possibility of FERC expediting the process leaves Miner and some others concerned, with the agency’s 30-day clock now ticking, despite an ongoing government shutdown that affects the U.S. Fish and Wildlife Service. Donlon said she is unclear on what FirstLight’s motivation actually is in filing for the changes, except to remove itself from financial liability from the terms of any new license, which could be years from completion. “What the heck is this? I don’t know,” she said.

She said a separate Dec.21 petition to FERC on tariffs shows how deep this river story runs. It says Northfield Mountain, which intends to operate as an “exempt wholesale generator” is: “a wholly-owned direct subsidiary of NFM Holdings LLC, which, in turn, is a wholly-owned direct subsidiary of NFM Intermediate Holdings LLC. NFM Intermediate Holdings LLC is a wholly-owned

direct subsidiary of NFM Parent LLC, which, in turn, is a wholly-owned direct subsidiary of FirstLight Hydro. FirstLight Hydro is a wholly-owned direct subsidiary of FirstLight Power Inc., which ... is a wholly-owned direct subsidiary of PSP FL USA LLC ... which is ultimately owned and controlled by Public Sector Pension Investment Board (PSP), a Canadian Crown corporation created by an act of the Canadian Parliament, with a share capital issued to the President of the Treasury Board of Canada to be held on behalf of Her Majesty in right of Canada.”

(Maybe they'll get it right his time.)

Federal regulators approve new plan for Reusens Dam after low-flow claims

By Richard Chumne, 1/11/19, newsadvance.com

Federal regulators have approved an overhauled operations plan for the Reusens hydroelectric plant on the James River, ending a nearly yearlong saga begun in January 2018 when dam operators were accused of improperly restricting water flow. An investigation into the allegations came back inconclusive after plant officials notified regulators dam sensors monitoring floodgates were malfunctioning and inaccurately recording data, according to documents submitted by Eagle Creek Renewable Energy, the dam's owner, to the Federal Energy Regulatory Commission. In response, FERC directed Eagle Creek in April to repair the sensors and to update the minimum flow and compliance portion of the dam's operations plan by August.



Since then, environmental groups and business owners along the James River have not noticed low water flow, but after a year of record rainfall, river advocates warn the unusually wet season may have disguised any water restrictions by the dam. “There never was going to be an issue this year,” said Rob Campbell, a community conservationist with the James River Association. “There was no shortage of water.” According to the National Weather Service, 65.7 inches of precipitation fell on Lynchburg in 2018, the highest annual total since Lynchburg weather records began in 1893. In 2017, almost 33 inches fell on the city and in 2016 the total was about 42 inches. “We’ve had good water all spring and summer and into the fall, so there’s no way to tell how the new management plan will affect us,” said Mason Basten, a local sportsman and owner of River Road Jet Boats in Madison Heights. “We’ll have to get back to those low flows and that’s when you can tell what kind of management you have behind the dam.” In a May 11 letter to FERC, Eagle Creek told regulators that company had repaired the floodgate monitoring system and developed a new process to regularly inspect the system. Eagle Creek also told regulators the dam is exploring the possibility of upgrading the current floodgate monitoring system or installing a secondary alarm and monitoring system to parallel the existing system.

It is unclear if the dam has taken those steps as of December. Eagle Creek Executive Vice President of Operations Robert Gates did not return multiple requests for comment. In an updated operations plan submitted Aug. 9 to FERC, Eagle Creek said the dam will maintain a continuous minimum flow of at least 333 cubic feet per second and will regularly monitor water flow to ensure the dam is meeting FERC's standards. Regulators approved the plan on Dec. 10. Hydroelectric dams must be licensed by FERC, which sets a requirement for the average hourly flow of water that must pass through the dam depending on the level of the river. If flows are too low to operate the dam's turbine, Reusens will open a series of floodgates to meet minimum flow requirements, according to the plan. Campbell and Basten said they will continue to monitor the river's water level and will notify FERC if they believe Reusens is holding back water to increase power generation.

