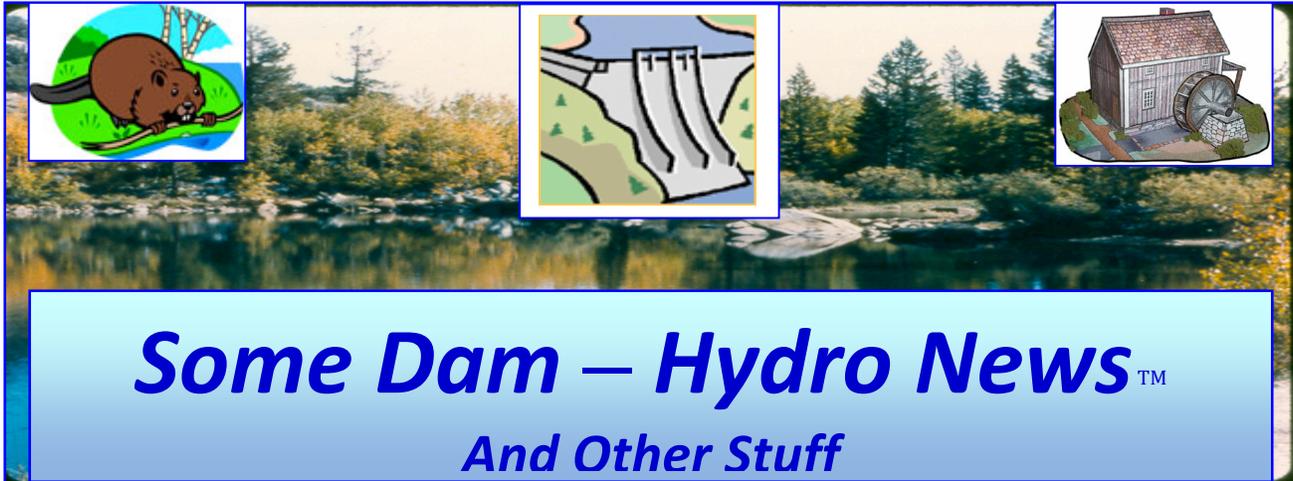


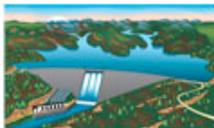
2/8/2019



Quote of Note: *“Talk is cheap...except when Congress does it.” - Unknown*

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: 2015 Ferrari Carano Cabernet Sauvignon "Alexander Valley"
“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson



Dams:

(Moving right along.)

Dam Project update

By Kern Valley Sun / January 8, 2019, kernvalleysun.com

PRESS RELEASE

Advisory

• The Phase II Dams and Spillways contractor (Flatiron/Dragados/Sukut Joint Venture, or FDS) continues construction activities. As a result, the site, including Engineers Point, is an active construction area and is off limits to the public to ensure safety.



Isabella Dam

Looking Ahead (Next 30+ days)

- Reservoir pool levels were lowered to approximately 72,000 acre-feet (2,543 feet elevation) on October 1, 2018, to seal the Borel Canal conduit. USACE is finalizing the required low-water work this month and once completed will remove the water control deviation, allowing lake water management to return to the interim risk reduction restriction of 361,250 acre-feet.
- Construction on SR155 near the Main Dam will continue throughout 2019. The contractor is currently constructing the embankment for the SR155 detour. Traffic is expected to be moved to the detour in spring 2019, which will create delays. USACE will provide updates on expected impacts via public outreach, the monthly SITREP, and the Isabella Task Force.
- FDS has completed five blasts on the emergency spillway so far and will continue blasting through all of 2019 and into 2020. SR 155 will be temporarily closed during blasting operations.
- Work on the Old Isabella, South Fork, and Auxiliary Dam recreation areas will commence in January 2019. This work is limited to Monday through Thursday 7 a.m. to 7 p.m. and is required to be complete by Memorial Day weekend. While the recreation areas will remain open during construction, some areas within those sites will be off limits to ensure public safety. All facilities, however, will have replacements ready prior to demolishing the existing features.
- USACE continues working on the French Gulch boat launch extension. Work is expected to be complete in mid-January.

