1/07/2011

Some Dam – Hydro News™

and Other Stuff

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Quote of Note: *"Religions change; beer and wine remain." - - Hervey Allen*

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **Geyser Peak Alexander Cabernet 2006**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

Other Stuff:

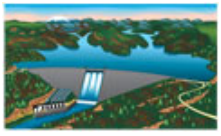
(This is no surprise. Now, how does this compare to a hydro project? The same wild claims exist in the U.S. and we're building this junk at an unprecedented pace.)

Wind turbines 'less efficient than claimed'

Wind turbines are 25 per cent less effective than the renewable energy industry claims, according to research.

telegraph.co.uk, 02 Jan 2011

The John Muir Trust (JMT), one of Scotland's leading conservation bodies, has challenged the common assertion that wind farms run at an average of 30 per cent capacity over a year. A study carried out for the Trust into the energy generated by dozens of wind farms, the majority of which are in Scotland, between November 2009 and last month, found they actually ran at 22 per cent of capacity. Campaigners insist the figures, drawn from data provided by the National Grid, challenge the role of wind farms as an efficient source of renewable energy. They said hundreds of wind farms had secured planning permission across Scotland based on inaccurate assumptions of their output. "This analysis shows that over the course of a year, the average load factor fell well short of what the industry claims, yet the 30 per cent figure is peddled at every public inquiry into a proposed wind farm," said Helen McDade, head of policy at the JMT. "This data is needed to counter that hype."



Dams

(A new law is a good idea, but to do the work it takes resources and that costs money, something many states don't have.)

EDITORIAL: State must move to regulate high-hazard dams

December 28, 2010, jacksonsun.com

If you live downstream from a high-hazard dam in Tennessee, your life could be in danger if the dam fails. That is a sobering fact of life for Tennesseans living in the shadow of 66 unregulated high-hazard dams. The time has come to pass legislation to ensure public safety in the areas affected by these dams. Prompted by an investigative story in The Jackson Sun in May, state Sen. Roy Herron began an investigation of his own regarding state law and the Tennessee Safe Dams Program. That led to the state getting permission to inspect 58 of the 66 such dams. The state found only two of the dams needed immediate attention. That is good news, but it does not solve the long-term problem. Under certain circumstances, state law allows a high-risk regulated, watershed dam to be reclassified as a farm pond after 50 years and to no longer be inspected. In the next five years, as many as 40 such dams in West Tennessee will reach that point and no longer be inspected.

The state's Safe Dams Act never anticipated the changes in Tennessee population over many decades. Dams built 50 and more years ago were in remote areas. But today, the dams and their downstream environments often include areas where people live. A failed dam flooding into pastureland can have an environmental impact. But a failed dam flooding into an inhabited area can cause loss of life and costly property damage. State law needs to be changed to ensure public safety in such areas. Prior to the Sun's investigative news story, the state perhaps could claim that the law was being followed and it could defend itself in the event a dam failed and caused damage. But now that the problem has been revealed, we believe the state is morally bound to address the potential human hazard factor. That is not to say a new law should be written to trample private property rights of landowners. What is needed is a thoughtful analysis of the potential problem and risk to human life and property. A new law should allow the state to inspect high-hazard dams regardless of their age. Another consideration is whether people living in these potentially hazardous locales should be advised of the potential danger. Many, perhaps most, likely are unaware of the risk they face. It is better to address these issues before disaster strikes. The time to get moving on resolving the issue is in the coming General Assembly. Sen. Herron can lead the way on this issue, and we trust that he will.

(Never liked visiting these sites – always afraid of coming away glowing in the dark!)

White Oak Dam fortified

Energy Department upgrades earthen stone structure for worst-case scenarios

By Frank Munger, December 28, 2010, knoxnews.com

Oak Ridge, TN - Department of Energy contractors are wrapping up a four-month, $3.7 million project to widen and strengthen White Oak Dam - which confines radioactively contaminated White Oak Lake - to make sure the earthen-and-rock dam can withstand extreme weather events. After a 2008 inspection, the Federal Energy Regulatory Commission concluded that a super-heavy rainfall over a short period could compromise the dam's structural integrity, and the FERC report recommended a number of enhancements. DEMCO Inc. has been working on the dam improvements since August under a subcontract to Bechtel Jacobs Co., DOE's environmental contractor in Oak Ridge. "White Oak Dam is being upgraded to withstand a rainfall event similar to what was experienced in the Nashville area this past year," Dennis Hill, a spokesman for Bechtel Jacobs, said in response to questions. "The dam is being widened both upstream and downstream to an approximately total width of 200 feet. The slopes are constructed with gravel aggregate, compact clay, shot rock, and armored with rocks large enough to withstand the projected water currents."