According to Campbell, unregulated changes in the river's water level could kill wildlife, disrupt recreation and pollute the water with sediment by eroding river banks. **Appalachian Power Company operated The Reusens plant between 1924 and 2011 before shuttering the plant after a series of mechanical and electrical issues made the dam too expensive to operate.** Eagle Creek purchased the dam in 2017 and began operating it the same year. The license for Reusens, which has a power generation capacity of 12.5 megawatts, was last issued in 1994 and will expire in 2024. Basten, a supporter of hydroelectricity, said his business relies on the stability of the river's water level. He said if the dam was ever to change hands again he plans to research the new company. "The community needs to be more aware," Basten said. "There was a lot of dealing that happened before [Eagle Creek] bought the dam. We couldn't have blocked the purchase but we could have done some more vetting. Our natural resources are our greatest asset. **The one thing I've taken away from this is I'm going to be more aware if the dam changes ownership.**"

(A tidbit.)

Allison Creek Hydroelectric Project

cvea.org, 1/12/19

Allison Creek, Alaska began generating commercial hydropower on October 5, 2016. Since then, CVEA has seen record annual hydro generation and an extension of the summer generation season by an additional 6-8 weeks... Click the link below for 'all things Allison Creek! You'll find project information, detailed reports, current updates, images, and construction videos!

<http://allisoncreekhydro.cveahydro.org/>



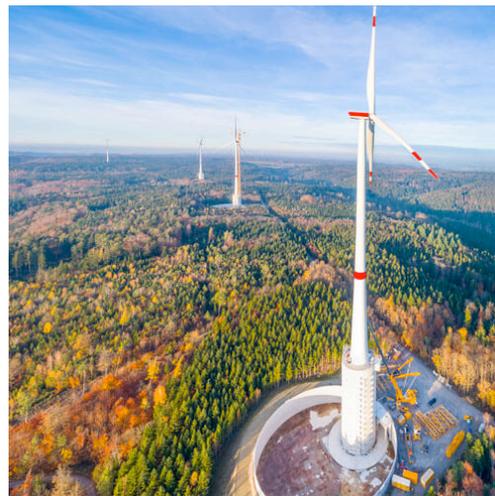
(Wind and hydro working together. It's about time!)

The world's first wind turbines with built-in hydroelectric capability

By Michelle Froese | January 14, 2019, .windpowerengineering.com

Wind turbines are designed to generate energy, not store it. When winds are sufficient, the power goes straight to the transmission grid. **But if the grid gets more energy than it can handle, electricity prices drop and turbines are shut down. The reverse is also an issue. When winds are low, turbines earn little to nothing.**

The pilot project in Germany's Swabia-Franconian Forest features wind turbines mounted on bases that will serve as water reservoirs, effectively increasing tower height by 131 ft. for a peak rotor reach of 807 ft. above ground. Energy storage systems are one answer to the variability challenge of wind-generated power. However, most battery-based systems are still too costly to combine with most wind farms. So engineers in Europe have been busy thinking outside the box and inside the turbine tower. Their idea is to have towers on top of tall bases that serve as power-storage devices, holding water for hydroelectric generation. When power is in surplus, water is pumped into the upper reservoir. When winds slow or stop, the water is discharged through a hydro-turbine.



Multi-national construction company, Max Bögl, has taken the lead of this idea and fully built a four-turbine pilot project with integrated hydropower that's currently running successfully. It is the

first of its kind, located in Germany's Swabian-Franconian Forest in the town of Gaildorf. "The water battery is a natural storage facility which stands out for its durability and high degree of flexibility," says Jürgen Joos, CFO at Max Bögl Wind AG. According to GE Renewable Energy, which supplied the turbines for the project: "The project creates an affordable way to store excess energy in a natural reservoir, and integrates the source and storage into one system." But there is a catch. For the system to work, location is key. Turbines must sit atop a hill with a fall height of at least 490 ft. and with a water resource in a radius of about three miles for the first fulfillment of the storage system. For the pilot project, a man-made lake is situated 600 ft. below the wind farm. The plant itself will work much like a hydro-pump station. Water flowing downhill from the reservoirs will supply additional power to the hydro plant when electricity is needed. Conversely, when the energy supply is high, the hydro plant can pump water back uphill to the reservoirs.