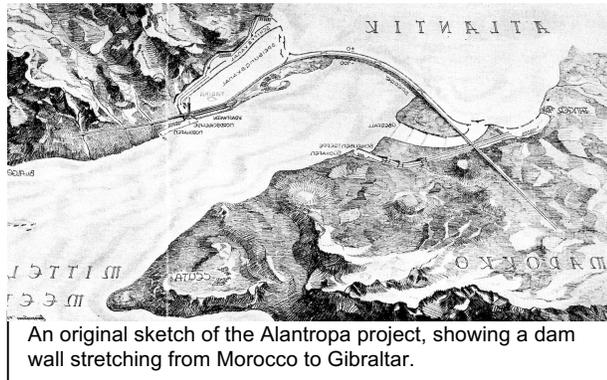
(This week's history lesson. In case you wandered, one meter = 3.28 feet)

Science History: the man who dreamed dam big

Herman Sorgel wanted to dam the Mediterranean, and lots of people thought it was a good idea

BY Jeff Glorfeld, cosmosmagazine.com, Jan. 14, 2019

WIKIMEDIA COMMONS - The building of dams is a polarising subject, yet there is little doubt that once built, many of them are among the most stunning of human-made structures. When it comes to ranking the biggest dams, it depends on whether we are looking for the tallest, the longest, or perhaps the one comprising the most material. According to the United States Bureau of Reclamation, a federal government agency that oversees water resource management, the world's largest dam by volume of construction material is the Syncrude tailings dam, in Canada, at 540 million cubic metres. By comparison, the bureau notes, Hoover Dam, a visually stunning structure on the Colorado River on the border between the states of Nevada and Arizona, contains a mere 2.6 million cubic metres of concrete. But what about a dam that was meticulously planned but never built, a dam so big that at the time it was proposed, some experts doubted there was enough concrete in the world to construct it? Herman Sorgel, a German architect from Bavaria, was born on 2 April 1885. Beginning in 1927, he stood among the ruins – both physical and political – left behind after the First World War and envisioned a project that would bring prosperity and peace to Europe. Indeed, he felt, it would change the face of the world.



An original sketch of the Alantropa project, showing a dam wall stretching from Morocco to Gibraltar.

Sorgel called his project Alantropa, and its linchpin was the construction of a dam at the Strait of Gibraltar that would separate the Atlantic Ocean from the Mediterranean Sea, along with dams from Italy to Sicily and on to Africa, north of Tunisia, dividing the sea into two basins. There would also be a dam across the Strait of the Dardanelles, holding back the Black Sea. From the US, a 2011 master's thesis by University of Tennessee student Ryan Linger says Sorgel planned the Gibraltar dam to be "a slightly asymmetrical arch of around 35 kilometres between two offset points near the Bay of Tangier and the Cabezos Reefs". It would stand 300 metres high, which

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Linger notes was more than 200 metres taller than any dam then in existence. “Sorgel estimated that the dam would comprise some 10 billion cubic metres of material,” he notes. Sorgel calculated that cutting off the Mediterranean would cause the sea to lower by 100 metres in the Gibraltar basin, and by 200 metres at the Sicily basin, creating the opportunity to generate massive amounts of hydro-electric power. The lowering of sea levels would also create almost 600 square kilometres of new dry land for development, and link together the European and African continents.

Although the project didn't go beyond the drawing board, it was taken seriously, as can be seen in the extensive Atlantropa archive in the Deutsche Museum in Munich, which contains architectural drawings for new cities, the dams and bridges, plus letters of support and hundreds of articles about the project, which appeared in the popular press and in specialised engineering and geographical magazines. Herman Sorgel died on 25 December 1952. He was reportedly hit by a car while riding his bicycle, on a road “as straight as a die”, suggesting that he could have been murdered. The driver of the car was never found”.

(Don't know when, but another hurricane is coming.)

Feds rush Whittier Narrows Dam fix to prevent breach that would flood 1M residents from Pico Rivera to Long Beach

Work on dam gates underway

By STEVE SCAUZILLO , San Gabriel Valley Tribune, ocregister.com, January 17, 2019

Because of the potential of massive flooding, the Army Corps of Engineers is rushing to begin a \$500-million repair project for Whittier Narrows Dam, CA classified as the highest priority of any of the 13 “high risk” dams in the country. Nearly three years ago, the Army Corps of Engineers elevated the risk of failure from “high urgency” to “very high urgency” after a re-inspection revealed a greater threat of erosion and breach that would cause massive downstream flooding to one million Southern California residents in the event of a severe storm event. Inspectors also were alerted to the increased likelihood of spillway gates opening by themselves without prompting. The possibility of an accidental release caused the Corps to order emergency repair work on gates and locks that began last year and is expected to be completed by the end of this year, said George Sunny, project manager, during a public meeting Wednesday in Alhambra.



