

4/8/2016



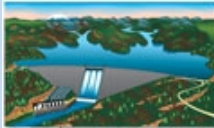
Some Dam – Hydro News™ *And Other Stuff*



Quote of Note: "Just because you do not take an interest in politics doesn't mean politics won't take an interest in you!" -Pericles

Some Dam - Hydro News → *Newsletter Archive for Back Issues and Search* <http://npdp.stanford.edu/>
Click on Link (Some Dam - Hydro News) Bottom Right - Under Perspectives

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: 2013 Trentadue Zinfandel "La Storia"
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(Show me the money!)

Grants Will Support Randolph Dam Removal

Staff report, March 26, 2016, vnews.com

Randolph, VT — The White River Partnership has received grants totaling about \$160,000 to remove a dam on the Third Branch of the White River this summer, restore habitat and monitor the removal's long-term effects on fish passage. The funding is from the Davis Conservation Foundation, the National Fish Passage Program, the Upper Connecticut River Mitigation and Enhancement Fund, and a Vermont Watershed Grant. It also includes a \$10,000 Trout Unlimited Embrace-A-Stream grant received by that organization's Greater Upper Valley chapter. The chapter will also



contribute proceeds from its 2015 and 2016 fly fishing tournaments toward the work, the partnership said in a news release.

The Randolph dam is downstream of the Main Street Bridge in Randolph village, at the approximate site of the original Sargent, Osgood & Roundy foundry dam. **No longer in use, the dam is a complete barrier for spawning trout, the partnership said.** Removing it will open 98 miles of cold-water habitat to fish passage, open the Third Branch main stem to paddling and improve flood resilience for Prince Street businesses near the river. Last fall, the Randolph Selectboard voted unanimously to support the project. Ripple Natural Resources, a Randolph engineering firm, is designing the removal. Volunteers from the White River Partnership, the Trout Unlimited chapter and others will restore in-stream and riverside habitat and help the U.S. Fish and Wildlife Service monitor fish passage before and after the removal.

(All it takes is money. Can't do these things for free.)

Engineers: Sprague dam needs \$1 million for repairs

By Adam Benson, norwichbulletin.com, Mar. 27, 2016

SPRAGUE, CT — **A 116-year-old earthen dam along the Little River in Sprague needs about \$1 million worth of work to shore it up.** That's according to Norwich-based engineering firm CLA Associates, which provided town leaders with a site assessment of the Hanover Dam in late January as Sprague officials prepare to apply for a \$44,200 federal Department of Agriculture grant that would pay for pre-planning services. **The dam is among six in Sprague, but the only one to carry a "C" classification by the state Department of Energy and Environmental Protection.** That means it must be inspected every two years. State engineers say the dam has a high hazard potential if it fails.



According to the agency's website, a "C" rating is the most severe that can be applied to dams, and it means failure would lead to "probable loss of life; major damage to habitable structures; damage to main highways; and great economic loss." Inspectors and First Selectman Cathy Osten said despite the dam's grade, its structural integrity is not the problem. Instead, years of overgrowth and build-up around its base have made regular maintenance difficult. **Osten said the final price tag could be "significantly lower" than the \$1 million projection.** "Until we have an idea of what is entailed in this, we have to try and make an early assessment," she said. "There is 30 years of growth there that has not been taken care of." The town took control of the dam a few years ago through a tax foreclosure, putting it in a position to apply for grants to bolster the structure. CLA most recently surveyed the site in November 2014. Constructed in 1900, the 26 ½-foot tall, 750-foot long dam impounds about 400 acre-feet of water. In an email to Osten, CLA engineer Robert DeLuca said dam face improvements, dredging and maintenance to its auxiliary spillway are all needed. **"This work includes flattening the dam face and installing a toe drain and minimal maintenance on the existing spillway," DeLuca wrote. "This was identified as needed in past DEEP correspondence."** The dam is located around residential areas on Parkwood and Hanover roads, and property owners there say they're interested in the steps being taken to identify problem spots. "If it's a safety issue, yes, I think it definitely needs to be done. I'd just hate to see the whole thing denuded," said Jeanne Foley, a Parkwood Road resident.

(Digging a big hole near a dam of this size is not my favorite thing. What happened to we?)

Corps General: Quarry does not threaten Old Hickory Dam

By Richard G. Kaiser, March 28, 2016, tennessean.com

Story Highlights

- **The risks are extremely low for damage to Old Hickory Lock and Dam project from a proposed quarry.**
- **If I believed otherwise, I would immediately seek to limit the proposed quarry operations.**
- **The U.S. Army Corps of Engineers is neither for nor against a quarry. We are for dam safety.**

Dam safety is a crucial mission of the U.S. Army Corps of Engineers (USACE), and in particular, the Great Lakes and Ohio River Division — the division I currently command. I have heard the concerns from the public about the proposed quarry on non-federal property adjacent to Old Hickory Dam. **I want to assure everyone that my Corps dam safety professionals have thoroughly evaluated the quarry's proposal to ensure that Old Hickory Dam will not be harmed.**

I am neither for nor against the quarry; I am only for the safety of Old Hickory and the safety of the public affected by Old Hickory. My division is also home to the USACE Dam Safety Center of Expertise. We implement a dam safety program nationwide to ensure our dams deliver their intended benefits while reducing risk to people, property and the environment through continuous assessment, communication and management. **We use risk-informed decision making for dam safety decisions and pay particular attention to activities such as drilling and blasting near or around our dams.** Blasting operations near a dam are not uncommon, and in fact recently occurred right next to Kentucky Lock and Dam. **To assist in risk-informed management, almost every dam we own uses piezometers and other monitoring devices to detect changes, which may signal a pending issue with the structure.** Based on modeling of worst-case blast scenarios conducted by my dam safety professionals, we believe that risks are extremely low for any damage whatsoever to the Old Hickory Lock and Dam project due to the proposed quarry operations.



