Dams:
(The toxic waste can be dangerous with unsafe dams.)

Duke working on Belews Creek dams
By Nicholas Elmes - thestokesnews.com, September 4th, 2015

Duke Energy is currently working on improvements to two dams at the Belews Creed Steam Station ash pond to address existing seeps and provide better structural support. Duke Energy spokesperson Zenica Chatman said the work began in July and will continue until the fall of 2016.

“One project relates to Pine Hall Road where we are going in and clearing out some vegetation and also going in and looking at pipe we grouted several years ago,” she said, noting the pipe in question is not currently being used. “There is nothing behind it. There is no water flowing to it. We are just checking the grout and repairing it where we need to do so.”

She noted that there may be lane closures on Pine Hall road in the coming weeks as a result of...
the work. "We want to make sure we are minimizing the overall impact to the community and are keeping neighbors informed," said Chatman. "We are working with DOT on the lane closures and will post the appropriate signage." The bigger project involves installing a weighted filler overlay on the ash basin's main dam. "We are going in and adding several layers of sand and stone and then an additional layer of top soil that will be vegetated," said Chatman. "It will add another layer to strengthen the dam. It is all about improving our system. The overlay will serve a dual purpose. It add an additional layer of stability and strength, but it will also address seepage by redirecting those seeps back into the pond." She noted that the work was a result of increased attention to ash ponds following the Dan River spill, adding that the company was inspecting and upgrading facilities throughout its system as well as increasing groundwater monitoring efforts.

"The ash basin at Belews Creek is operating safely, but we are always working to improve operations across our system," she said. "We have between 30 and 35 identified seeps at this site. The total seepage volume at most sites is very small compared with the wastewater being discharged daily through normal outfall. For example Belew's average daily discharge is 8.1 mgd with seepage at 0.2296 mgd (2.83%). Seeps generally occur at low flows and contain low levels of constituents. "Dewatering and permanently closing ash basins will ultimately resolve the seeps," she said. "In the meantime, we're following a process directed in the new Coal Ash Management Act to identify, test and monitor seeps. We provided detailed data on seeps so state regulators can make informed permitting decisions. Our objective is to include seeps in the permits so we can follow the appropriate monitoring protocol or next steps regulators prescribe. Keep in mind that some seeps are natural seeps that may fluctuate based on rainfall, season and other factors. Other seeps included in these reports are engineered drains at the base of the dams that utilities install to route water away from dams."

Chatman said Duke Energy had been monitoring groundwater at the site since 2007. "Since the Dan River spill we have gone in and installed more groundwater monitoring wells across the fleet and about 63 new monitoring wells at Belews Creek," she said. "They will provide some of the most comprehensive information about what is going on around our basin. Then we will get to groundwater modeling where we will look to see how the groundwater will move over time. The state puts all of that together to inform their process on when these basins are closed." She said the report on the Belews Creek ash basin would be submitted to the state on Sept. 9, but noted it would still be some time before a decision on how to close the basin, whether to move the ash to a lined landfill or to cap it in place, would be made. "We are committed to closing basins safely in North Carolina," said Chatman. "We continue to conduct science and engineering studies at the Belews Creek. The final decision will depend on DENR's basin classification, which should be done by the end of the year, required by the CAMA that involves public input." She said once all of the studies have been completed then Duke would start to develop a site specific closure plan. "We have released some closing recommendations for some locations, but Belews Creek could still be a candidates for either cap in place or excavation," said Chatman. "We don't have the science back right now to give that recommendation. As part of our closure planning process we look at groundwater and we look at the overall environmental impact before making any recommendation on a basin." She added that if the recommendation would be to move the ash from the existing facility, then Duke would use special trucks to minimize the impact of airborne dust.

(Where's the dam?)

Groton Dam Demolition Makes Way For Trout
By CHARLOTTE ALBRIGHT • SEP 4, 2015, digital.vpr.net

All this week, jackhammers have been destroying a small dam on the Wells River in Groton. The dam was built in 1908 to power Groton homes but it’s been useless since it was damaged by the 1927 flood.
At the demolition site excavators pulverize and cart away what’s left of the concrete structure that once held a turbine, a flywheel and a drive train for a small, defunct hydropower plant. Ron Rhodes is Steward for the Connecticut River Watershed Council, which is leading this project. Rhodes says "good riddance" to a dam that kept trout downstream from swimming and spawning upstream. “These dam removals take pinch points out of the river," Rhodes explains. "They're good for fish passage and quite frankly they make our towns more flood resilient because... in high flows like Irene, you don’t have the dam pinching the river and holding the water back.” Instead, he says, high waters will now escape into a flood plain forest and wetlands where they can dissipate, rather than destroy property.

As Rhodes strolls down a dirt path from his pick-up truck to the riverbank, he points out two big machines hard at work. "The orange excavator is the one that has the hoe ram or the big jack hammer on it; the yellow excavator is the one with the bucket that’s removing the concrete as the other one breaks it up," he says. The cost for this project, funded by both public and private sources, is about $125,000. That includes re-planting of the scenic site. Rhodes says there are hundreds of small dams like this in Vermont that should be destroyed. The next one on the council’s take-down list is about 40 miles away. "Ompompanoosuc River down in the Thetford-West Fairlee area. There’s no shortage of deadbeat dams, you know, to take out of the rivers," he adds. But there is limited funding for dam removal, and there can be opposition from people who like to swim in the pools dams create. That’s why Rhodes places a priority on small, obsolete obstructions like this one. The Groton dam is now owned by Green Mountain Power, which is helping to pay for the demolition. Eventually, Rhodes says, the town might buy the refurbished recreation site.

(Rocks are a problem. Big rocks are a bigger problem! Wouldn’t want this job.)

**Rock Threatening To Crash Down At Base Of Arizona Dam**

*By Associated Press, Sep. 4, 2015, kjzz.org*

**FLAGSTAFF —** A massive piece of rock is at risk of crashing down from a canyon wall to the base of an Arizona dam, prompting the government to send in a crew of rappellers to keep the slab in place. The 500,000-pound slab — weighing more than many jumbo jets — began to crack last week in what the U.S. Bureau of Reclamation attributes to erosion that is typical for that type of rock. The area below the slab includes a passageway to a boat ramp, and water and power facilities for the dam. The Bureau of Reclamation has cut off access to the boat ramp, putting some rafting trips on hold until the rock can be secured.