High priority

Sunny said the Whittier Narrows Dam project is the only one of the 13 not yet designed nor shovel ready, putting it far behind schedule. “The Whittier Narrows Dam’s rating of ‘urgent and compelling’ means it is the first one eligible for funding of the 13, yet this one is not yet in design,” he said. The Army Corps held two meetings: in Pico Rivera Saturday and Wednesday at the Los Angeles County Department of Public Works headquarters to gather public input. The final Environmental Impact Statement is expected to be released in May, with a Record of Decision published in June. This would complete the environmental review and allow for the project design, he said, with construction starting in 2021. Completion is expected in 2025. The Army Corps is not affected by the partial government shutdown since they are under the Department of Defense, which was funded back in September, said Dena O’Dell, deputy chief of public affairs.

Severe storms

The most severe flooding would occur during a 1 in 10,000-year storm, said Col. Aaron Barta, commander of the Los Angeles District. However, erosion is already occurring, weakening the 62-year-old dam, he said. Some improvements are needed to prevent further malfunctions and possible seepage during lesser events, such as a 100-year storm, Sunny said. “The communities

along these rivers are at risk because of these large flows that happen during rare (storm) events,” Sunny said. If a storm were to bring the reservoir to its capacity, then the water would overflow the concrete spillway and send up to 276,000 cubic feet per second of water downstream, overflowing the San Gabriel and Rio Hondo river banks and affecting the communities of: Artesia, Bell Gardens, Bellflower, Carson, Cerritos, Commerce, Compton, Cypress, Downey, Hawaiian Gardens, La Palma, Lakewood, Long Beach, Lynwood, Montebello, Norwalk, Paramount, Pico Rivera, Rossmoor, Santa Fe Springs, Seal Beach, South Gate and Whittier. **This amount of water is equal to emptying three Olympic-sized swimming pools every second, Sunny said.**

Fix-it plan

Measures outlined by Corps engineers in their preferred design plan, which they say would be cheaper and cause less environmental damage than the alternatives, include the following:

- To address internal erosion of the foundation, the Corps would build a trench drain along 80 percent of the dam’s length with a permeable bottom consisting of sand and gravel. Without this, seepage could lead to a breach of the dam, Sunny explained.
- To prevent overflowing the top of the dam, a new compacted concrete filler would be built along the downstream slope and 5-foot walls would be added to Lincoln Road. The road would also be raised 5 feet.
- Three cement batch plants would be situated south of Durfee Avenue. The Corps must avoid damaging the habitat of two endangered birds, the least bell’s vireo and the California gnatcatcher, Sunny said.
- Community impacts could include blocking off parts of the Pico Rivera Golf Course and removing a portion of Sports Arena Drive, which provides entrance to the stadium for concerts and other events.

Candice Camacho, Montebello resident, boards her three horses at the nearby Whittier Narrows Equestrian Center. If Sports Arena Road is overtaken by dam improvements, that would leave only Rooks Road by the stables as the entrance to the arena, a popular concert venue. **“If they cut that off, all that traffic would be filtered to our stables,” she said.** All comments about the Draft Environmental Impact Statement (EIS) must be received by Jan. 31 by email to: Deborah.L.Lamb@usace.army.mil or Douglas.E.Chitwood@usace.army.mil. The latest storm, Hurricane Florence in 2018, flooded much of eastern South Carolina, putting parts of Conway and some Pee Dee communities under water. **About a dozen dams failed during Florence, including one that flooded U.S. 501 in eastern South Carolina. Congaree Riverkeeper Bill Stangler said nobody wants to face the hazards of failing dams, referring to the historic 2015 flood that caused about 50 S.C. dams to collapse.** Among the areas affected by failing dams was Columbia’s heavily populated Gills Creek watershed. Stangler and state Sen. Paul Campbell, R-Berkeley, engaged in a brief, tense discussion about the proposed legislation after Wednesday’s meeting.

After legislators failed to tighten the dam-safety law last year, they promised to discuss any new legislation with various interest groups before it was introduced this year, Stangler said.

“You did this in coordination with the Farm Bureau, rather than the stakeholder group that we were told we could have,” Stangler told Campbell. Stangler and Jobsis were particularly critical of a section of the proposed law that would exempt from state oversight some dams, used in farming, that pose significant hazards. Failure of those dams could damage property downstream. **Senate subcommittee members, however, said the bills need to be considered.** The proposal focuses on removing lower hazard dams from state oversight so the state Department of Health and Environmental Control can focus on the dangers posed by high-hazard dams, said Sen. Campbell, a sponsor of the legislation. High-hazard dams — those where a breach could result in deaths — would remain under state regulation, according to plans. “What we’re trying to do is get DHEC to concentrate on the high-hazard dams,” Campbell said. “They’ve got 400 of those dams left to work on. (Trying) to work on 2,000 dams makes it very difficult.”