If I believed otherwise, I would immediately seek to limit the proposed quarry operations to a point where I was satisfied that chances for damage were indeed minimal. My Nashville District recommends, and I agree, that if the proposed rock quarry becomes operational, we will execute enhanced monitoring of blast vibrations to validate our findings and facilitate field adjustments in the quarry's operation. **Under no circumstances will the Corps of Engineers agree to blast operations that exceed tolerable limits, which would cause any damage to Old Hickory Lock and Dam.** This week, I will personally visit Old Hickory Lock and Dam with city and congressional leaders from Nashville — this is my third trip to Nashville, and my second to Old Hickory Dam, in the past seven months because Nashville is that important to me. **I want to be clear that the U.S. Army Corps of Engineers is neither for nor against a quarry.** We are for dam safety and will continue to ensure that our projects deliver their congressionally authorized purposes safely and effectively. We will also continue to communicate risk to the public. Old Hickory Lock and Dam will remain safe and effective, with or without a quarry. For those interested in the technical background about this issue, you can find a preliminary analysis of potential quarry effects on the Nashville District Web page at www.lrn.usace.army.mil/Media/OldHickoryRockQuarry.aspx. *Brig. Gen. Richard G. Kaiser, U.S. Army, is the commanding officer of the U.S. Army Corps of Engineers, Great Lakes and Ohio River Division based in Cincinnati, which oversees the Nashville District.*

(How much more study?)

Corps studies safety of dam

Study to identify issues, potential risks at facility along Lewisville Lake

By Britney Tabor, Staff Writer, dentonrc.com, 28 March 2016

A safety modification study is being conducted at Lewisville Lake Dam to identify specific issues and potential risks, according to U.S. Army Corps of Engineers officials. Corps officials will host a joint press conference with U.S. Rep. Michael Burgess, R-Lewisville, TX, next week in which in-depth details about the study's status and progress on Lewisville Lake Dam slide repairs will be discussed. Col. Calvin C. Hudson II, the corps Fort Worth district commander, said once the study is completed, the corps will execute a project



for addressing dam issues. It's expected the project will get underway in July 2018. "We really accelerated that because we [weren't] supposed to start until 2020," he said. Repairs to the 161-foot landslide along the upside stream of the Lewisville Lake Dam are progressing and are on schedule to be completed by late spring, Hudson said. The \$6.4 million repair project got underway in January. The slide was first discovered last June during record rains and flooding.

Earlier this year, corps project manager Mike Kingston said in a statement that "the reconstructed embankment will be protected by stone riprap on the upstream side and Bermuda grass sod on the downstream side." At the time, he said the project required that some "asphalt roadway and subgrade layers" on the embankment crest be removed and replaced. The Dallas Morning News reported in January that repairs are necessary to prevent further erosion. Without it, there's a risk the dam can fail and send a 65-foot-tall water wall toward downtown Dallas in the path of more than 400,000 inhabitants, according to the newspaper. The corps told The News permanent repairs would cost between \$50 million and \$500 million and could take several years to complete. Clay Church, a spokesman for the corps, said the Lewisville Lake Dam continues to function as designed and is "very safe." It continues capturing floodwaters during rains, he said. Corps officials continue operations and maintenance at the Ray Roberts Lake Dam, but no large projects or studies are planned for the facility, Church said. He said the facility "continues to function as designed and it continues to do a great job with its flood risk management system." Last summer, record rainfall in the North Texas area caused about \$30 million in damages to and forced the closure of some parks and recreation areas in the Dallas-Fort Worth area at lakes managed by the corps. "We are focusing on our remediation of those areas right now so that we can re-open those and get them back and turn them back over to the public so that they can enjoy them as they were designed to do," Hudson said.

(Guess they're beyond there useful life.)

Explosion, fire damages electrical system at Philpott Dam

By BEN R. WILLIAMS | Martinsville Bulletin, March 30, 2016, roanoke.com

A Tuesday night fire at Philpott Dam destroyed equipment already slated to be replaced, according to Craig "Rocky" Rockwell, operations project manager for the U.S. Army Corps of Engineers.

About 7:30 p.m. Tuesday, Rockwell said, one of the switches that carries electricity from the dam's generators to the power grid exploded, causing a fire in the control room. No one was in the control room at the time.

The blast took place in the basement of the powerhouse along Spillway Road in Henry County and was under control within an hour, Bassett Fire Chief Junior Lynch said, although crews remained at the dam for several hours. One firefighter was treated for an injury to his hand, Lynch said. The explosion did not cause structural damage to the dam, Rockwell added. At this point, he said, the investigation into what caused the explosion is continuing. However, the switchgear

system that was destroyed currently is in the process of being replaced with a more modern system, a project that the Corps has been working on for several months. We're building [a structure] right now that is going to house the new switchgear system," Rockwell said. "The old system had approached its end of life anyway and was being replaced. If you're going to have a system go bad, right when you're in the process of replacing it is not a bad time for it."

The system that was destroyed was about 65 years old, Rockwell said. The new system will have more modern safety features and be housed in a separate building to further minimize the chance of injuries in the event of a system failure. It is difficult to put a dollar value on the damage, Rockwell said, considering that the switchgear that was destroyed was scheduled to be junked within weeks. "We're going through a multi-million dollar upgrade," he said. "Did it really cost us any more for the system we're replacing to go down two to three weeks earlier? ... If you were going to demolish a building and some kid came in and broke all the windows out of it before they demolished it, could you really say that the kid did any damage?" As of now, there will be no power generation at the dam until the new switchgear building is completed and the new equipment brought online. Prior to the Tuesday incident, Rockwell said, that switch-over was expected to be completed about mid-June, although Tuesday's fire could change that timeline. "If anything, this might force us to speed up," he said.



"Maybe the fact that we don't have to deal with the old system will make it a little quicker to deal with the new, but I really don't know. We're going to be assessing all that through the next day or two."

Dominion Power customers will not notice any changes in the meantime, Rockwell said, because Dominion will simply draw power from its other sources, which is a fairly common occurrence. Because the dam will not be generating power for the next several weeks, he said, the Corps will work with its water management team to determine a set level of flow that will maintain a steady level in both Philpott Lake and the Smith River. While the investigation into what happened will continue, Rockwell said, so far, it appears that the fire will have minimal impact. "The majority of the damage is to the stuff that we're replacing, and that's a good thing," he said. "And nobody got hurt, and that's a great thing."

(The coffin is occupied, Wants to put in the final nail. The data will never be up to date.)