In this manner, the system acts like a giant battery. Wind and water work together to ensure efficient electrical output from the plant. The wind project features GE's 3.4-MW turbines with 440-ft diameter rotors. The 131-ft tall base doubles as a water reservoir and can hold up to 1.6 million gallons. It further adds to the tower height, so the rotors will sweep up to 807 ft. The wind turbines sit in reservoirs that can hold nine million gallons of water. At full capacity, the wind farm should produce 13.6 MW, along with another 16 MW from the hydroelectric capability. Along with the wind turbines, GE is supplying the management software, which is intended to make the plant run more efficiently. The company's Digital Wind Farm suite can collect and analyze data from different sources, such as the turbines and grid, to maximize power production. If all goes well, Max Bögl says it expects to build one or two similar projects a year in Germany after 2019

(That's benevolent of them.)

Preliminary Decision – LIHI Certification of the Brooklyn Dam Hydroelectric Project, Upper Ammonoosuc River, Northumberland, NH

lowimpacthydro.org, 1/11/19

Lexington, MA (January 11, 2019): On January 10, 2019, the Low Impact Hydropower Institute (LIHI) preliminarily approved Low Impact Certification for the Brooklyn Dam Hydroelectric Project, with the following two conditions:

Condition 1: The facility Owner shall submit quarterly reports to LIHI by the end of the month following the calendar quarter (e.g., April 30, July 31, October 31, January 31), information sufficient to confirm run-of-river operations, adherence to impoundment refill rates, and related agency

communications for the prior calendar quarter. Any requests made by the Owner for modifications to operations or refill rates, agency approvals of such modifications, copies of notifications to FERC and NHDES of any OCMP deviations, and copies of annual OCMP deviation reports to NHDES shall also be provided to LIHI with these reports.

Condition 2: The facility Owner shall submit to LIHI the NHDES review and comment on the 2018 water quality monitoring results within 60 days of receipt. The Owner shall consult with NHDES and USF&WS on the need for additional sampling in 2019 and 2020 and file with LIHI the results of that consultation by July 31, 2019. If additional sampling is not required by NHDES and USF&WS, the Owner should evaluate the need to file with FERC a request for amendment to the exemption to remove the requirement for additional sampling and, if applicable, provide a copy of the request and any subsequent FERC approval to LIHI when available. If minimum flows into the bypass reach are required, LIHI shall be provided with all relevant information and agency communications within 60 days of receipt.



This decision is preliminary pending the 30-day appeal window. Only those who commented on the initial application during the 60-day comment period are eligible to file an appeal. Such appeal needs to include an explanation as to how the Project does not meet the LIHI criteria. Appeal requests can be submitted by email to comments@lowimpacthydro.org with "Brooklyn Dam Hydroelectric Project" in the subject line, or by mail addressed to the Low Impact Hydropower Institute, 329 Massachusetts Ave, Suite 2, Lexington, MA 02420. All requests will be posted to the website. The applicant will have an opportunity to respond and any response will also be posted. Requests must be received by 5 pm Eastern time on February 10, 2019. The full application and reviewers report are available [HERE](#). If no appeal requests are received and the decision becomes final, the Certification term for the Project.

(Don't usually include foreign articles, but this one is interesting,)

No Baram dam, no problem: Villagers build own micro hydro plant

By Sulok Tawie, 14 January 2019, malaymail.com

MIRI, Jan 14 — The villagers of Long Liam, an Orang Ulu longhouse in the deep interior of Baram who were among the thousands opposing the construction of a mega dam in their area, now have their own version of a dam in the form of a micro hydro project (MHP). Inaugurated over the weekend, the MHP was built by the villagers themselves with guidance from NGOs SAVE Rivers, Tonibung, Bruno Manser Fund, Green Empowerment, and Seacology. SAVE Rivers chairman Peter Kallang said the MHP is of great significance to the villagers. "With this project, we show how rural electrification can look like without large dams. Development is possible without destructive dams," he said in a media statement. He said the villagers have requested the state government to support efforts to protect the water catchment area for their village.