Campbell and state Sen. Stephen Goldfinch, R-Georgetown, voted for the legislation. State Sen. Vincent Sheheen, D-Kershaw, expressed concerns about the proposal but left the meeting before

the vote. The bill now goes to the full Senate Agriculture Committee for consideration. The Farm Bureau, one of the most powerful special interest groups in South Carolina, has expressed concern that tightening the state's dam-safety law would hurt farmers who depend on rural ponds that don't threaten property downstream. It also has concerns about dams that, while originally built in rural areas, now are upstream from developed neighborhoods. **The Farm Bureau spent \$143,563 to lobby the Legislature in 2017, the most recent year available.** Cassidy Evans, one of the Farm Bureau's lobbyists, said the bill looks "specifically at how to help our dam owners." **The panel's move to loosen dam regulation came on the same day that it voted for a plan to buy out homeowners whose property is at high risk of flooding.** The plan would establish a loan program so that local and state governments, as well as nonprofit groups, could buy flood-prone homes and remove them. The land on which the homes sat would remain vacant.

(But, dam removal keeps going. Don't worry, dam removal always gets the money)

City of Missoula, Trout Unlimited move forward with Rattlesnake Dam removal

BY LAURA LUNDQUIST, JANUARY 16, 2019, missoulacurrent.com

Missoula is preparing to move forward with Trout Unlimited to remove an obsolete dam from Rattlesnake Creek. On Wednesday, the City Council's Parks and Conservation Committee voted unanimously to forward to the full council an updated agreement with the conservation group. The new memorandum changes little of the original agreement, signed about 18 months ago, except to define some decision-makers and decision points as Trout Unlimited works with the city to remove the dam and restore Rattlesnake Creek. **"We want**



to make sure that we've got funding to get us all the way through, and we also don't want to have lapses where we start moving through deconstruction or something, and then the site sits largely untouched for a period of time," said city conservation lands manager Morgan Valliant. "This is going to be run very much as any other city project would be done. We're just having TU take the lead in the field to expedite implementation." Valliant said much of the site assessment and preliminary design work has been completed, so he's starting to develop the site's recreation plan. The 45-acre site will be designated as a parks reserve, an area set aside for "nature first," and will be folded into a larger rebuild along the creek's greenbelt.

Currently, the site is home to a 120-year-old dam that once provided the city's water. When Missoula converted to groundwater in 1983, the dam was taken offline. The headgates were removed in 2012, so the structure no longer can store water or generate power, but it still affects migration of native trout. Also, the concrete has continued to deteriorate and now poses a safety hazard. In May, Trout Unlimited and the city offered Missoulians four alternative visions for how the creek should turn out. "The public overwhelmingly felt alternative 3, a full-scale restoration, would be the most beneficial for the site," said Trout Unlimited project manager Rob Roberts. Roberts said engineers are halfway through refining the design, but the plan is to get permits and for bids to go out this summer so the dam can be removed in summer 2020. **Roberts estimated the total cost at between \$1 million and \$1.8 million,** depending on the final design, who bids on the project or what unforeseen problems arise. Specifically, demolition would cost between \$450,000 and \$800,000 although it could potentially reach \$1 million. Restoration would run between \$350,000 and \$500,000 although it could go as high as \$800,000. So far, about \$200,000 has been spent on planning. Roberts said there's still not enough funding, but grants and donations are starting to add up. The project already has \$624,000 in committed funds, including \$140,000 from the Hewlett Foundation Open Rivers Fund and \$25,000 each from NorthWestern Energy and Missoula Water. Another \$800,000 is projected to come in, including \$400,000 from the Federal Emergency Management Agency, \$200,000 from the U.S. Fish and

Wildlife Service and \$125,000 from the Montana Department of Natural Resource and Conservation. "None of that includes grant proposals that we haven't submitted yet," Roberts said.

(Dam removal. Where are we going?)

Removing old dams in Mass. even more urgent with stress of climate change

By: Bob Dumas , Jason Brewer, Jan 17, 2019, .boston25news

PLYMOUTH, Mass. - More than 3,000 dams -- many of them hundreds of years old -- are still in existence all over Massachusetts. They're often outdated and unsafe, and the state is in the process of removing many of them. Climate change is making the need to get rid of them more urgent. One of the largest projects right now is the removal of the Holmes Dam and Newfield Street Bridge in Plymouth.