Commentary

Alaska can't afford to waste another dime on Susitna dam

By Samuel Snyder, March 31, 2016, adn.com

OPINION: I just sat through the first three days of "pre-licensing" for the proposed Susitna-Watana dam. And, for much of those three days scientists from state and federal resource agencies just grilled state-hired science consultants about the quality of their studies on the project. Each day, critiques flew at Alaska Energy Authority during these initial study review meetings about flawed studies, cut corners, and iffy data that are supposed to justify the state of Alaska's plan to dam the Susitna River. Some of



the most respected energy and fisheries experts in state and federal agencies, including Alaska Department of Fish and Game, National Marine Fisheries Society and the Federal Energy Regulatory Commission (the agency with the final say on the pending dam license) raised these concerns.

At a time when the state's dire budget dominates our attention, I am surprised that so many Alaskans have no idea that the state, through the AEA, is still slowly and quietly plodding along in pursuit of the Susitna dam, and spending state money to do it. As the deficit literally grows by the day, few projects symbolize gross, negligent spending as well as the Susitna dam does -- both in size (705 feet tall) and cost (at least \$6 billion). **To date, the state of Alaska has spent roughly \$193 million on these questionable studies alone.** One notable example of the problematic studies was uncovered in October 2014, when AEA's scientists admitted they had a difficult time differentiating between juvenile coho and chinook salmon. As you can imagine, hearing the state's highly paid consultants admit they didn't know the difference between two critical salmon species left me skeptical about the quality of the investment the state of Alaska has made in this costly precicensing exercise. This round of meetings was hardly different from those in 2014, as one study flaw after another was uncovered. Federal and state agency officials, along with independent scientists, quickly identified myriad "significant errors" in study design, execution and results.

I am grateful that these meetings are happening though, because the reviews and criticisms of AEA's research will go on an official record. AEA shouldn't be able to pretend their research is reliable, as they use it to justify building the type of dam the rest of the world has not only stopped even considering but is actively tearing down because of detrimental impacts to fish, rivers and communities. But beyond these meetings, the state of Alaska should stop this fiscal madness and shut this project down.

As of now, Alaska's position appears to be to let AEA slowly advance the Susitna dam despite science and economics pointing to the contrary. The governor appears unwilling to make a hard decision.

[In an op-ed printed March 13](#), Gov. Bill Walker and Lt. Gov. Byron Mallott argued, **"When you're facing hard decisions, the human impulse is to procrastinate.** We get it. As our team was delving into the options for tackling Alaska's growing budget gap, don't think we weren't tempted to kick the can down the road." They are right. But with Susitna, the administration is itself kicking the can down the road. By allowing the project to limp along, quietly draining millions of state funds that could be invested in people or projects that will benefit all of Alaska. At the beginning of their administration, Walker and Mallott appeared to listen to Alaskans who asked they put fish first, among other items. But the slow pursuit of Susitna is one of many places where their administration is quietly putting our fisheries at risk, rather than putting fish first. **Healthy fisheries and a healthy economy should go hand in hand.** The state's fishing industry is valued at \$5 billion and sport fishing brings in around half a billion dollars to the state. As for the Susitna River, we know it is the fourth largest producer of king salmon in Alaska. Further, the Susitna drives the upper Cook Inlet commercial fishery that is valued at \$35 million and also hosts a sport and recreational economy that employs more than 1,900 individuals. **Speaking of money, AEA has told the administration they need \$100 million more to get to the licensing process.** Alaska has already sunk enough into some seriously flawed research. Fixing those flaws is going to require a lot more money beyond \$100 million. With nearly \$200 million already spent and a potential construction price tag of well more than \$6 billion, the Susitna dam is a relic of Alaska's cash happy days with rampant -- and in some cases irresponsible -- spending that was possible due to **the price of oil being over \$100 a barrel. As all Alaskans know, those days are gone.** Shutting the Susitna dam down for good, not just kicking the can down the road, would show the administration is truly willing to put our economy and our fish first. **Samuel Snyder is the Alaska engagement director for Trout Unlimited and has worked with the community of Talkeetna and the Susitna River Coalition for the past several years to protect the Susitna River from the proposed Susitna dam. He holds a doctorate from the University of Florida's graduate program on religion and nature, where he studied the values and politics of river restoration and trout conservation.**

His book, "Backcasts: A Global History of Fly Fishing and Conservation," is due out from University of Chicago Press in June.



Hydro:

(History was made.)

The Grand Coulee Powers On, 75 Years After Its First Surge of Electricity

A look back at how the powerful dam came to be

By Erick Trickey, March 22, 2016
smithsonianmag.com

The Columbia River roared, the generators in the Grand Coulee Dam began to whirl, and the mile-long dam put the nation's fourth-largest river to work. It was March 22, 1941, and 8,000 people were gathered at the great canyon 100 miles northwest of Spokane, Washington, to see the federal government put its most audacious public-works project into action. Chief Jim James of the San Poil tribe, the dam's reluctant neighbors, pressed the button that sent its first jolt of electricity to the outside world. A high school band played "America, the Beautiful" above the sounds of nature and machine. President Franklin D. Roosevelt's dedication message, sent from Washington, D.C., spoke of the Grand Coulee's power. "A tremendous stream of energy," FDR wrote, "[will] turn factory wheels to make the lives of men more fruitful. It will light homes and stores in towns and cities." Interior secretary Harold Ickes' statement spoke directly to the Grand Coulee's size: "The dam alone comprises the greatest single structure man has built."

Grand Coulee's sheer size makes it a monument and a metaphor. It's one of the largest concrete structures in the world, with 12 million cubic yards of concrete, enough to pave a transcontinental highway. It's 550 feet tall from top to foundation, just five feet shy of the height of the Washington Monument. Though not quite as tall as America's other famed public-works colossus, the 726-foot-tall Hoover Dam, it's several times more massive, a mile long to Hoover Dam's quarter-mile. Even its canyon namesake was enormous. Coulee, with Canadian-French etymology, usually means a small ravine, a gully. But Washington's Grand Coulee was a 50-mile-long, dry valley with steep, 600-foot-high walls, carved through volcanic rock by a flood as the last ice age ended and ice choked off the Columbia River. The dam was built nearby, where two cliffs stand astride a river bend.