"Logging in the water catchment area would lead to siltation and threaten the long-term sustainability of the micro hydro project," he said. Former chief minister, the late Pehin Sri Adenan Satem, in 2015 cancelled the 1,200 megawatts Baram dam that would have displaced some 20,000 villagers had its construction gone ahead. Kallang said SAVE Rivers will hold a conference on clean energy collaboration in Kuching on March 15 to 16 this year, to be attended by government officials, international and local energy experts, industry representatives, and grassroots communities. "The goal is to discuss concrete pathways to achieve economically and environmentally sustainable energy systems that address energy poverty and energy needs for development in Malaysia," he said. He said SAVE Rivers supports sustainable development and it is ready to discuss and cooperate with the state and federal governments on sustainable energy.

(Always something new.)

InventHelp Inventor Develops Hydroelectric Power System (NWO-282)

PRNewswire, January 14, 2019, benzinga.com

PITTSBURGH, Jan. 14, 2019 /PRNewswire/ -- An inventor from Robert, La., has developed the HYDROCELL, a new type of utility scale hydroelectric power generation system. It derives energy from river and ocean current and converts it into electrical current.

"I was watching a program about waterwheels, and I



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formulated the idea of a portable waterwheel," said the inventor. The HYDROCELL serves as a means to provide hydroelectric power. It provides a highly steady and reliable source of electricity. This energy source produces energy in areas where it is most needed. It is more affordable than current types of energy production. Unlike alternative sources, this one offers no negative environmental side effects. In addition, it offers a highly mobile design that is adaptable for use in a wide variety of locations. The original design was submitted to the New Orleans sales office of InventHelp. It is currently available for licensing or sale to manufacturers or marketers. For more information, write Dept. 18-NWO-282, InventHelp, 217 Ninth Street, Pittsburgh, PA 15222, or call (412) 288-1300 ext. 1368. Learn more about InventHelp's Invention Submission Services at <http://www.InventHelp.com>.



Environment:

(Robot fish.)

Can robotic 'sensor fish' save salmon from hydroelectric dams?

BY LISA STIFFLER, January 12, 2019, geekwire.com

This special series focuses on important community issues, innovative solutions to societal challenges, and people and non-profit groups making an impact through technology.

Some 71 percent of the world's renewable energy comes from hydropower and more dams are being built all of the time. But while energy wrung from rivers doesn't release greenhouse gases and contribute to global warming, there are still environmental costs.

And in the Northwest, the main concern is the harm caused to salmon traveling up river to spawn and downriver as juveniles returning to the ocean. The dams injure and kill fish in a variety of ways as they navigate fish ladders and bypasses, plunge through turbines and swim through unnaturally warm reservoirs.

Scientists at the Pacific Northwest National Laboratory (PNNL) in the Eastern Washington city of Richland hope to make that journey less life-threatening with new technology to measure the physical impacts of hydropower infrastructure on fish and through improvements to tools that track salmon migration.



McNary Dam



Robotic fish

The Department of Energy's PNNL has invented something called the Sensor Fish, a device that's about 3 1/2 inches long, or roughly the size of juvenile salmon called a smolt. The sensor is dropped into the water at the top of a dam and travels through it, collecting information on pressure, acceleration, rotational velocity and orientation. The next-generation device takes about 2,000 measurements per second and is retrieved below the dam. The reusable sensors will be available beginning this spring for about \$3,500 a piece. They're being manufactured by Minnesota-based Advanced Telemetry Systems (ATS). "There is nothing else like

this out there," said ATS sales manager Joe Allen. "This is a first."