"It's one of the of the biggest projects that our division has ever assisted on," said Nick Wildman, a restoration specialist with the state's Division of Ecological Restoration. "It's about a \$6.7 million implementation to remove what was a high hazard dam." This multi-year project, which should be completed by this summer, will allow Town Brook to flow freely back into the Atlantic Ocean. "Most of the dams in Massachusetts date back either to the Colonial times or the Industrial Revolution when they were initially built to provide energy to grist mills," explained Wildman. Many of the dams around the state are obsolete and haven't been maintained properly. That can create a real threat, like when the Whittenton Pond Dam in Taunton came close to failing in 2005 and forced wide-scale evacuations. David Gould, the environmental officer for the town of Plymouth, is happy to see the Holmes Dam come down. "When people think of dams, there is a potential damage with the water being released," he said. "A lot of those older dams also have a tremendous amount of sediment behind which would be released downstream which would smother habitat." It's not just the fears of rushing waters and mudslides that motivated the Baker Administration. There is also concern about how climate change is impacting these dams.

>> Hundreds of Mass. towns need a plan for climate change, Baker says "As we have seen larger storm events from climate change, this aging infrastructure is really under threat for failure and other maintenance problems," Wildman added. Allowing rivers to run free can also provide another type of protection against rising oceans. "They also move a lot of sand and sediment," said Wildman, "and over time, as that moves out to the ocean, it builds up our marshes and barrier islands which are under threat from the changing conditions of the sea." Other species can reap benefits when old dams are removed. Herring is able to spawn farther upstream and then return to the ocean in greater numbers. The result: more food for sea bass, tuna and cod. This is one of the reasons the Elm Street Dam in Kingston is now in line for removal. Some dams near the coast can make flooding worse during storms. As tidal waters rush in, they can't go upstream when they hit the dam, threatening homes and property in the area. "Dam removal is an integral part of climate change resiliency," said Wildman. About 40 dams have been taken down over the past dozen or so years.

(Here's a dreamer.)

Governor Justice pushes lake development idea: 'The only thing we don't have is an ocean'

By JEFF MORRIS, January 14th 2019, /wvah.com

CHARLESTON, W.Va. (WCHS/WVAH) — West Virginia Gov. Jim Justice floated the idea of developing more lakes in West Virginia to make up for what the state doesn't have – an ocean. But just how many lakes are in the Mountain State now? "We need the ability to develop those

lakes,” Justice said during his State of the State address Wednesday in Charleston.

“Do you know if you step back to think about it, four of the most beautiful seasons in the world, the most incredible people on the planet, the most unbelievable natural resources, and we’re located within 600 miles of two-thirds of the people in the country. The only thing we don’t have is an ocean.” Justice did not identify any specific lake projects, but he mentioned the idea as he was talking about how important tourism is to the state's economy. He said the state needs to develop multiple lakes that would provide hydroelectric power, “which maybe we don’t need, but at the same time, they can give us flood control.”



Governor Mentions Lake Idea

The U.S. Army Corps of Engineers Huntington District lists seven West Virginia lakes and reservoirs on its website – Beech Fork Lake in Wayne County; Bluestone Lake in Summers County; Burnsville Lake in Braxton County; East Lynn Lake in Wayne County; R.D. Bailey Lake in Mingo County; Summersville Lake in Nicholas County; and Sutton Lake in Braxton County.

Meanwhile, the West Virginia Division of Tourism lists on its website the top seven lakes in the state for summer fun – Summersville Lake, the largest lake in the state with 28,000 acres of water and 60 miles of shoreline; Cheat Lake, just east of Morgantown; Stonewall Jackson Lake in Lewis County; Lake Sherwood in the Monongahela National Forest; Sleepy Creek Lake in Berkeley County; East Lynn Lake in Wayne County; and ACE Lake, the water park at ACE Adventure Resort in the New River Gorge area.

The West Virginia Division of Natural Resources, however, lists a county-by-county breakdown with more than 100 bodies of water under the lake category on its website. The list covers what appears to be a very broad category of public fishing access sites, however, that range from the Coonskin Park Lake to the massive Summersville Lake. Merriam-Webster dictionary defines lake as “a considerable inland body of standing water.” No matter how you define it, however, West Virginia’s governor believes there is a need for large-scale projects. He said Austin Caperton, who heads the state’s Department of Environmental Protection, will lead the charge for the development of projects. “Our state needs more developable lakes. It is a project that you may think is a pipe dream, but I am telling you, without any doubt, there is an infrastructure program about to be announced by our president, and we need to be at the line waiting,” Justice said.



Hydro:

(Agree! Wind and solar can’t do all of it.)

Why America should double down on hydropower

By Ryan Cooper, January 22, 2019, theweek.com

Solar and wind power are advancing fast — but it may come as a surprise that they’re still not the largest source of renewable energy in the U.S. That title is still held by hydropower, which is nearly as big as solar and wind put together. That raises a natural question: Would it be worth pursuing more hydro power?