The dam was built during the World War II Manhattan Project to prevent discharges from early nuclear operations at Clinton Laboratories (which became Oak Ridge National Laboratory) from free-flowing into the Clinch River and points downstream. The damming of White Oak Creek, topped by state Highway 95, created the lake, which became a large settling pond for the lab's radioactive releases and leakage from nuclear waste burial trenches in the vicinity. The dam has

been rehabbed, modified and upgraded over the decades to better control and measure releases via its concrete spillway. Over time, ORNL's discharges have diminished and the nuclear burial grounds in Melton Valley were capped in recent years to help stem the migration of pollutants. That has allowed the radioactivity in lake-bed sediments to decay to significantly lower levels. The lake, however, remains a Superfund site, and the dam continues to play a protective role. White Oak Dam is inspected on a regular basis, and DOE contractors performed additional checks following the disastrous failure of TVA's flyash-retention pond at Kingston in December 2008. Hill said the latest enhancements are designed to protect against worst-case scenarios, and he emphasized there is nothing to suggest imminent failure. He said the weather-related conditions that the dam is being upgraded to address have never occurred in the dam's history. "Such conditions are extremely unlikely," he said.

Tennessee regulations require that the roadway embankment, which in this case is White Oak Dam, be able to survive the flow produced by a storm that's one-third of the "probable maximum precipitation," Hill said. "Recent dam safety inspections have noted possible failure mechanisms principally at and around the box culvert near the south end of the embankment. Dam failure could potentially involve large-scale release and transport of the contaminated sediments." The dam is visually inspected four times a year by the "facility manager," Hill said. If heavy rainfalls cause the lake level to rise above 749 feet (normal level is 745 feet), additional inspections are performed for several weeks afterward, he said. FERC does an independent inspection of the dam once a year, usually in the fall, and Bechtel Jacobs has done an inspection every five years, he said. Hill said there have been no identified leaks or seeps from the earthen dam, but he also noted that White Oak Dam is not designed to permanently hold back the water. "It is constructed with a spillway that allows flow of water out of the lake," he said.

(Maybe this will give the dam removal crowd ammunition to push for dam removal based on being able to ship goods by other means.)

Barge traffic on hold as Snake River dams undergo maintenance

By Tracci Dial, Jan 2, 2011, klewtv.com

LEWISTON, ID - The Corps of Engineers is replacing the downstream navigation lock gates at The Dalles, John Day and Lower Monumental dams between now and March. The gates range in size from 350 to 1,000 tons, and will require 12 to 14 weeks to install and test. Locally, that stops barges from moving upriver during the busiest time of the year for the Port of Lewiston. "It's a busy time of year, there's probably at least four grain barges per week and then a couple container barges per week this time of year," said Lewiston's Port manager David Doeringsfeld. "Normally this time of the year there's quite a bit of peas and lentils and grain that are moving through. Agricultural products as well as timber products from Clearwater Paper that would normally be going through the river this time of year." So those commodities have to find a new means of traveling.

"Due to the closure we've been working over the last year with the railroad to be able to pre-position containers up here to be able to provide containers on rail service during this time period," said Doeringsfeld. "However, even with pre-positioned containers up here, that'll probably be only maybe a third of the normal volume we'd have during that time period." This kind of stoppage has never happened before. A lot of the area's dams have been around for 50 years and the useful life of the gates are nearing their end. Doeringsfeld said there's been a lot of planning in the past year to make sure this extended lock closure goes smoothly. "We'd like to compliment the steam ship lines that provided containers up here, as well as the local short line railroad, the Great Northwest Railroad, who worked with the Class A railroad to provide customers rail service out of the port," said Doeringsfeld. "This hasn't happened out of the port for container on rail for five or six years, if not longer. So I think going back and looking at this opportunity, maybe the closures provided the catalyst to be able to look at more opportunities for container on rail." Doeringsfeld said it opens the door for longer term opportunities to utilize the rail service for container transport to places like the Puget Sound. The gate replacement projects should be completed by March 18th.

Hydro

(The stuff one finds when laboring over info on the internet – accuracy not checked!)

Hydropower Facts

A compilation of some hydropower facts which will tell you why it is being considered to be the best alternative for the replacement of fossil fuels as our primary source of energy. Continue reading for more information on some lesser known attributes of hydropower generation.