PNNL also created the first and possibly only injectable tracking device that can be inserted into young salmon to monitor their migration for up to three months. The minute acoustic transmitter is roughly twice the size of a grain of basmati rice. These are also licensed for manufacture by ATS and cost \$250. They're used only once. We want to identify what kind of dam operations are affecting fish behavior. The hope is that data from the two devices can help dam engineers and operators design and manage hydropower plants in a more fish friendly manner. "We want to identify what kind of dam operations are affecting fish behavior," said Daniel Deng, a laboratory fellow at PNNL who helped lead the research. Using the two technologies together, "we can correlate the fish behavior with the physical conditions."

Debate over the effects of Northwest dams on salmon has been on a steady simmer for years. Salmon and orca scientists and advocates have sought for more water to be spilled at the dams and in some cases called for their removal in order to save endangered marine life.

But the fight is heating up over the breaching of four dams in the lower Snake River, which flows through Southeastern Washington and into the Columbia River. The Puget Sound orca population known as the Southern Residents have seen numerous deaths in recent years, and their population is hovering at 74 — an alarming number not seen since their capture for aquariums and aquatic parks ended decades ago. A key cause of their decline is a shortage in chinook salmon, their preferred food, including fish that spawn in the Snake and Columbia river systems. In his two-year budget, Washington Gov.



Jay Inslee proposed spending \$1.1 billion on orca recovery. That includes \$750,000 for a stakeholder process to consider the environmental, economic and social impacts of removing the lower Snake River dams.

Those concerned about salmon and orcas say in this case that data from new tech innovations won't help the problem. The government has already spent vast sums making these dams less harmful to fish, but salmon survival still suffers. "These new gizmos might provide new information, but I'm not convinced that it's a good use of money and that it's going to help restore salmon in any regard," said Joseph Bogaard, executive director of the nonprofit Save Our Wild Salmon, which supports the dams' removal. "People are well meaning and trying to find ways to maintain the hydro system and protect and restore salmon," he said. "But we know that some major changes are needed."

There are hydropower projects elsewhere that could potentially benefit from improved data collection. China, Brazil and Canada each produce more hydropower than is generated in the U.S. The technology created at PNNL could help people strike a better balance between energy production and wildlife in the design and operation of the power facilities. The PNNL researchers are working on ever better devices. A mini Sensor Fish is in development, and work is underway to make acoustic tags that are smaller, more powerful and longer lasting. "We are just happy to see this out in the market," Deng said, "so people can use these tools and people can gather information that hasn't been gathered before."



Other Stuff:

(It's the thing now. No mention of hydro.)

New US power capacity in 2019 will come from renewables, natural gas - EIA

Author: Rick Finster, 1/11/19, renewablesnow.com

January 10 (Renewables Now) - According to the US Energy Information Administration's (EIA's) latest inventory of electric generators, 23.7 GW of new capacity additions and 8.3 GW of capacity retirements are expected for the US electric power sector in 2019. The utility-scale capacity additions consist primarily of wind (46%), natural gas (34%), and solar photovoltaics (18%), with the remaining 2% consisting primarily of other renewables and battery storage capacity.



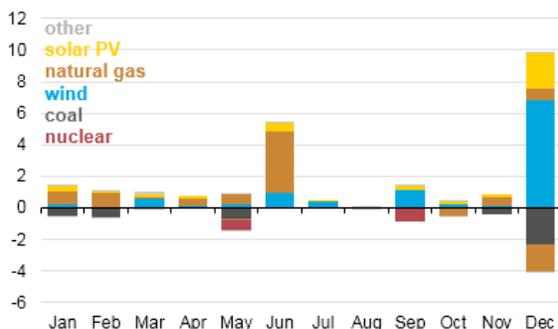
WIND: A total of 10.9 GW of wind capacity is currently scheduled to come online in 2019. Most of the capacity will not come online until the end of the year, which is typical for renewable capacity. Three states—Texas, Iowa, and Illinois—will be home to more than half of the 2019 planned wind capacity additions.

NATURAL GAS: Planned natural gas capacity additions are primarily in the form of combined-cycle plants (6.1 GW) and combustion-turbine plants (1.4 GW). Most of the natural gas capacity is scheduled to be online by June 2019 in preparation for high summer demand. Of the planned natural gas capacity additions, 60% will occur in Pennsylvania, Florida, and Louisiana.