Climate change is a gigantic problem, and as such all possible methods of reducing carbon dioxide emissions deserve full consideration. And hydropower — that is, power generated from water flowing downhill — has a lot more potential than one might suppose.

Now, the history of American hydropower is extremely checkered, as Marc Reisner detailed in his classic book *Cadillac Desert*. Water projects were for decades a major avenue of pork-barrel politics, and a great many preposterously uneconomical projects were built — and for my money the Glen Canyon Dam was one of the greatest crimes against nature in world history. However, we have to be realistic about our dire situation. There are no perfect solutions to climate change — even solar and wind power take up land, potentially quite a lot. And when it comes to concrete environmental effects, as a report prepared for Hydro-Québec details, hydropower is far superior to coal or natural gas power. It may cause local problems in the form of drowned river valleys and so on, but no particulate pollution like coal (which kills an estimated 1.6 million people per year in China alone), no carbon or methane emissions from daily production like natural gas, and has no need for long-term hazardous waste storage like nuclear. So what are the possibilities? The biggest gimme is undoubtedly the approximately 80,000 extant U.S. water projects that have no hydroelectric capacity. Many of these are so small as to not be worth bothering with, but an Oak Ridge National Laboratory report estimated that if we rigged up the reasonably-sized ones with generators, we could get 12 gigawatts (or 45 terawatt-hours) of new capacity — equivalent to expanding the existing hydro fleet by 15 percent. Not bad! But what about new projects? A different Oak Ridge report estimated that the U.S. could build 84.7 gigawatts (or 480 terawatt-hours) of new capacity if we went all-out. Now, much of that would probably not be worth the ecological damage it would cause. But if even if we rule out national parks, wild and scenic rivers, and wilderness areas, the total potential only drops to 65.5 gigawatts (or 347 terawatt-hours). It's also worth noting that many of the projects considered here are run-of-the-river projects that don't require huge lakes.

Canada also has enormous untapped hydropower potential. It already gets about 62 percent of its electricity from hydro (or 404 out of 648 terawatt-hours) — but has reported potential for 2.1 times that much. That is important for three reasons: Canada is an even worse greenhouse gas emitter than the U.S. on a per-capita basis, its power grid segments are already heavily connected to American ones, and power exports might make up a great deal of the oil exports it sends to the U.S. (which are four times greater than those coming from Saudi Arabia, by the way).

So let's construct a napkin sketch of what could be done here with just these two countries. Adding together the U.S. potential from upgrades and non-scenic new projects gets us 392 terawatt-hours. If Canada maxed out its hydro capacity, that gives it about 850 terawatt-hours — and if we say it keeps its nuclear and other renewables (and accounting for existing power exports), that means 407 terawatt-hours available to be exported to the U.S. (Obviously these are all the roughest of estimates, but they are surely in the right ballpark.)

(They don't like it.)

Karl Meyer: Connecticut River dam owners pulling a fast one

By Commentary, Jan 28 2019 | vtdigger.org

Editor's note: This commentary is by Karl Meyer, who has been a stakeholder and member of the Fish and Aquatics Study Team in the current FERC relicensing process for the Northfield Mountain and Turners Falls projects in Massachusetts since 2012. He is a member of the Society of Environmental Journalists.

Opinion:

It shouldn't take a century and a half to get federal laws enforced. Yet New Englanders have been waiting nearly that long for their rights to the Connecticut River, guaranteed since 1872 under the landmark Supreme Court decision in *Holyoke Co. vs. Lyman*. Today this critical artery in Vermont, New Hampshire and northern Massachusetts remains essentially without

upstream and downstream fish passage protections at the Northfield Mountain Pumped Storage and Turners Falls projects in Massachusetts — protections required by law of owners of all federally licensed dams in the United States.

That ruling should have dramatically changed Connecticut River conditions beginning on April 30, 2018, when the current Federal Energy Regulatory Commission license for the Northfield Mountain Pumped Storage Station, which controls the Turners Falls Dam, expired. But a new one has yet to be signed and FERC has now extended the current license and operating conditions. Any new license held by a corporation, foreign or domestic, must include protections that comply with the Anadromous Fish Conservation Act, the Endangered Species Act, and the U.S. Fish and Wildlife Coordination Act, among others.