By Abhijit Naik, 12/28/2010, buzzle.com

In simple words, hydropower is the power or energy generated by harnessing moving water of rivers and streams. When these rivers flow downstream making their way to the ocean basin, they have a tremendous amount of kinetic energy stored in them. In course of hydropower generation, this kinetic energy of flowing water is harnessed and converted into electricity - which is eventually used for various purposes. The electricity produced by hydropower plants is referred to as hydroelectric power or hydroelectricity. Hydropower is considered to be the cheapest and cleanest among various alternative energy sources. What is surprising though is the fact that even though environmentalists consider it to be one of the best alternative energy sources, layman seems to be oblivious about basic hydropower facts which show how promising it is.

Hydropower: Interesting Facts

Over the last few years, hydropower has come up as one of the major alternative sources of energy in the world - with developed countries like the United States of America, Canada and China leading the way for other nations to follow. Around 20 percent of the total power generation in the world is attributed to hydropower as of today. (The same in the United States of America is 10 percent.) Given below are more of such hydropower facts which show how promising this source of energy is.

- The use of hydropower can be traced back to ancient Greece wherein watermills were used to grind wheat and make flour. The kinetic energy of flowing water was converted to mechanical energy and used to power the watermills.
- One of the less known hydroelectricity facts is that it made its debut in the United States on 30th September, 1882, when the Wisconsin hydroelectric power plant - the first of its kind in the US was built on the Fox River in Wisconsin.
- Hydropower doesn't release greenhouse gases in the atmosphere like fossil fuels do. The amount of electricity produced by hydropower prevents the burning of 22 billion gallons of oil or 120 million tons of coal every year.
- Hydropower also boasts of being the largest renewable source of energy on the planet. If all the sources of renewable energy are combined, hydroelectric power would account for 97 percent of the total energy generated by these sources.
- Hydropower plants have an edge over their coal counterparts in terms of efficiency as well. While hydropower plants can convert 90 percent of the total energy available into electricity, coal plants can only covert 50 percent of the available energy into electricity.
- A modern-day hydropower plant is divided into three parts - the electric plant, dam and the reservoir. The reservoir is used to store the water, the dam is used to control the flow of water and the electric plant is the place where electricity is produced.

- Yet another interesting fact about hydroelectric energy generation is that it is the cheapest source of energy on the planet. While most of the investment revolves around the construction of reservoir, water is available free of cost. Most of these hydropower stations tend to recover their set up cost within 8 years of starting operation.
- The reservoirs created for the development of hydropower plants support a wide variety of recreational activities including boating and sport fishing. More importantly, the advocates of this source of energy argue that the same facility can be used to support various species of birds and animals.
- The critics of hydropower don't seem to be impressed with this, as they argue that construction of such huge reservoirs of water doesn't just damage the ecosystem but also puts the population in its vicinity at risk as the chances of this reservoir giving away cannot be ruled out.
- While the largest hydroelectric power station in the world - the Three Gorges is located on the Yangtze river in China, the largest hydroelectric power station in the United States of America - the Grand Coulee Dam is located on river Columbia.

Going through that compilation of hydropower facts must have made you realize why it is being pitched as the best possible replacement for fossil fuels. It is very important to get a good understanding of these hydropower facts, for kids especially - as the onus of saving the planet will be on them tomorrow when the need of resorting to some alternative source of energy will be even more urgent. Even though the advantages of hydropower make it seem quite promising hydroelectric energy advantages and disadvantages are weighed against each other, we can't afford to ignore the disadvantages that it has. There is no doubt about the fact that hydropower has tremendous potential, but we'll be able to make the most of this potential only when we find some solution to its disadvantages.

(This is significant because it's a pumped storage project)

FERC releases Eagle Mountain hydroelectric project draft environmental impact statement

December 28, 2010, pennenergy.com

Source: Federal Energy Regulatory Commission

The Commission Staff prepared a draft Environmental Impact Statement (EIS) for the licensing of Eagle Crest Energy's (Eagle Crest) proposed 1,300-megawatt Eagle Mountain Pumped Storage Hydroelectric Project (project). The Project would be located on the site of the inactive Eagle Mountain mine, in Riverside County, California, near the town of Desert Center and would operate as a closed system and would not be located on a perennial river.