A three-person crew has been scaling the towering walls to drill bolts that range from 6 feet to 8 feet into the sandstone. Six bolts were placed in the canyon wall a week ago before a small chunk broke loose and crashed to the ground, hitting a sturdy building and leaving a pile of rubble, said Bureau of Reclamation spokesman Chris Watt. "It's just plain luck that it didn't cause more damage because we don't know how big of chunks are going to fall," he said. "If more of it falls, that's a real concern." The slab measures 30
feet at its widest point and is 50 feet tall. Its thickness ranges from six inches to 4 feet, he said. The plan is to attach bolts in the area above the crack to make sure it's safe enough for crews to then work on the slab that is in jeopardy of falling. Temperatures can top 110 degrees on the face of the wall, limiting the hours the crew can work, Watt said. The work isn't expected to be complete until the first week of October.

For now, a rafting company that takes tourists from the base of the dam down the Colorado River to Lees Ferry has cut down on the number of rafts and daily trips. Colorado River Discovery general manager Korey Seyler said the company is now launching at Lees Ferry, about 15 miles downstream, and traveling up the river until it gets the OK to resume normal operations. "It certainly has had a major impact on us, as all of our trips depart from the base of the dam," he said. "We've ceased having the ability to access the area." Rock falls aren't uncommon at Glen Canyon. The layer of rock known as Navajo sandstone is common in the Southwest, particularly in Utah, and is prone to cracks due to erosion. This crack is the largest one in years, and workers at the dam have been watching it closely, Watt said. Frank Talbott, a former river guide who lives just outside Page, said rocks have fallen into the river and taken out part of a catwalk that goes to the lower part of the dam. He has seen clouds of dust from the fallen rock that don't settle for a couple of hours, he said. "They just happen, and it doesn't hurt anything, unless it's right at a special place at the dam," he said. Watt said the Bureau of Reclamation is hopeful that Mother Nature complies and doesn't send the rock crumbling before it can be secured.

(Rock falls aren't uncommon at Glen Canyon. The layer of rock known as Navajo sandstone is common in the Southwest, particularly in Utah, and is prone to cracks due to erosion. This crack is the largest one in years, and workers at the dam have been watching it closely, Watt said. Frank Talbott, a former river guide who lives just outside Page, said rocks have fallen into the river and taken out part of a catwalk that goes to the lower part of the dam. He has seen clouds of dust from the fallen rock that don't settle for a couple of hours, he said. "They just happen, and it doesn't hurt anything, unless it's right at a special place at the dam," he said. Watt said the Bureau of Reclamation is hopeful that Mother Nature complies and doesn't send the rock crumbling before it can be secured.

(Our worst nightmare.)

Tailings dam failures expected to increase, experts say
2015-09-04, northernminer.com

A year after Imperial Metals’ (TSX: III; US-OTC: IPMLF) Mount Polly mine released 25 million cubic metres of waste into British Columbia’s Fraser River watershed after its tailings dam broke, a new report claims that the rate of serious tailings dam failures is increasing.

The report, produced by The Center for Science in Public Participation, a nonprofit corporation that provides technical assistance on mining and water quality to public interest groups and tribal governments, warns there will be eleven “catastrophic” tailings dam failures globally between 2010 and 2019 that will cost about US$6 billion to clean up—or an average of US$543 million for each failure.

“Unless there is a significant change in the way that the industry does business and have safety drive the construction and design of tailings dams, these accidents are going to continue to happen at an increasing rate,” David Chambers, the nonprofit’s president and co-author of the report, says in a telephone interview from his home in Montana.

Chambers, a geophysicist, and colleague Lindsay Newland Bowker, director of Bowker Associates, Science & Research in The Public Interest, found that half of the sixty-seven serious tailings dam failures in the last seventy years occurred between 1990 and 2009.

“These tailings dams fail at a rate that is roughly ten times that of water supply reservoirs, which just shouldn’t be,” he says.

Indeed, just two days after the disastrous spill at Mount Polley, the Buenavista del Cobre mine in Mexico’s Sonora state, owned by a subsidiary of Grupo Mexico, spilled 40,000 cubic metres of copper sulfate acid into the Sonora and Bacanuchi rivers, about 40 km south of the border with Arizona.

Forbes magazine quoted Mexican Environment Minister Juan José Guerra Abud describing the spill as “the worst natural disaster provoked by the mining industry in the modern history of Mexico.” Forbes said the contamination “turned the waterways orange and affected the water supply of 24,000 people in seven communities along the rivers, forcing schools to close for several weeks while environmental authorities clean up the mess.”

Chambers argues that when mining companies can’t pay for all of the clean-up, tax-payers are saddled with it in what he says is effectively a “subsidy” to the industry. “If companies can pay for it, that’s great, but what we’ve seen so far is that that’s not what happens with most of these failures. The public ends up paying for part or all of it. Mount Polley is the exception, not the rule.”
Imperial Metals says it has spent $61 million on rehabilitation efforts at Mount Polley as of June 30. Steve Robertson, the company’s vice president corporate affairs, told The Northern Miner that he expects the total clean-up bill will likely come to roughly $67.4 million, although that figure is subject to revision.

Jack Caldwell, an engineer at Robertson GeoConsultants Inc., a Vancouver-based consulting firm, says improving mine-waste facilities will cost a fortune but that the cost is “trivial by comparison with the estimated cost of dealing with a breach.” Caldwell argues that until tailings dams are designed and managed to the highest standards of practice seen at water dams, the statistics on failure rates are unlikely to change. He contends that at a minimum, all stages of tailings dam design as well as all reports and drawings, should be peer-reviewed by in-house design consultants, and become an integral part of the construction process.