A small-town newspaper editor with massive ambitions championed the dam. Rufus Woods, editor of north-central Washington's Wenatchee Daily World, believed damming the Columbia would transform the arid land around his apple-picking town into a verdant, populous paradise. "Wearing a bowler tipped low over his forehead, indoors and out, he exuded self-confidence, even cockiness," wrote Woods' biographer, Robert E. Ficken. From 1918, when Woods first heard the idea from local attorney William Clapp, Woods crusaded for the dam with grand pronouncements in capital letters. The heat and light from the dam, he wrote, "WOULD BE THE MOST UNIQUE, THE MOST INTERESTING, AND THE MOST REMARKABLE DEVELOPMENT... IN THE AGE OF INDUSTRIAL AND SCIENTIFIC MIRACLES."

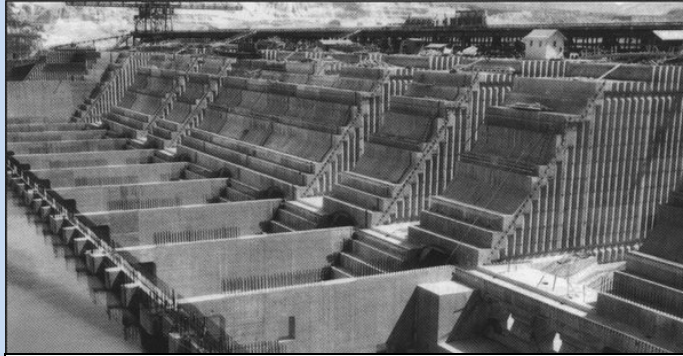


Grand Coulee Dam on the Columbia river, Washington (Farm Security Administration - Office of War Information Photograph Collection (Library of Congress))

In October 1932, Woods, a lifelong Republican, pitched the dam proposal to President Herbert Hoover at the White House, arguing it would provide jobs for thousands at the depth of the Great Depression. Hoover turned him down, saying there was no market in remote central Washington for more electric power. But before Roosevelt even ran against Hoover, he promised Senator Clarence Dill of Washington that he'd build the dam were he elected. Dill, sensing an opportunity, talked FDR up as a potential president to his Senate colleagues and the press, then campaigned for him in fall 1932 across the Pacific Northwest and the Midwest. Once FDR beat Hoover and authorized preliminary funding for the dam under the authority of the National Industrial Recovery Act, Woods was happy to forge an alliance with FDR and Dill, Democrats he once disparaged.

Like other big dams on western rivers, Grand Coulee fit Roosevelt's sweeping ambitions for the New Deal: jobs for men on relief, planned prosperity for vast rural regions, new opportunity for the destitute migrant. During a 1934 visit to the Grand Coulee's remote construction site, FDR declared,

"This country, which is pretty bare today, is going to be filled with the homes... of a great many families from other states of the union," His wife, who came along, was unimpressed. **"It was a good salesman who sold this to Franklin," Eleanor Roosevelt said.** The dam took eight years and more than 100 million man-hours to build. Massive temporary cofferdams diverted half the river to allow work on the foundation, then the other half. Seventy-seven workers were killed -- some drowned, some fallen, some crushed. (Industrial fatalities were more common then: 96 workers died building the Hoover Dam, and 60 died in the construction of the Fort Peck Dam in Montana, including six workers buried in the concrete after a 1938 landslide.) The Grand Coulee Dam emptied the upper Columbia River of the salmon that would swim hundreds of miles upstream to spawn. For a few years afterward, they swam up as far as the dam; after that, they stopped coming. (The U.S. Bureau of Reclamation, the agency that oversees the West's dams, power plants and canals, offers various reasons why the Grand Coulee has no fish ladders even today.)



Grand Coulee Dam during construction in 1937, Washington (Farm Security Administration - Office of War Information Photograph Collection (Library of Congress))

Behind the dam, the Columbia swelled into a 150-mile-long lake. In 1940, the Native Americans of the Colville Indian Reservation watched their ancestors' burial grounds and their salmon-fishing spot at the Columbia's Kettle Falls forever submerged under its rising waters. Though Chief James of the San Poil helped drive the dam's first stake in 1933 and flipped the ceremonial first switch in 1941, the area's native people still mourn the damage done. Today, a bill to compensate the Spokane tribe is pending before Congress. **The Grand Coulee's critics called it a white elephant in the desert, skeptical of the need for it in the dry, empty stretch of eastern Washington nicknamed the Channeled Scabland.** "Up in the Grand Coulee area there is no one to sell the power to except the jack rabbits and the rattlesnakes," complained Rep. Francis Culkin of New York, "and they are not amenable, as you know, to the ordinary processes of an electric meter." World War II proved the critics wrong. Its electricity powered the aluminum plants of the Pacific Northwest and the Manhattan Project's Hanford Site along the Columbia River, which generated the plutonium for the atomic bomb dropped on Nagasaki. Official hype declared that the dam won the war for the Allies. Without Grand Coulee, President Harry Truman claimed in 1948, "it would have been almost impossible to win this war." Historian Paul Pitzer argues in his book *Grand Coulee: Harnessing a Dream*, however, that the government could have diverted power from civilian uses to the war effort had the dam not been built.

The most eloquent celebration of Grand Coulee Dam came not from Truman or FDR, but Woody Guthrie. In May 1941, two months after the dam was dedicated, the legendary folk singer drove

north from California in a banged-up Pontiac to write about the monumental dam, which he would soon compare to the seven wonders of the world. The federal Bonneville Power Administration hired Guthrie for 30 days at \$266 to write songs for a documentary about the dam. Chauffeured in a black 1940 Hudson, Guthrie traveled hundreds of miles along the cascading Columbia River, from Portland to the Grand Coulee Dam, where he got a tour from the head contractor. In one month, Guthrie wrote 26 songs inspired by the Columbia River and the Grand Coulee Dam. The best were Whitman-esque, lyrical and rambling, overflowing with details invoking American possibility: "She winds down the granite canyon and bends across the lea,/Like a prancin', dancin' stallion down her sea-way to the sea./Cast your eyes upon the biggest thing that's built by human hands,/On the king Columbia River, it's the big Grand Coulee Dam."

Grand Coulee Dam's real place in American history needs no embellishment. Though its irrigation projects didn't remake the land as Roosevelt imagined (and Woods' Wenatchee is still mostly known for its apples), the dam's electricity powered the growth of the Pacific Northwest. Today, Grand Coulee is still the United States' largest hydrogenerator of electric power, supplying electricity to the entire western United States, from Washington state to New Mexico, as well as parts of Canada. It generates 21 billion kilowatt-hours, enough to power 2 million homes for a year. A million visitors a year travel to rural Washington State to visit the Lake Roosevelt National Recreation Area, and the dam remains the greatest monument to the New Deal's epic remaking of the American landscape.