Yet in a surprise, and shockingly belated move on Dec. 20, Canada's FirstLight Hydro Generating Co. petitioned FERC for "expedited consideration" of a last minute request to transfer the licenses of its Northfield Mountain and Turners Falls Projects on the Connecticut into separate LLC holding companies — requesting that these just-minted corporations be substituted as the new license applicants. FirstLight is wholly owned under the Treasury Board of Canada as venture capital corporation Public Sector Pension Investments. FirstLight's hurried request reached FERC just a day before federal stakeholders including the USFWS and National Marine Fisheries Service — agencies with "conditioning authority" in the five-year relicensing process, were sidelined by the government shutdown. Thus, while critical agency representatives and stakeholders remain unable to intervene in that move by a FERC-mandated Feb. 8 comment deadline, FirstLight is pushing FERC for an expedited decision by no later than Feb. 28. Their December maneuver came nearly six years into an extended FERC hydro relicensing process throughout which owners requested both projects — operating on the Connecticut from the control room inside Northfield Mountain, be merged under a single new long-term license.

Their petition arrived just eight days after FirstLight registered them as new LLCs in Delaware. It also occurred eight months after Northfield's current, decades-old license expired and had to be extended by FERC. They want the monolithic FERC, "five-year" relicensing process reconfigured in this, the 12th hour — substituting two newly minted companies as license applicants, while for over half a decade, stakeholders have been working, meeting and negotiating with a single entity, FirstLight Hydro — working toward the company-requested, single license for their co-run, synchronized, generating operation along a 5-mile stretch of the river. Perhaps it's time to remind our Canadian neighbors that when they purchased some Massachusetts hardware and hydro assets at Northfield Mountain and Turners Falls nearly three years back, they did not purchase the Connecticut, New England's great river. They merely absorbed the rights to lease some of our river's water until the current federal license expired on April 30, 2018. After that, how much, how often, and at what cost they might continue to operate via a new leased portion of some of our river's flow would be up to the laws and regulations of the United States and those of the commonwealth of Massachusetts.

If accepted by FERC, PSP/FirstLight's surprise move would re-incorporate the Northfield Mountain facility as Northfield Mountain LLC, an "exempt wholesale generator," essentially burying the parent company's identity under the names and layers of more than a half dozen individual holding outfits. That new designation would shield the Canadian holding from record-keeping requirements and disclosure of financial information via FERC to the host of long-term relicensing stakeholders including federal agencies and town and county governments here. It is information about operations and profitability used by stakeholders to evaluate and gauge the

environmental impacts, relicensing requirements and ongoing tax revenues which are the responsibility of such long-term licensed projects.

The Connecticut is a critical, four-state ecosystem artery, governed by a host of statutes including protections under the “navigable waters of the United States.” It is the namesake and backbone of the Silvio O. Conte Connecticut River National Fish & Wildlife Refuge. The venture capital assets Canada purchased nearly three years back directly impact a half century old, four-state, federally sanctioned migratory fish restoration program. The 1967 Cooperative Fisheries Restoration Program for the Connecticut is focused on restoring federal trust American shad and blueback herring upstream to central New England waters. Further, any new license must comply with the 1998 Recovery Plan for the Shortnose sturgeon — listed as endangered since 1973, and starved of flows and access to its ancient spawning grounds on the river by FirstLight flood gate manipulations at Turners Falls. That dam is operated from 5 miles upstream inside the Northfield Mountain Pumped Storage Station to synchronize the company’s peaking river manipulations and flow diversions. It remains a key and critical Connecticut River restoration barrier. Federal, state and independent fisheries studies over the last decade indicate that these paired operations are scrambling a three-state portion of the ecosystem — preventing hundreds of thousands of migrating American shad from reaching beyond Turners Falls to open, interstate spawning habitats annually.

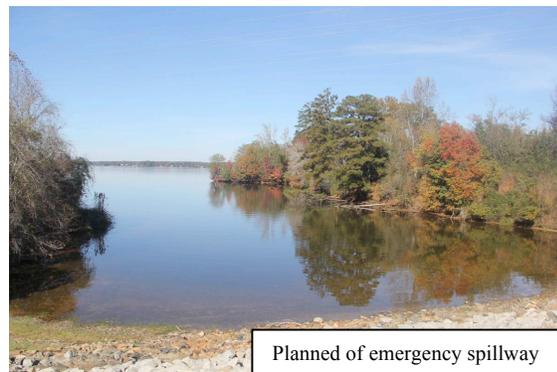
Northfield Mountain’s massive 15,000-cubic-feet-per-second suctioning of flows for diversion into its 5 billion gallon hilltop reservoir can actually pull the flow of the Connecticut River backward for a mile downstream. Visualize vacuuming in 15,000 milk crates per second, for hours at a time. It’s a process that virtually kills all aquatic life pulled into that suction cone. NMPS has inhaled fish of all species and sizes daily for nearly half a century. Results from a river sampling study, Juvenile Shad Assessment in the Connecticut River, were released last June by the U.S. Fish & Wildlife Service and Massachusetts Division of Fisheries & Wildlife. They estimate NMPS’s 2017 operations resulted in losses of some 15 million shad eggs and larvae, plus the deaths of between 1 million and 2.5 million juvenile shad. That’s for just one species. For two years running, FirstLight documents show it consumed one third more virgin power from the region’s grid than it later returned to the wires in peak-priced, secondhand bursts of electricity down through its reversing turbines. Northfield is only able to regenerate brief dense pulses of up to 1,100 megawatts back through its turbines for a maximum of 6-8 hours before it is virtually dead in the water. Then it must start sucking new, virgin juice from the grid, and water from the river, shredding yet new aquatic life as it sucks the Connecticut backward.