An annual tailings facility construction report also should be prepared, he says. It should be peer reviewed by the company preparing it, or a reputable consultant if the mining company prepares it. Then the annual report should be delivered to the regulators and made public. In addition, there should be an independent tailings review board that is at least as active as those that are in place for the oil sands mines, he argues, and it should report to senior executives at the mining company. “They should report to senior mine management but their deliberations should not be required to be made public, for they may have tough-love stories to tell,” Caldwell says.

There should also be a report written every four months by a consultant that is independent of the mining company and its design consultants. The reports should document the current condition of each tailings facility as well as issues considered to exist, and compliance with operations and construction documents. “These reports should be delivered to the regulators and made public immediately—much as it is currently done in South Africa,” he says. Finally, Caldwell recommends that regular dam safety reviews be held by a committee that includes regulators, senior independent engineers, the mine’s consultants, and mine personnel, and that the dam safety reviews should be made public.

“Failing this,” he says, “no amount of advice, good will, and good practice manuals will change the rate of mine waste management failures.” Caldwell has been writing papers about tailings dam failures each year for the last three years and calculates that on average, three or four tailings dam failures occur every 365 days. Moreover, the failures aren’t limited to active tailings dams at producing mines. Last month, millions of gallons of toxic mining waste from an abandoned gold mine in southwestern Colorado spilled into the Animus River, a source of drinking water and irrigation for the surrounding community. “Some would argue that mine waste management failures come out of nowhere and nobody anticipates them and the systems don’t seem to be able to catch them in spite of everything we do, say, read, and write, and despite regulations and government action, these things seem to slip through the cracks,” he says. “Yet long years of statistics seem to support the conclusion that such failures are not black swans, so it follows that mining ingenuity should be able to prevent such failures.”

(Cracks in a dam are not a good thing.)

Bryan Texas Utilities investigating cracks found at Lake Bryan dam

Bryan Texas Utilities is keeping an eye on the dam at Lake Bryan after a routine inspection found cracks in the soil. BTU officials said the cracks were minor and there was no immediate danger of the dam failing, but the potential exists for the situation to worsen.
"The dam undergoes an annual inspection by our outside engineering firm and weekly visual inspection by BTU staff," said BTU spokesman David Werley in a news release. "There have been repairs made to the dam in the past and BTU is diligent in the inspection and maintenance of the facility."

The cracks span a 250-foot area on the 17,500-foot-long dam, and are several inches wide. When the cracks were initially spotted over the weekend, holes were drilled and refilled to test the depth of the cracks, Werley said.

"Everything looked good until Tuesday, [when] we noticed that the cracks had come back," he said. Heavy machinery and engineers from both BTU and the Texas Commission for Environmental Quality are working to repair the cracks. Werley said the dam is an earthen structure, and cracks are to be expected as soil shrinks and expands with moisture. Werley said the cracks should be repaired within a few weeks. According to a press release, the cracks shouldn't pose any danger to citizens. The South Embankment, which is a part of the dam, is closed. The dam is fed by an aquifer, not a stream or river, Werley said. This means that any rain shouldn't affect the dam. "We're very transparent about these situations," Werley said, "and we're diligent to fix this."

Hydro:
(Hydro makes sense all around.)
Chignik Lagoon cuts ribbon on hydro project
September 4th | Hannah Colton, thebristolbaytimes.com

What does it take to power a village of 70 people? In Chignik Lagoon, the answer to that question has dramatically changed — from burning diesel to flowing stream — but the man behind the system remains the same. "I'm the garbage man, the guy that operates the sewer system, and also the fuel man... and I do basic maintenance on all the village equipment," explains Larry McCormick matter-of-factly. To top his list of duties, McCormick is also the power man. A certified diesel power plant operator, he has for years planned his schedule around three-times-daily visits to the diesel plant. Now, along with two other operators, McCormick is learning the ins and outs of the new run-of-the-river hydroelectric system on Packer Creek. Though the $5-million dollar hydro project has been operational since this spring, the village held a ceremony on Aug. 27 to officially celebrate the shift from diesel. The festivities began with a potluck and presentation at the school. Then, the two dozen attendees drove or walked the quarter mile to the new 480-square-foot hydro powerhouse. There,
photos were taken and the ribbon was cut with the gentle humming of the water turbine in the background.

McCormick says the turbine's whirring is nothing compared to the roar of the diesel generators. "You wouldn't hear me if we were in the diesel plant right now," he says, in what teachers would call his indoor voice. "I'd have to be hollering and you'd have to wear ear plugs. This is really quiet." The temperature-controlled building houses the relatively simple system where water enters the building in one pipe and splits into two branches before entering the turbine to generate electricity. In each branch of pipe, valves called "spears" automatically adjust to let more or less water through, depending on the fluctuating energy demands of the village. McCormick monitors the operations from a tiny laptop computer in the powerhouse. Rows of tiny numbers show the volume and pressure of water in the pipe, the amount of electricity being produced and used, and the total lifetime of the system. "It's been running for 4,083 hours," notes McCormick. "Still brand new."

Old tech, new savings
This is not the first time Chignik Lagoon has utilized hydroelectric power on its steeply flowing Packer Creek. A working hydro project once powered a now long-gone cannery in the community. For decades now, diesel fuel arriving via barge has provided the vast majority of the town's heating and electricity. In 1984, the first feasibility study began for the modern hydro project. It noted a local price per gallon for diesel fuel of $1.25. Thirty years later, that price has risen to $4.85 per gallon. Michelle Anderson, grants administrator for the village council and manager of the hydroelectric project, says hydro is already saving the village about $500 a day in diesel costs. It doesn't entirely eliminate the need for diesel, but the hydro's 167-kilowatt capacity is currently providing for 94 percent of the village's energy needs. "The community will see a reduction in electrical rates in the coming months," said Anderson, "which in the long run may motivate new business and stimulate the local economy." She hopes those cost savings will have a trailing effect, leading to new jobs that will keep families in the community and kids in the school. In addition to the economic benefits of the project, Anderson notes that reducing dependence on diesel cuts the chances of an accident or spill. "I could go on for a long time as far as the benefits this project has," said Anderson in her presentation to the community. Downsides to the project are hard to name. Packer Creek is not a natal stream for salmon, but Anderson says it is home to a handful of Dolly Varden, so the village will work with Fish and Game to monitor the fish.