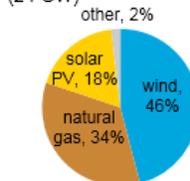
SOLAR PHOTOVOLTAICS: Nearly half of the 4.3 GW of utility-scale electric power sector solar photovoltaic (PV) capacity additions are located in three states: Texas, California, and North Carolina. In addition to the electric power sector, other sectors, such as the residential and commercial sectors, also install solar PV, e.g., distributed PV or rooftop systems. In addition to utility-scale capacity, EIA's Short-Term Energy Outlook expects an additional 3.9 GW of small-scale solar PV capacity to enter service by the end of 2019.

Scheduled capacity retirements for 2019 primarily consist of coal (53%), natural gas (27%), and

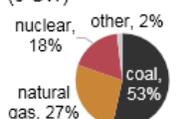
U.S. electric capacity additions and retirements, 2019
gigawatts (GW)



planned additions
(24 GW)



planned retirements
(8 GW)



nuclear (18%), with a single hydroelectric plant in the state of Washington and other smaller renewable and petroleum capacity accounting for the remaining 2%.

COAL: Most of the coal retirements are scheduled to occur at the end of 2019. Half of the planned retirement capacity for coal is at a single plant, Navajo, located in Arizona

that first came online in the 1970s. The 4.5 GW of coal-fired capacity expected to retire in 2019 is relatively small compared with the estimated 13.7 GW that retired in 2018, which was the second-highest amount of coal capacity retired in a year.

NATURAL GAS: The scheduled natural gas retirements (2.2 GW) consist mostly (2.0 GW) of steam turbine plants. The natural gas steam turbine plants that are scheduled to retire are all older units that came online in the 1950s or 1960s. Most of the retiring natural gas steam turbine capacity (1.6 GW) is located in California.

NUCLEAR: Two nuclear plants totaling 1.5 GW are currently scheduled to retire in 2019. The Pilgrim Nuclear Power Station, located in Massachusetts, is scheduled to retire in May, and the remaining unit at the Three Mile Island Power Station, located in Pennsylvania, is scheduled to retire in September.

The utility-scale values in this article refer to capacity reported to EIA by developers and power plant owners—respondents to EIA's annual and monthly electric generator surveys. In the annual

survey, respondents are asked to provide planned online dates for any known generators coming online in the next five years (or 10 years for coal and nuclear units). The monthly survey tracks the status of generators coming online in the coming year. Based on previous analysis of reported online dates, these values tend to be accurate within the coming 12 months.

(Wonder if they believe this.)

Most-Hated Firm in America Has 'String of PR Disasters'

Facebook really gets our goat, per 24/7 Wall St.

By Jenn Gidman, Newser Staff, Jan 11, 2019, newser.com

(NEWSER) – The opposite of love may be indifference, but hate is what Americans harbor for the companies that annoy, enrage, and frustrate them. And those firms fall in a variety of sectors, per 24/7 Wall St., which ranked the most loathed companies in the country based on consumer surveys, data from the employee-scoring site Glassdoor, and negative headlines. Metrics used fell under the categories of worker satisfaction, brand value, customer service, and financial performance. Public enemy No. 1, per the site: Facebook, which was hit with "a string of public relations disasters" over the past year, including revelations on how the platform messed up its handling of the Russian disinformation campaign during the 2016 election. In addition to our collective social-media nemesis, here are the 10 most-detested picks:



- | | |
|------------------------|----------------------------|
| 1. Facebook | 6. Frontier Communications |
| 2. Eli Lilly | 7. CBS |
| 3. Vice | 8. Spirit Airlines |
| 4. Juul | 9. Wells Fargo |
| 5. Washington Redskins | 10. General Electric |

See which other companies incite the ire of the American populace here:

<https://247wallst.com/special-report/2019/01/10/americas-most-hated-companies-6/>

The most loved and hated telecom companies: <http://www.newser.com/story/243198/most-loved-and-hated-telecom-companies-in-us.html>



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