Read more: <http://www.smithsonianmag.com/history/grand-coulee-powers-75-years-after-its-first-surge-electricity-180958524/#TfHL00Reb33KraXH.99>

(Relief for the small guy.)

FERC rules off-grid micro-hydro needs no license

3/25/2016, by Todd Griset | PretiFlaherty, jdsupra.com

Federal hydropower regulators have granted reconsideration of a 2015 order finding licensing required for an off-grid micro-hydropower project proposed in Massachusetts. Based on newly submitted evidence that the proposed project would not be connected to an interstate grid, the order granting reconsideration finds that Section 23(b)(1) of the Federal Power Act does not require licensing of the proposed Egnaczak Net Zero Hydro Project.

The case involves a project proposed by Kenneth and Susan Egnaczak, to be located at an existing water-powered mill complex on the Hoosic River in Cheshire, Massachusetts. The so-called "Egnaczak Net Zero Hydro Project" would have a total generating capacity of 10.7 kilowatts. The power would be used at a home and workshop proposed for construction along the river.



Under Section 23(b)(1) of the Federal Power Act, an entity proposing a hydropower project must generally file with the Federal Energy Regulatory Commission either a hydropower license application, or a Declaration of Intention to determine if the proposed project requires a license. The Egnaczaks filed a Declaration of Intention for the project in February 2015. On September 11, 2015, Commission staff issued an order finding that the Federal Power Act requires a license to be issued for the project's construction, maintenance, and operation. Section 23(b)(1) of the Federal Power Act requires a non-federal hydroelectric project to be licensed if it falls into any of four categories: (1) is located on "navigable waters of the United States;" (2) occupies lands or reservations of the United States; (3) uses surplus water or water power from a federal dam; or (4) is located on a non-navigable stream which is subject to the authority of Congress under the

Commerce Clause, affects the interests of interstate or foreign commerce, and is constructed or enlarged after August 26, 1935.

In its September 2015 order on the Egnaczak project, Commission staff analyzed the facts as applied to these facts. On category 1, staff found that there is insufficient evidence to determine whether the Hoosic River is navigable at the project site. Staff readily dispensed with categories 2 and 3, finding that the project would neither occupy any public lands or reservations of the United States nor use surplus water or waterpower from a Federal government dam. In September, staff found that the project fell into the fourth category. In the order, staff noted that it would be located on a non-navigable Commerce Clause stream, would be constructed after 1935, and would affect the interests of interstate commerce because the project would offset both electrical and heating needs for the applicants' home and workshop that would have been otherwise supplied by the interstate grid. The order cited judicial precedent, noting, "It is well settled that small hydroelectric projects that are connected to the interstate grid affect interstate commerce by displacing power from the grid, and the cumulative effect of the national class of these small projects is significant for purposes of FPA section 23(b)(1)." Staff therefore determined that the project requires licensing under FPA section 23(b)(1). But on January 6, 2016, the applicants filed a request for reconsideration and additional evidence in support of their argument that the project does not require licensing. This evidence focused on the fact that the project would not be connected to the interstate grid and thus would not affect interstate commerce. As later described by the Commission: They state that, because neither their home nor workshop has been constructed, they have no existing grid connection. Further, they explain that the project alone will power their home and workshop. The applicants state that the project would produce hydro-mechanical power using a waterwheel, Archimedes Screw, or turbine. The mechanical power would be connected to the hydro generator units to produce electricity or to power rotating equipment, such as a sawmill. In addition, the applicants state that they will use backup power from a fossil fuel electric generator and storage batteries, which would be charged by the hydro generators or the fossil fuel electric generator.

In a March 24, 2016 order, the Commission staff found that the applicants had demonstrated that the Net Zero Project would not be connected to an interstate grid. That order finds that the micro-hydro project would not displace power that would otherwise be supplied by the grid and thus would not affect interstate commerce. As a result, it concludes that "section 23(b)(1) of the FPA does not require licensing of the proposed Net Zero Project." The March 24 order does include a warning: "if the project or the applicants' unconstructed home or workshop are connected to the interstate grid in the future, section 23(b)(1) of the FPA would require licensing and the Commission could require the applicants to apply for a license under section 4(g) of the FPA." Thus in at least this one case, the off-grid nature of the micro-hydro project was a critical factor in the order finding that Section 23(b)(1) of the Federal Power Act does not require licensing of the proposed Egnaczak Net Zero Hydro Project. The key to the revised finding that the project would have no effect on interstate commerce appears to be the fact that power would be consumed in buildings not yet built, with no existing grid tie.

(Climate change affects everything!)

Climate uncertainty prompts questions on dam studies

By Ellen Lockyer, KSKA - Anchorage - March 25, 2016, alaskapublic.org

In Anchorage this week, a panel of federal scientists is getting a look at progress on environmental studies for the Susitna-Watana Dam. It's all part of the Federal Energy Regulatory Commission's [FERC] pre-licensing process, although, an earlier hold on the hydro project has caused a two year delay in work on the application, and now some are questioning whether the environmental studies are accurate.

The Susitna Watana Dam has been touted as part of an ambitious state energy plan aimed at providing 50% alternative power by 2025. Backers of the project say the dam is the answer to Railbelt energy needs for the next one hundred years. The dam is a project of the Alaska Energy Authority. AEA's Initial Study Report on its environmental study plan for the dam was delayed when the Walker administration put six major state projects on hold at the end of 2014. At that time, FERC allowed AEA time out on its work on the federal licensing process, but late last year, federal energy authorities agreed to resume work on AEA's licensing application, although the federal agency asked for a review of AEA's study data through 2014 to determine whether there is enough information to meet federal regulations. That is the point of the Initial Study Review meetings in Anchorage this week and next week. Betsy McGregor, AEA's environmental manager for the Susitna Watana project, says the review is a check-in to see all the environmental work done thus far.