Road to somewhere
At about a mile long, the new gravel road leading to the Packer Creek dam nearly doubles the total amount of road in Chignik Lagoon. Following Packer Creek, the access road climbs to lush views of the lagoon and surrounding bluffs. Though it's a pleasant site now, the construction was not a simple process. Lake and Peninsula Borough Manager Nathan Hill says the workers ran into complications due to the glacial till that underlies some of the road. "The construction of the road proved to be a little more difficult than originally anticipated," said Hill. "But Orion West Construction did a bang-up job and were able to overcome those challenges." Overall, says Hill, the project went smoothly due to the cooperation of the state and the initiative of the village. "We're inspired by communities like that who take the bull by the horns and take responsibility for their energy needs," said Hill. "It's people at the local level taking charge and taking ownership of their future."

Energy with ease
At the top of the hill, McCormick gives a tour of the 9-foot dam to Lake and Peninsula mayor Glen Alsworth and assembly member Myra Olsen. Wielding a long-handled brush, he shows them how he clears debris off of a fine metal screen that allows water to spill down into a container called the headbox, and then into the pipeline. "When it first came online in March, the screens were freezing," explains McCormick. "We had to bust ice off the screen. But that only happened one time." Soon, leaves will start falling in earnest, clogging the fine screen more quickly. The year ahead will be a learning experience as McCormick and the two other operators become
familiar with the quirks and seasonal challenges of the hydro system. Even so, he expects it will be easier to manage than the diesel plant. "You have to change the oil in the diesel engine every 250 hours of running," explained McCormick. "That creates a lot of waste oil over time, because it takes five gallons of oil to change the engine." Those gallons of used oil then have to be transported to a dump site and burned up - more dirty work. The hydroelectric system, on the other hand, requires just a dab of grease on the bearings every 1,000 hours. McCormick says he hasn't yet been able to adjust to the lower maintenance lifestyle. "I still come up here three times a day. Just because it's a habit," he admits. Back in the school at the community potluck, tenth grade student Anna Jones read a poem by her classmate Isabelle Erickson, voicing the hopes of a community no longer dependent on diesel: "I can finally hear the birds, they're singing in the sky, the noise, that noise is gone. Oh I can already smell a change, the air is fresh and clean, the clouds, those black clouds are gone. I can see a time ahead, with more space for a town to grow. The days, those cramped days are gone." For Larry McCormick, the days of handling messy diesel oil are nearly gone, too. "I've noticed that I do have more time on my hands," says McCormick. "You don't have to worry about as many things going wrong [with hydro]. So far it's been going really good."

(Hydropower most reliable)

Hydropower most reliable
September 6, 2015 in Letters, Opinion, spokesman.com

Having worked in the wind energy field for several years, I advocate for a balanced renewable energy policy. But one needs to understand that megawatts of installed wind power aren't the same as generated power because wind is intermittent. Wind-generated electricity can be produced with few adverse impacts, but the inconsistency of wind and solar requires the Bonneville Power Administration to have back-up generation capacity (called spinning reserves) that can be brought online almost instantaneously to meet the fluctuating energy demands of the grid. BPA says it cannot currently firm up any more wind. Hydropower is the optimum source of spinning reserves because turbines can be activated quickly, and water volumes ensure a consistent source. Other options for spinning reserves are nuclear, coal or gas-fired generators that continuously burn fuel, waiting for the call to ramp up and generate firming power. They cannot be simply turned on and off because the expansion and contraction would literally tear it apart. Hydroelectric power is currently the best, most consistent and reliable source we have, with the bonuses of flood control, navigable waterways and availability of irrigation water.

Dave Richards, Clarkston

(Dubuque dam considered for power source)

Dubuque dam considered for power source
Energy Resources USA applies for a preliminary permit to explore the possibility of a hydropower plant.
BY THOMAS J. BARTON, thonline.com, Sat Sep 5, 2015

Dubuque, IL dam considered for power source A utility provider hopes a local dam will help it join a nationwide movement to harvest the power of America's rivers, while another has chosen to pass on Dubuque. Energy Resources USA Inc. is considering Dubuque as a possible location for a future project. The company has applied for a preliminary permit to build a hydropower plant at Lock and Dam No. 11 on the Mississippi River. The proposed 19,800-square-foot powerhouse would produce 119,655 megawatt-hours per year -- enough energy to power 10,000 to 11,000 homes.

Copy obtained from the National Performance of Dams Program: http://npdp.stanford.edu
Attempts Friday to reach a representative of Energy Resources USA were unsuccessful. The permit would give the company the right to explore the feasibility of developing the site for up to three years. It would not authorize construction or operations, said Federal Energy Regulatory Commission spokeswoman Celeste Miller. The FERC oversees hydroelectric projects in the U.S. and is the entity that will consider the permit application. Missouri River Energy Services, a Sioux Falls, S.D.-based utility company, was considering Dubuque in 2013 as a possible location for a future project. However, company officials last year chose to pass in favor of more-lucrative locations near the Quad Cities and St. Louis. "We do have some other permits that we believe present better opportunities for us," said company spokeswoman Joni Livingston, noting that other sites have lower infrastructure costs and greater power-generation capabilities.

Hydroelectric development stagnated in the 1980s and 1990s as environmental groups lobbied against it and a long regulatory process required years of environmental studies. But for the first time in decades, power companies are proposing new projects to take advantage of government financial incentives, policies that promote renewable energy over fossil fuels and efforts to streamline the permit process. Hydropower is the largest source of renewable energy in the United States, according to the U.S. Department of Energy. Industry advancements have increased efficiency and lowered environmental impacts. According to the department, hydroelectricity provides about 7 percent of the nation's power -- enough to power more than 20 million U.S. homes. But of the about 80,000 dams in the U.S., only 3 percent have hydropower equipment. The size of the U.S. hydropower fleet has grown over the past decade. At least $6 billion has been invested in refurbishments, replacements and upgrades to U.S. hydropower plants. With the right policies, the industry could add 60,000 megawatts of energy by 2025, according to the National Hydropower Association, a trade group. Association Executive Director Linda Church Ciocci points to the growing attractiveness of hydropower as a method of storing energy in light of the growing volumes of variable outputs from wind and solar. "Because wind and solar don't generate electricity when the wind isn't blowing or the sun isn't shining, there must be backup generation sufficient to meet changing daily demand," Ciocci said. "Hydropower is the best battery we have for grid storage." The City of Dubuque and residents have 60 days from Aug. 20 to submit comments on the application, motions to intervene or competing applications. "We are asking council be aware of it. Staff will do research on our response and will bring that back to council for their approval," said Assistant City Manager Teri Goodmann. To comment on the application, go to www.ferc.gov and click on the "eComment" section under "Documents & Filings." To view the application, enter docket number P-14687 under the "eLibrary" link. For assistance, call 866-208-3676 FREE. City Council members in 2013 adopted an effort to reduce community greenhouse gas emissions to 50 percent below 2003 levels by 2030. "Hydropower would be one of the constellation of options the city and community partners are looking at in terms of identifying renewable energy options," Goodmann said.