(Need more spillway capacity.)

New year brings sense of hope for county's dam project

By ADAM BENSON, indexjournal.com, Jan 15, 2019

With another round of federally mandated consultations upon them, county leaders say they remain hopeful that construction on a Lake Greenwood, SC flood relief structure years in the planning can begin soon. “We’re all optimistic. Even at best, it seems like it’s into next year that we’ll get approval, but we’re just hopeful,” Greenwood County Council chairman Steve Brown said. “We’re too far into this game to give up, we’ve spent too much to turn back now and we’ve got to see this to the end. We’re trying to be faithful to what we told the people.”



In early December, County Manager Toby Chappell and engineer Rob Russian spent two days meeting with a Board of Consultants and Federal Emergency Regulatory Commission

representatives to go over specs for a \$19 million auxiliary spillway that could intentionally be breached in the event of a catastrophic flood. "With all members in the room, there was a favorite option that the BOC has asked us to do some additional studies on prior to taking the next step on that, which would be 60 percent design," he said. Last January, the County Council learned FERC would not approve plans to build the spillway — known as a fuse plug — until local leaders either took part in the agency's Risk Informed Decision Making process or convened another consultants board to evaluate the proposal for a second time since March 2012. The money is already available, with \$21 million sitting in a bank account after voters in 2007 approved a local option sales tax to pay for that work and several other projects including the construction of a new library. As of June 30, the 2007 capital project sales tax fund has an available balance of \$21.2 million, according to the county treasurer's office. FERC mandated the spillway because diverting waters through the structure would not only protect the lake's earthen dam, but a 15-megawatt hydroelectric facility the county leases to Santee Cooper, less than a mile away.

David Capka, director of FERC's dam safety and inspections division, told the county on Jan. 9, 2018, that it would need to seat the board of consultants for a second time since 2012. That process initially took more than a year and cost \$150,000. In August, the council approved a \$329,100 transfer from the 2007 Capital Projects Sales Tax to fund a "hydro project" account to cover costs of the three-person Board of Consultants and pay Kleinschmidt Associates for engineering and support services. The board will meet five more times through design and post-construction.

Capka pointed to a February 2017 failure of the Oroville Dam spillway in Oroville, California as a basis for FERC's request. That incident led to the evacuation of 180,000 people living downstream of the Feather River and the relocation of a fish hatchery. Heavy rains increased lake levels until it overflowed, eroding the spillway and threatening its collapse. "The Oroville Dam incident has highlighted the importance of understanding the proper characterization of spillway type, the frequency and consequences of auxiliary spillway activation and proper characterization of foundation conditions," Capka wrote. "Auxiliary spillway activation at Buzzard's Roost would result in excessive erosion in the exit channel, washout of the downstream embankment, potential blockage of the tailrace and environmental impacts from the sediment release." In January 2017, Chappell said the use of such a spillway is extremely unlikely, though required by FERC. "We're not talking about a hurricane or the level of flooding we had back last October (of 2015). We're talking literally two hurricanes on top of each other on top of the lake," Chappell said then. "In all probability, we will never use this." FERC classified the possibility as a 10,000-year storm, meaning such an event would likely occur once every 10,000 years. Brown and Chappell lamented the time it has taken to secure approval for the project. "We're caught between a lot of people who haven't been very expeditious in their decision," Brown said. "If we had been able to do this at the very beginning, we would have been able to save possibly millions." Chappell said once the county gets authorization to move ahead with building the spillway, it may be possible to pursue other funding sources should the cost outstrip what's available.

"I think it's something we'd obviously want to consider, but that's not the problem we have right now. We don't have a funding problem today, we have a problem of getting the project approved and that's really where our focus is," he said. "Without being negative FERC, there's very little practical reality to this, because we're constantly monitoring the lake levels and if we know something is coming, we're going to drop the lake down. Could we ever use a fuse plug, and should we have a fuse plug? Of course. Should people think that we're going to be using this frequently? Absolutely not."

Here ya go!



<https://www.amazon.com/Whisker-Dam-Dark-Pouch/dp/B019DE8>



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