"We report out on how we have implemented the plans, how we did not implement the plans, called variances, and we also have proposed modifications moving forward that we are asking FERC to rule on. The agencies at this point in time have the opportunity to provide their study modifications and FERC will rule on those as well." FERC approved AEA's initial study plan in 2013, before the hold went into effect. The data in the studies dates from 2013 and 2014. McGregor says AEA consulted with federal agencies in developing the study agenda, and provided ample opportunity for review of its work through quarterly reports up until the hold took place. But Sue Walker, a scientist with NMFS in Juneau, says the data is not timely. "Because of the delays, we are actually looking at three years of study, and this is our first chance to have any outside expert review of how those studies were conducted and analyzed," Walker said Wednesday.

AEA's study plan is supposed to assess baseline conditions, but NMFS's Walker says it is hard to say that the studies are representative of current conditions. She says anomalous weather in Alaska the past two years warrants new data. "And we will also recommend a modification to a study that is being used to address climate change. Because we feel climate change in a water dependent project in Alaska that is dependent on snowfall, glacial melt and rainwater is going to continue changing under the next hundred years, and that the precision exists to look at how those changes in climate will affect this project." NMFS has the responsibility of mitigating the effects of dams on marine species and anadromous fish.. such as salmon. And the dam's effect on salmon is a major concern, according to Mike Wood, a resident of Chase and president of the anti - dam group, Susitna River Coalition. He says during the time of studies, there have been floods and late breakups in Southcentral. "Two one hundred year floods, actually, and the latest breakup every recorded in the history of the Susitna, during this period of studies." Wood says the amount of data AEA is presenting does not justify the amount of money the state has spent on the dam project. "We are now a \$196 million into this process, and we are finally having a chance to get an understanding of what the science looks like." AEA's McGregor says the initial study review is only the earliest phase of the licensing process. If FERC approves, some studies will be modified, and new studies will be conducted before a second review occurs. After that, on approval, an impact assessment will be conducted as part of the dam license application. The current meetings continue through March 30 .

(Rain can do wondrous things.)

Ukiah's hydroelectric plant operating at full capacity for first time in four years

GLEND A ANDERSON, THE PRESS DEMOCRAT | March 25, 2016, pressdemocrat.com

While fishermen took advantage of high water levels in Lake Mendocino to cast their lines from benches at the southern parking lot this week, huge turbines some three stories below ground at the base of the lake's dam were utilizing excess lake water to generate electricity at full speed for the first time in four years. With the lake topped off, water releases from the dam have been increased sufficiently to operate the city of Ukiah's hydroelectric plant at up to its maximum capacity – 3.5 megawatts, enough to supply a third of Ukiah's electric power demand in the winter, when demand is relatively low, said electric utility Director Mel Grandi. The city has a population estimated at about 15,870. "The plant has been running very well," Grandi said. It takes water releases of roughly 400 cubic feet per second to run the plant at full capacity, he said.



March discharges from the lake have ranged from 87 cfs to almost 1,600 cfs. The flows were holding at about 480 cfs for most of this week, then dipped slightly on Friday to about 355 cfs. The amount of water discharge isn't the only factor driving electrical generation, Grandi said. The higher the water level in the lake, the more strength the falling water has for pushing the turbines, he said. It's hard to place a value on the electricity generated by the power plant, because both the production and electric rates are in constant flux, according to Grandi. It generates between \$350,000 and \$700,000 worth of electricity annually, he said. Electricity on the open market was at about \$25 per megawatt hour on Friday. Ukiah's power, because it's considered "green," would sell for closer to \$35 per megawatt hour, he said. The hydroelectric plant was initially built with a \$23 million bond almost 30 years ago. But a series of problems, along with outdated technology, kept it from being fully operational for about half of its first 20 years. It's since been largely rebuilt and has been running steadily, if not full force, since 2007. "It's a wonderful resource," Grandi said.

(Needs the money for more profitable businesses.)

TransCanada to Sell Dams on Connecticut River

By Nora Doyle-Burr, Valley News Staff Writer, March 27, 2016, vnews.com

West Lebanon — As part of its effort to finance a new Houston-based natural gas acquisition, Trans Canada Hydro Northeast is looking to sell its New England power generation business, including its hydroelectric dams on the Connecticut River. At stake are not only some of the most lucrative assets on the river, but control of a critical natural resource in the Twin States. The Wilder, Bellows Falls and Vernon, Vt. dams are among the assets Trans Canada plans to sell.



The Wilder Dam, built in 1950, was purchased by TransCanada in 2005 with 12 others on the Connecticut and Deerfield Rivers from the bankrupt USGen New England for \$505 million.

“The Wilder Dam backs up water all the way almost to Woodsville. It almost defines the Upper Valley,” said W.D. Wetherell, a Lyme resident who writes frequently about the Connecticut River. “It’s not a trivial thing who owns that dam and how they operate.” The dam’s owner, under a federal license, is responsible for raising and lowering water levels for energy production and to accommodate other uses of the river including recreation and wildlife habitat. Wetherell, a fisherman, pointed out that the company which owns the dams is responsible for alerting people who use the river when water levels rise. **“It can come up fast,” Wetherell said.**

(Why not?)

Vermont considers buying Connecticut River hydro dams

By HOWARD WEISS-TISMAN, Vermont Public Radio, March 29, 2016, recorder.com

International energy giant TransCanada says it wants to sell its series of power dams on the Connecticut River. **And at least one Vermont lawmaker thinks the state should consider purchasing the power generating hydro system.** The hydro system includes dams in Wilder, Bellows Falls and Vernon, Vt. The last time the dams changed hands the state of Vermont considered purchasing the renewable energy source. The previous owner of the almost 500-megawatt hydro system was USGen New England, which filed for bankruptcy protection in 2003.



The state created the Vermont Hydroelectric Authority at the time to take a look at the dams, but in the end, Vermont was outbid by TransCanada. Now TransCanada says it wants to sell its Connecticut River hydro assets. Rep. David Deen, D-Putney, says he’s going to talk to his fellow lawmakers about the pending sale. “I think the state ought to buy them,” Deen says. “I mean this is the largest hydroelectric facility in New England. So, yeah, I think it’d be a good idea, but that’s me.” Deen is chairman of the Fish, Wildlife and Water Resources Committee, and he’s also the Upper Valley River Steward for the Connecticut River Watershed Council. **The hydro system includes miles of protected wildlife resources, which the owner of the hydro system manages.** Deen says he was surprised at TransCanada’s announcement. And a state acquisition might be a long shot because Deen says there could be buyer already lined up. “I have no idea what the timing on this sale is,” says Deen. “These things could sell tomorrow. I’m certainly going to talk to my fellow House members about it. And actually, we already have. Everybody remembers that we came close to buying these dams last time they were on the market.”