(Oh oh, the price may go down.)

**Dammed if they do: Hydroelectric plant operators say Consumers Energy and DTE Energy want to squeeze them with lower payments**

Hydroelectric plant operators say big utilities want to squeeze them with lower payments

By Jay Greene, crainsdetroit.com, 9/6/15

The White's Bridge Hydro Co. plant near Grand Rapids sells power to Consumers Energy Co. for 7.1 cents a kilowatt-hour. Consumers and other utilities now want to pay 4.5 cents. "That would kill us," says White's Bridge owner Victor Leabu. Victor Leabu is one of 23 owners of hydroelectric power plants in Michigan who are concerned that the big utilities -- Consumers Energy Co. and DTE Energy Co. -- plan to cut payments for power.
purchases by nearly half over the next several years. It's part of efforts to reduce costs and reform the state's energy market.

Leabu, owner of White's Bridge Hydro Co. in Lowell, near Grand Rapids, said his current 32-year power purchase agreement, authorized under federal law and approved by the Michigan Public Service Commission, expires in 2016. Since 1984, Leabu, who lives in Brighton, has operated a small, 750-kilowatt hydro plant on the Flat River in Ionia County. It was built by the city of Lowell in 1896.

A role for biomass?
How does biomass figure into the overall plans to reform the state's energy industry? Gary Melow, director of Ithaca-based Michigan Biomass, which represents six of eight wood-fired generating plants in the state, said he is concerned about the offer from utilities on purchase price reductions, specifically Consumers Energy's statements that it will offer biomass operators 4.5 cents per kilowatt hour for the next five years. That price is insufficient to cover costs, Melow said. "That was their offer," Melow said. "In terms of rates, it is a 50 percent rate cut. That doesn't cover production costs per kilowatt hour. We need the Public Service Commission to follow (federal regulations) and set the avoided cost rates like they did in 1982."

Large biomass operators in the state include the Genesee Power Station in Flint and the Grayling Generating Station LP. About 20 percent of the state's renewable energy comes from byproducts from wood products. For example, McBain's Viking Energy, which has a contract with Consumers that expires in 2018, creates energy by burning wood chips and railroad ties. The McBain-based business in northern central Michigan employs 23 workers.

Expand Contract
He said his contract with Consumers Energy pays him 7.1 cents per kilowatt-hour. That rate allows him to employ three workers, generate clean electricity for about 300 homes, maintain infrastructure, provide a recreation area and, after all that, make a small profit. But Leabu said he and the other hydroelectric owners -- along with eight operators of biomass-generating plants in Michigan -- are in danger of having to shut down because of inaction by the state Legislature and efforts by the utility companies to stifle competition. Utilities "want to pay us the (Midcontinent Independent System Operator) rate of 4.5 cents per kilowatt-hour," Leabu said. "That would kill us."

Utility contracts
The Midcontinent Independent System Operator is a regional agency that oversees electricity production in Michigan and 12 other states. DTE, Consumers and other utilities purchase power from the regional authority when demand exceeds their local generating capacity.

Other hydro plants in Michigan that have contracts with Consumers expiring in 2016 include operations in Alverno, Kleber and Tower in northern Michigan and Fallasburg in West Michigan. Dams under long-term contracts with DTE include hydro plants in Belleville, Ypsilanti and Ann Arbor. Those contracts don't expire for at least five more years, a DTE spokesman said. David Ronk, Consumers executive director of transactions and wholesale settlements, confirmed that the utility plans to reduce payments in upcoming contracts as they expire. "There are a number of existing contracts paid in the 7- to 8-cent range, some higher," Ronk said. "The prices were based on (energy costs) in the 1980s and 1990s, when the contracts were negotiated." Consumers is concerned that some plants might not survive with lower payments for energy generation, based on their cost structure, Ronk said. But Consumers needs to keep rates as low as possible for customers. "The markets have changed some. We are finding we can replace a number of these contracts with shorter-term energy purchases (through the Midcontinent Independent System Operator), and those prices are lower" than those under contracts with hydro and biomass plants, Ronk said.

PURPA rein
The power purchasing contracts with hydro and biomass plants are required under a 1978 federal law called PURPA, the Public Utility Regulatory Power Act, approved under President Jimmy

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Carter during the 1970s oil crisis. The act was designed to promote energy conservation, expand domestic energy production and spur clean sources of renewable energy. PURPA also requires states to approve contracts between "qualified" energy providers such as hydro and biomass plants and regulated utilities. "The omissions in the current energy bills (Senate Bills 437 and 438) would put us out of business," said Leabu, adding that he wants language in the energy bills to state PURPA is still in effect for power generators under 20 megawatts. Laura Chappelle, a partner with Varnum LLP in Novi, said the problem affecting hydroelectric and biomass plants is not only with the proposed energy bills. It also is with the state's outdated statutes and regulations. Utilities "need to follow the PURPA law in setting new avoided-cost contract provisions, but they have no guidance from the Legislature or the commission," Chappelle said. In 1982, the Public Service Commission issued an order in a contested case that used the "avoided costs" of a coal-fired power plant to set the rates by which utilities would pay providers of hydro and biomass electricity. Under the avoided-cost approach, the rates that utilities pay to qualified generators are based on the costs the utilities would have incurred to obtain electricity from their own power plants or other sources, according to PURPA. "Compared with other states, Michigan is silent on any state structure to address PURPA" and avoided costs, said Chappelle, a former chair of the PSC who also represents hydroelectric operators. "The commission still has the authority to set PURPA rates," she said. "They are not comfortable doing this until they get direction from the state." Other states that have regulations in place to clearly authorize PURPA provisions include Washington, Rhode Island, Illinois, Oregon and New York, Chappelle said. "They have statutory structure to comply with PURPA and have (commissions) that set rates fair to utility, facility and customers," she said. "In Michigan, we don't have that." Julie Baldwin, the PSC's electric reliability manager, said the commission thinks it has the authority to evaluate PURPA contracts through the Federal Energy Regulatory Commission and its 1982 order. "There are a handful of methodologies to establish avoided costs," Baldwin said. "The way Consumers is doing is through using market-based pricing. That is one way the FERC has been comfortable with in the past." But the PSC in 1982 established a proxy methodology of its own that looks at the avoided costs of the next likely power plant the utility would build, she said. "Before, it was a coal plant we used as a proxy price," Baldwin said. "Although the commission has not updated its proxy," she said, "it is most likely now the proxy would be a combined-cycle gas plant" at 7 cents per kilowatt-hour.

(What's going to back up solar at night? The opponents of fracking will drive the cost of gas up!)

Drought is killing California’s hydroelectric power. Can solar make up the difference?
By Steve Scauzillo, San Gabriel Valley Tribune, 9/08/15, sgvtribune.com

Snowmelt entering Big Creek’s hydroelectric powerhouses has slowed to a trickle. Reservoirs sit at their lowest levels ever. The 102-year-old central-California complex owned and operated by Southern California Edison lost 80 percent of its hydroelectric power this year, a direct result of a persistent drought that has wiped clean the Sierra Nevada snowpack and produced an eerie silence inside Big Creek’s 27 dams and nine powerhouses.

“This is definitely the worst I’ve ever seen,” said Andrew McMillan, operations manager for Edison’s massive hydro plant, a historic project situated between Yosemite and Kings Canyon financed by Henry Huntington in 1913 to send power to his Pacific Electric Red Cars. Knowing droughts can hang around for years, even decades, Edison managed the water to keep some generators humming during peak summer demand, McMillan said. SCE then added new solar and wind power to replace the 800

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megawatts of hydroelectric evaporated by the drought, said Colin Cushnie, SCE’s vice president of energy procurement and management. “It was our good fortune that there were (solar and wind plants) already in the pipeline,” Cushnie said.

Largest state drop in decade
Statewide, the pattern is repeated, only on a grander scale. California is approaching the largest reduction in hydroelectricity in 10 years, said Steven Greenlee, spokesman for the California Independent Systems Operator, which monitors 80 percent of the state electric grid. (The Los Angeles Department of Water and Power and the Sacramento Municipal Utility Department are not part of the California Independent Systems Operator.) The four-year drought has cut hydroelectricity by 36 percent, Greenlee said. Now, the state has 4,700 megawatts of hydroelectric power available from central and Northern California dams, down from a capacity of 7,400 megawatts. "It is shaping up to be one of the lowest in 10 years,” he said.

Solar power filling gaps
Although the state’s electrical grid has taken a punch from the drought and record-high summer month temperatures, it has remained standing. A state mandate to convert from burning oil, coal and natural gas, which release carbon dioxide into the atmosphere and contribute to global warming, to solar, wind and geothermal energy has helped. For example, state utilities filled the hydro gap by adding 2,300 megawatts of new electricity generation, 96 percent of which was from solar energy, Greenlee said. “The bottom line is, we have had less hydroelectricity, but it has not impacted the operations or the reliability of the grid,” he added. Well, not that much.

Heat equals high demand
On June 30 and July 1, the California Independent Systems Operator called two flex alerts, asking utility customers to conserve by turning off appliances during the day and adjusting air conditioning to 78 degrees or higher. But it’s not clear how much of that was due to a lack of hydropower. Hydroelectricity can account for 10 percent to 20 percent of the electricity consumed in the state, said Peter Gleick, founder and director of the Pacific Institute, an Oakland-based environmental think tank. It is clear the drought has taken a bite out of the state’s electrical pie and that bite grows bigger as the drought drags on. In July 2012, the state’s hydroelectricity average hourly production reached 3,000 megawatts. In the same month in 2013, it dropped to 2,800 megawatts and then to 2,200 megawatts in July 2014, Greenlee reported. The highest use of electricity so far this year occurred Aug. 28, when the state used 47,196 megawatts. The all-time record peak was set in July 2006 at 50,270 megawatts. Peak usage is driven by home and business air conditioners running longer during heat spells, he said. The California Independent Systems Operator is required to keep a 7 percent reserve. It has access to 65,000 megawatts of electrical power, Greenlee said. “We have plenty of capacity. Now, it is just a matter of using it efficiently,” he said.

Will El Niño help?
Throughout the drought, the state augmented new solar and wind power with electricity from plants burning natural gas. Since natural gas is not free like snowmelt, this has cost the state an extra $1.5 billion, Gleick said. Farmers facing rapidly dropping groundwater levels are running electric well pumps longer. This increases electric demand and raises costs, Cushnie said. Like water officials, electricity managers are banking on a strong El Niño this winter that could bring normal to above-average rain and snowfall. "Our reservoirs are so very low, we should be able to absorb most of that," McMillan said, adding that hydroelectricity at Big Creek could then reach 100 percent. But due to global climate changes, a strong El Niño might not increase hydroelectric production if precipitation falls mainly as warm rain in Southern California. "Hydroelectricity is very dependent on snowpack that melts slowly during those first few weeks of summer," Greenlee said. “If we don’t get any snow in the Sierra, there would be little to no hydroelectric power.”