TransCanada announced just this month that it wanted to buy 15,000 miles of natural gas pipeline for about \$10 billion, and the deal is being partly financed through the sales of its northeast power assets. The company is also currently in the middle of relicensing the dams with the Federal Energy Regulatory Commission. Deen says the relicensing will proceed despite of the pending sale. *EDITOR’S NOTE: Proposed sale of TransCanada’s hydroelectric plants along the Connecticut River in Vermont and the pending sale to Canada’s Public Sector Pension Investment Board of FirstLight’s Massachusetts hydroelectricity facilities along the river in Massachusetts — including the Turners Falls, Cabot Station and Northfield Mountain projects — comes as they are in the midst of relicensing by the Federal Energy Regulatory Commission.*

(If anybody can do it, they can.)

Hydroelectric Project Moves Closer To Reality On Crow Reservation

By JACKIE YAMANAKA - YELLOWSTONE PUBLIC RADIO • 3/30/16, mtpr.org

The Crow Tribe moved another step closer to developing its water resources. This includes a proposed hydroelectric dam project.

"For well over 50 years the Yellowtail Dam and the storage behind the dam has been a symbol of our wealth being held back."

"Today we see this as a way forward where we begin to recognize and begin to see the economic impacts of the dam and the storage allocation with the proposed hydroelectric dam that we're going to be pursuing here in the near future."



Crow Tribal Chairman Darrin Old Coyote (R) and U.S. Bureau of Reclamation Great Plains Director Mike Ryan sign a Storage Allocation Agreement at the Bureau's office in Billings. The agreement defines the terms and conditions for the Crow Tribe to use their stored water from Bighorn Lake. Crow Tribal Chairman Darrin Old Coyote (R) and U.S. Bureau of Reclamation Great Plains Director Mike Ryan sign a Storage Allocation Agreement at the Bureau's office in Billings. The agreement defines the terms and conditions for the Crow Tribe to use their stored water from Bighorn Lake. Old Coyote and Mike Ryan, the great plains regional director for the U.S. Bureau of Reclamation, signed the Storage Allocation Agreement at the Bureau's office in Billings. It defines the terms and conditions for the tribe to use their stored water from Bighorn Lake.

"It provides up to 300,000 acre feet of water for their use and enjoyment," Ryan says. "For folks who are involved in water resource management 300,000 acre feet is a lot of water." This agreement stems from the Crow Tribe Water Rights Settlement Act of 2010. It quantifies the Tribe's water rights after decades of litigation and negotiation. It also authorizes funding for the Crow Irrigation Project and for construction of a Municipal, Rural and Industrial (MR&I) water system for the Tribe. Old Coyote looks forward to engineering design phase and eventually construction of a hydroelectric power plant at Yellowtail's Afterbay Dam. "Now we have that opportunity and the capability of not only producing hydro, but also utilizing downstream industrial use. And water probably becoming a number one commodity here in the future it's going to be very beneficial to the Crow people to utilize this water," Old Coyote says. The Crow Tribe has said it would like to have an 8 to 12 megawatt hydroelectric project operating by 2018.



Environment:

(Good luck. \$20,000 is a drop in the bucket.)

Bureau of Reclamation Launches Two Prize Competitions to Solve Issues About Downstream Fish Passage and Detecting Soil Movement within Earthen Dams, Canals and Levees

Up to \$20,000 Awarded to Winners of Each Competition for New Ideas and Better Methods to Address These Issues

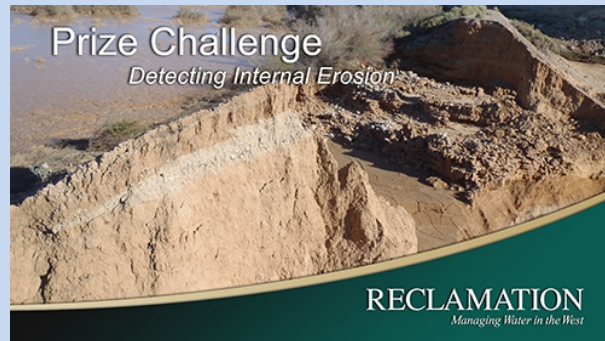
Media Contact: Peter Soeth, 303-445-3615, For Release: March 31, 2016, usbr.gov

WASHINGTON - The Bureau of Reclamation has launched two prize competitions to seek new ideas and better methods for fish to move downstream past large dams and to detect the movement of soils within earthen dams, canals and levees. Through these prize competitions,

Reclamation and its partners are seeking solutions from beyond the usual sources of experts that work in these fields. **These competitions are open through May 10, 2016.**

The Downstream Fish Passage at Tall Dams' prize competition was developed to help migrating juvenile fish over or around tall dams. Moving migrating juvenile fish past tall dams will ensure habitat connectivity that many threatened and endangered fish populations need to survive and reproduce. Reclamation and its federal, state and local partners responsible for recovering threatened and endangered fish recovery will benefit from new and better methods of providing fish passage at these large dams. It will also help Reclamation meet the National Marine Fisheries Service's biological opinions, such as the 2009 biological opinion for passage of Sacramento winter-run and spring-run Chinook salmon and for Central Valley steelhead upstream of Shasta, New Melones and Folsom dams.

Reclamation is collaborating with the U.S. Geological Survey, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Army Corps of Engineers and the California Department of Water Resources on this prize competition. The winners of this prize competition will share \$20,000.



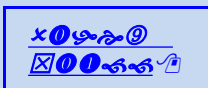
One of the prize competitions launched, detection of internal erosion.

The Detection of Movement of Soils Within Earthen Dams, Canals and Levees prize competition seeks to detect the movement of material earlier than observable by currently used visual inspection and instrumentation methods. This can help prevent the loss of life, property and interruption of the service the infrastructure provides. Water storage behind earthen dams, the movement of water through canals and flood protection provided by levees support the quality of life of people around the globe. The early stages of soil moving in an earthen structure, also known as internal erosion, is largely invisible. Current methods cannot provide early detection of this damaging process. **Reclamation is collaborating with the U.S. Army Corps of Engineers and the State of Colorado Dam Safety Program on this prize competition. The winners of this prize competition will share \$20,000.** To register and learn more about these new prize competitions, go to www.challenges.gov. To learn more about Reclamation's Water Prize Competition Center, please visit www.usbr.gov/research/challenges/.