Potsdam village weighs options in repairing East Dam hydro plant
By ALAN RIZZO, TIMES STAFF WRITER, SEPTEMBER 9, 2015, watertowndailytimes.com

Copy obtained from the National Performance of Dams Program: http://npdp.stanford.edu
POTSDAM, NY — Having received an estimate from a hydro consulting firm, the village now must decide what to do with its idle East Dam plant — which could cost up to $1.2 million to overhaul, and cause property taxes to increase 4.5 to 6 percent. Mayor Steven W. Yurgartis laid out several options for trustees in a presentation Tuesday, ultimately reporting that even if the village does not repair the East Dam plant, there still will be a property tax increase of 2.8 percent to deal with deficits. Trustees Ruth F. Garner and Eleanor F. Hopke did not attend the meeting.

Mr. Yurgartis explained that in an "optimistic scenario," the village would borrow $900,000 to overhaul the plant’s two units, both of which include a gearbox, turbine, generator and other components.

He said taking into account operating expenses, inflation, interest payments, and recent data on revenue generated by the East Dam plant through remote net metering, the village would be able to pay the $900,000 back in about 12 years. The deficit that would be created, which he said would last 15 years, would require a 4.5 percent increase in the property tax rate in the first year. "If you look at that scenario, what you see is that right from the first year, we come out ahead after we pay our expenses on the East Dam, pay off the loan," he said. Mr. Yurgartis said in a more conservative scenario, the village would borrow an additional $300,000 to pay for repairs to electronic controls at the plant, which he said are also aging and likely need replacing. He said the resulting loans from that scenario would take an estimated 23 years to pay back. In this scenario, the deficit would last about 20 years, and require a property tax increase of 6 percent in the first year. "If we do that, we can see that in the first year, we will be down about $40,000 and we will continue to be spending more money than we’re making for about 10 years," he said.

Ultimately, Mr. Yurgartis said, the village has two choices: pay to repair the East Dam plant, or leave it as is and use the West Dam plant to generate revenue through remote net metering. He argued that because net revenue generation at the East Dam plant would be negative in the conservative scenario, the village shouldn’t hurry to repair it, instead advising that the village spend several months on research. "It’s not like we’re losing $100,000 a year while the East Dam sits idle," he said. "To get the East Dam up and running we have to borrow a bunch of money, and because we have to borrow a bunch of money, it’s going to cost us more money than we make, probably. So there is no comparative here to make that decision very quickly."

Overhaul cost breakdown per unit:
- Dewatering of draft tube for access to runner and turbine bearing — $16,000
- Disassembly and removal of generator, shaft and runner — $24,000
- Generators - cleaning, new bearings and seals, inspection and testing — $35,000
- Gearbox rehabilitation — $65,000
- Turbine - runner hub overhaul — $200,000
- Turbine - new bearing shell — $28,000
- Reassembly - components installation — $58,000
- Reassembly - unit alignments — $16,000
- Rodney hunt roller gate inspection & rebush some wheels — $8,000

Information obtained from an estimate from Hydro Consulting & Maintenance Services Inc., York, Penn.

(Small hydro is no more.)

**NPPD to shut down Spencer Dam hydropower plant, give up water rights on Niobrara River**

NEBRASKA PUBLIC POWER DISTRICT, SEPTEMBER 11, 2015, by David Hendee / World-Herald staff writer, omaha.com

Copy obtained from the National Performance of Dams Program: [http://npdp.stanford.edu](http://npdp.stanford.edu)
LINCOLN — Nebraska Public Power District will shut down its hydropower plant at Spencer Dam on the Niobrara River and give up its water rights on the popular canoeing stream.

The deal clears the way for the Nebraska Game and Parks Commission and a coalition of five local natural resources districts across northern Nebraska to get the right to the water for recreation, conservation and continued irrigation. The agreement announced Thursday is designed to ensure that enough water will be set aside for agriculture, fish, wildlife and recreation along the north-central Nebraska river. The 88-year-old hydro unit at the dam north of O’Neill is capable of generating only 3 megawatts of electricity, or about the equivalent of one wind turbine. To compare, NPPD’s Cooper Nuclear Station near Brownville can generate 800 megawatts.

The hydropower unit will cease to operate in two years, when Game and Parks and the coalition take over the water right under joint management. The dam is expected to remain intact, and the river allowed to flow freely through the structure. The historic agreement had its roots in a Nebraska Supreme Court decision from last year. Farmers waged an unsuccessful seven-year legal fight against a state order to shut off their irrigation pumps. NPPD had requested its full allotment of water during a drought in 2007, sparking the unsuccessful lawsuit. The agreement is a good result because now the water will be available to everyone’s benefit, said Don Blankenau, a Lincoln attorney who represented the farmers in the lawsuit and was involved in later negotiations that led to the deal. “When the Supreme Court served us a bunch of lemons we said, ‘How do we grind this into lemonade?’” Blankenau said. “If we had won the litigation, we wouldn’t have gone this route. This works out to everybody’s benefit.”

Natural resources districts involved in the pact are the Lower Niobrara in Butte, Middle Niobrara in Valentine, Upper Elkhorn in O’Neill, Upper Niobrara White in Chadron and Upper Loup in Thedford. They formed a coalition known as the Niobrara River Basin Alliance. The deal is a Nebraska plan for conserving a Nebraska jewel, said Jim Douglas, director of the Game and Parks Commission. “The commission, the NRDs and NPPD want to ensure that the future of the Niobrara River will be decided by Nebraskans, with the best interests of Nebraskans in mind,” he said. NPPD is pleased that the pact means the continued preservation of the river, said Brian Barelts, NPPD’s water resources manager. The utility set a $12 million value for the water rights and electricity generated at the dam. NPPD will receive $9 million in compensation for giving up the right. The natural resources districts will contribute $4 million. Game and Parks will seek at least $1.5 million from the Nebraska Environmental Trust. The three parties will jointly seek $3.5 million from the state’s Water Sustainability Fund. In-kind support from NPPD will provide the remaining $3 million. Blankenau said he went to the natural resources districts soon after the July 2014 court decision with an idea to find a way to convert NPPD’s water rights — which date to the late 19th century — into a multiple-purpose right that could be jointly used with Game and Parks. NPPD’s water rights are valuable because they are senior to about 440 others upstream from Spencer Dam to the Wyoming border. “That effectively controls the entire flow of the river,” Blankenau said. The coalition of NRDs agreed with Blankenau’s plan. Game and Parks bought in, too. By August of last year, the two parties had their first private meeting with NPPD officials. Marty Graff, a member of the Middle Niobrara NRD board and secretary of the alliance, said that the districts have traditionally favored local solutions but that it was important to work with NPPD and the commission.

Game and Parks started seriously studying the possibility of setting aside water in the Niobrara for fish, wildlife and recreation in 2006. The agency conducted six studies over eight years, and commissioners had been expected to make a decision this year on seeking state protection of a
certain amount of water in the river. Landowners and natural resources districts in the basin were quick to express concerns about Game and Parks' motives and were unconvinced of the need to protect river flows. The agreement reached Thursday should resolve many of those concerns, Blankenau said. “The NRDs and Game and Parks saw this as a real opportunity to build bridges between the agencies,” Blankenau said. “It’s been rough from time to time.” The pact also should prevent the need for the National Park Service to file a lawsuit to protect water supplies in the Niobrara, part of which is managed under the national scenic river system, Blankenau said. Park Service officials met in May with Game and Parks commissioners in Ogallala and encouraged the agency to act on securing water rights in the river for recreation. Blankenau said he never considered a federal lawsuit likely. “But you don’t want the feds stepping in and throwing their muscle around,” he said. Spencer Dam is about 100 miles downstream from Rocky Ford, the end of the river’s busiest paddling stretch. In addition to taking over the dam and water rights, the commission and the NRDs plan to seek an instream flow — which requires a certain amount of water to remain in a stream — for the 39-mile stretch of the river below the dam to the confluence of the Niobrara and Missouri Rivers. That stretch of river is used by several endangered species, including pallid sturgeon, interior least tern, piping plover and whooping crane. Besides securing funding, next steps for the group include seeking legislative authority to convert NPPD’s water rights to multi-use water rights. Legislation has been drafted and some state senators briefed, Blankenau said. Governing bodies of the agencies involved in the deal each approved the agreement Thursday.

**Water:**
(The long arm of the Federal Government!)

**Judge: Injunction against water rule limited to 13 states**
By James MacPherson | AP September 4, washingtonpost.com

BISMARCK, N.D. — A federal judge in North Dakota said Friday that his injunction blocking a new Obama administration rule aimed at regulating some small waterways applies only to the 13 states that sued to block it, and not nationwide. The ruling by U.S. District Judge Ralph Erickson clarified the temporary injunction he issued last week at the request of North Dakota and 12 other states. They sought to stop the U.S. Environmental Protection Agency and the Army Corps of Engineers from regulating some small streams, tributaries and wetlands under the Clean Water Act. “Because there are competing sovereign interests and competing judicial rulings, the court declines to extend the preliminary injunction at issue beyond the entities actually before it,” Erickson wrote. The EPA had maintained after Erickson’s initial ruling that the injunction applied in only those 13 states, and said it had begun enforcing it elsewhere. The states had argued that the judge made no geographical limitation in his ruling and it should apply everywhere.

“No harm, no foul for North Dakota and the 12 other states,” said North Dakota Attorney General Wayne Stenehjem, who filed the original lawsuit on behalf of those states. “It’s unfortunate for the other states because they will have to abide by the ruling.” The states involved in the lawsuit with
North Dakota are Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, New Mexico, Nevada, South Dakota and Wyoming. Justice Department spokesman Wyn Hornbuckle said, “We are gratified that the court agreed with our position that the preliminary injunction does not apply nationwide.” Erickson, who is based in Fargo, wrote that there are “compelling reasons in favor of both extension of the injunction and limitation of the injunction. “On the one hand, there is a desirability for uniformity regarding a national rule with national application. On the other hand, there is the idea of respecting the decisions of other courts and other sovereign states.”

Stenehjem said a total of 31 states have filed various lawsuits against the ruling. The states involved “cover 75 percent of the nation’s landmass,” he said. District judges in other high-profile cases have issued orders that apply nationwide, over the federal government’s objection. One recent example was earlier this year in Texas, where U.S. District Judge Andrew Hanen issued a nationwide order blocking the Obama administration from implementing rules to spare nearly 5 million people living in the U.S. illegally from deportation. Hanen issued his order in a lawsuit filed by Texas and 25 other states. The government has appealed. The water rule is a response to calls from the U.S. Supreme Court and Congress for the EPA to clarify which smaller waterways are protected. The EPA said the new law aims to help landowners understand which waters fall under the Clean Water Act. Thirteen states led by North Dakota sued, claiming the new rule illegally expands federal jurisdiction and infringes on their sovereignty. Some critics have also argued the rule does nothing to increase water quality. The government countered that the rule will help protect the nation’s waters from pollution and development and safeguard drinking water for 117 million Americans. Several other lawsuits remain from other states, farm and business groups that hope to delay or block the rule. State officials say the regulations could be harmful to farmers and landowners who might have to pay for extra permits or redesign their property to manage small bodies of water on their private land. The government argued in court last month that the new rule clarifies some of the ambiguity in the law and actually makes it easier for the states to manage some waterways.

Environment:
(Bear sleeping in a tree at Potter Marsh just south of Anchorage. Quick power nap even with all that noise in the background! – Sent by a Newsletter reader.)
Judge blocks construction of dam on lower Yellowstone, citing worries over endangered sturgeon
By MATTHEW BROWN, 9/8/15, therepublic.com

BILLINGS, Montana — A federal judge has blocked construction of a dam along the Yellowstone River near the Montana-North Dakota border over worries that it could harm an endangered fish population. U.S. District Judge Brian Morris says the U.S. Army Corps of Engineers needs to do further environmental studies before moving ahead with the $59 million irrigation project northeast of Glendive, Montana. Environmentalists sued to halt construction. Preliminary work had been slated to start this month. Corps officials argue a bypass channel around the dam would allow pallid sturgeon to reach upstream spawning grounds that they've been blocked from for decades. But Morris said in his Friday ruling that the agency failed to adequately analyze whether the bypass would work. An estimated 125 wild sturgeon are believed to survive in the lower Yellowstone.
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