Recently, Challenge.gov celebrated its fifth anniversary. Challenge.gov is a historic effort by the federal government to collaborate with members of the public through incentive prizes to address our most pressing local, national, and global challenges. True to the spirit of President Obama's charge from his first day in office, federal agencies have collaborated with more than 200,000 citizen solvers—entrepreneurs, citizen scientists, students, and more—in more than 440 challenges, on topics ranging from accelerating the deployment of solar energy, to combating breast cancer, to increasing resilience after Hurricane Sandy.

###

Reclamation is the largest wholesale water supplier and the second largest producer of hydroelectric power in the United States, with operations and facilities in the 17 Western States. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits. Visit our website at www.usbr.gov and follow us on Twitter @USBR.



Other Stuff:

(It's still not enough. Wonder what it is if you include large hydro?)

Sharp rise in renewable energy generation

The Nation March 28, 2016, nationmultimedia.com

RENEWABLE energy, excluding large-sized hydropower projects, accounted for 134 gigawatts of the 253GW of additional electricity capacity generated globally in 2015 - one of several important firsts for green energy announced in a new UN-backed report. That compares with 106GW in 2014 and 87GW in 2013. The report "Global Trends in Renewable Energy Investment 2016" showed that coal and gas-fired electricity generation last year drew less than half the record investment made in solar, wind and other renewables (including biofuels, geothermal, marine and small hydro) capacity. The 10th edition of the UN Environment Programme's annual publication also showed that the annual global investment in new renewables capacity, at US\$266 billion (Bt9.3 trillion), was more than double the estimated \$130 billion invested in coal and gas power stations in 2015.



All investments in renewables, including early-stage technology and research and development as well as spending on new capacity, totaled \$286 billion in 2015, some 3 per cent higher than the previous record in 2011. Since 2004, the world has invested \$2.3 trillion in renewable energy (unadjusted for inflation). Developing world investments in renewables topped those of developed nations for the first time in 2015, led by China and India. Investments by the developing world totaled \$156 billion, against \$130 billion by developed countries. Were it not for renewables, excluding large hydro, annual global CO2 emissions would have been an estimated 1.5 gigatonnes higher in 2015.

Despite increasing investment, renewables still accounted for only 16.2 per cent of the world's total installed power capacity last year, against 15.2 per cent in 2014. "Despite the ambitious signals from COP21 in Paris and the growing capacity of new installed renewable energy, there is still a long way to go," said Prof Udo Steffens, president of the Frankfurt School of Finance and Management, which co-produced the report. "Coal-fired power stations and other conventional power plants have long lifetimes. Without further policy interventions, climate-altering emissions of carbon dioxide will increase for at least another decade." The recent big fall in coal, oil and gas prices makes conventional electricity generation more attractive, Steffens added. "However, the commitments made by all nations at the Paris climate summit in December, echoing statements from last year's G7 summit, require a very low- or no-carbon electricity system."

(Not everyone likes wind projects,)

MAILBAG: Big losses, marginal gains involved in Apex proposal

3/29/16, lockportjournal.com

The APEX wind farm project should not proceed. Without tax and ratepayer subsidies APEX would never come to New York. The wind farm will obliterate property values and lower assessments over a minimum area of 12 miles-by-3 miles or 36 square miles. Wind is a highly variable generation resource and cannot be relied upon to be available to meet the long-term needs of the New York Independent System Operator (NYISO). New York nuclear plants run above 90 percent availability; the NYPA Niagara Hydropower Project has a "plant availability factor" of 87.4 percent. Reliability and availability are essential factors in power generation. APEX's proposed 201 mw farm is mostly offline 75 percent of the time, rendering maybe 50 mw. Fifty megawatts is a meaningless, insulting addition to New York's existing 38,000 mw plant

facilities. Wind cannot be stored; one must "use it or lose it." Niagara Hydropower has a huge water storage reservoir for peak demands.

Also, Niagara Hydropower occupies a mere 3.6 square miles, generating a "net dependable capacity" of 2,680 mw. That amount of power spread over 3.6 square miles makes sense. Fifty megawatts spread over 36 square miles is nonsense. Put another way, it would take wind about 1,900 square miles to generate 2,680 mw. You



would have the wind farm laid out in an area 44-miles-by-44-miles. Niagara Hydropower, with the Power Vista, is a tourist attraction, while the APEX wind farm would be an eyesore forever, and drive people away. In summary, the APEX smart people seek to lay waste to 36 square miles of precious land for a very undependable 50 mw while next door we have an underutilized but very dependable 2,680 mw hydroelectric power plant taking up only 3.6 square miles of land. Low-cost hydropower drives businesses, while high-cost, unreliable windpower hurts residential and business customers alike. One wonders, where do they find these smart people, and why wasn't this pipe dream dead on arrival? Common sense should prevail. APEX should pack up and leave. Gregory G. WoodrichWilliamsville

(Hate them.)

10 Worst US Cities for Mosquitoes

Let's just throw a mosquito net over the entire Southeast

By Michael Harthorne, Newser Staff, Mar 30, 2016, newser.com

Don't like mosquitos? Stay out of Atlanta. (AP Photo/Felipe Dana, File)(NEWSEr) – With the Zika virus making headlines around the world and peak mosquito season only a few months away, USA Today reports on the 20 US cities where you might as well wear a mosquito net when you go outside. The rankings of the worst US cities for mosquitos comes from pest control company Orkin, which based them on how many residents sought its mosquito-related services. Here are the top 10:



Don't like mosquitos? Stay out of Atlanta. (AP Photo/Felipe Dana, File)

1. Atlanta (topping the list for the third year in a row)
2. Chicago
3. Washington DC
4. Detroit
5. New York
6. Dallas-Ft. Worth
7. Nashville
8. Charlotte
9. Raleigh-Durham
10. Boston

See the full rankings here.



ⁱThis compilation of articles and other information is provided at no cost for those interested in hydropower, dams, and water resources issues and development, and should not be used for any commercial or other purpose. Any copyrighted material herein is distributed without profit or payment from those who have an interest in receiving this information for non-profit and educational purposes only.