Eagle Crest used the Traditional Licensing Process and filed the license application for the proposed project on June 22, 2009. The project would occupy nearly 1,059 acres of federal land managed by BLM and an additional 1,162 acres of private lands. In its license application, Eagle Crest proposed measures for aquifer and seepage monitoring (and any necessary remediation for water quality and quantity), construction constraints for air quality control, limiting light pollution during project operation, and measures to protect terrestrial resources such as the federally listed desert tortoise, and the development and/or implementation of management plans that cover a range of resources, including: (a) water quality and quantity; (b) wildlife habitat enhancement; (c) vegetation; (d) wildlife; (e) recreation; (f) aesthetics; and (g) cultural resources. Commission staff evaluated Eagle Crest's proposal, and recommendations made by state and federal agencies, in the draft EIS.

The draft EIS includes Commission staff's recommended alternative, which consists of measures included in Eagle Crest's proposal, as well as additional recommendations made by state and federal agencies, and some measures developed by the staff. The deadline to comment on the

draft EIS is Monday, February 28, 2011. Read the full FERC Eagle Mountain Draft Environmental Impact Statement (PDF)
(Web page for complete notice: http://edocket.access.gpo.gov/2010/2010-32660.htm)
[Federal Register: December 28, 2010 (Volume 75, Number 248)], [Notices], [Page 81643]
From the Federal Register Online via GPO Access [wais.access.gpo.gov], [DOCID:fr28de10-144]
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Department Of The Interior, Bureau of Reclamation
Hydropower Resource Assessment at Existing Reclamation Facilities--Draft Report

Agencies: Bureau of Reclamation, Interior.

Action: Reopening of comment period for review of the Hydropower Resource Assessment at Existing Reclamation Facilities Draft Report (HRA).
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Summary: The Bureau of Reclamation is reopening the review period for the HRA for another 30 days from the date of publication of this Notice. The notice of availability of the HRA was published in the Federal Register on November 4, 2010 (75 FR 67993). The public review period was originally to end on December 6, 2010. Dates: Submit written comments on the Draft Report on or before January
27, 2011.

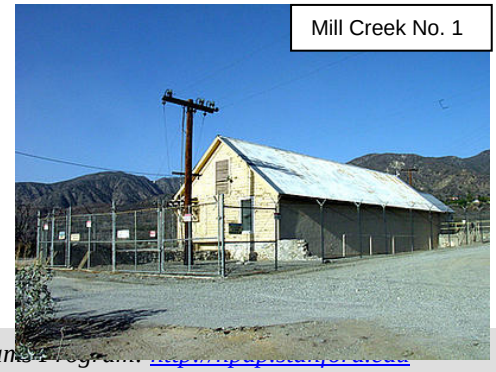
(Hydro history in California)

A LOOK BACK: Men who brought power to Inland area

By Nita Hiltner, Special to The Press-Enterprise, January 1, 2011, pe.com

Though the world credits Thomas Edison for bringing light and power to homes and businesses, the world standard for power generation in the 1800s was created by engineers and capitalists in the Inland Empire. The San Bernardino Valley and other inland areas were responsible for powering homes all across Southern California. Almarian William Decker, who had come to California because of his tuberculosis, created a single system for the Redlands Light and Power Company in 1893 that would power electric home lights and electrical motors across long distances, something Edison, Nikola Tesla and George Westinghouse had failed to do. The first hydroelectric plant in California was built in Highgrove (Riverside) in 1887 by Gustavus Olivio Newman, a Riverside Water Co. engineer. Another plant was built in San Bernardino in 1888. In 1891, Decker was hired to be engineer for the new San Antonio Hydroelectric Power Plant in Pomona, which had a much greater flow of water from Mount Baldy for power. Decker advocated three-phase power, but Westinghouse refused to use it. "Decker's work enabled rapid expansion of the efficient use of A /C power and long-distance transmission," said Mark Landis, a scheduling manager for Southern California Edison. He said Decker wasn't in history books because in those days there was an East Coast bias in the press. "Much more so than today," said Landis. Power was transmitted from the Pomona plant 29 miles to San Bernardino, a world record. Henry Fisher, of Redlands, an oil man, invested his money in the new electric industry to develop hydro power for industry and profit. H.H. Sinclair, a Redlands rancher /grower, needed ice refrigeration for the citrus industry, and a cheaper way to run compressors rather than with wood that had to be hauled from the mountains. Decker developed the specifications for the three-phase generator and motor, which used the ability to both transmit power long distances and then step down the power to safely be used in homes.

The Redlands group became profitable, and Sinclair and Fisher formed the California Light and Power Company. They used Decker's engineering ideas to build a Santa Ana Power Plant, which was the foundation for Southern California Edison, as the Redlands power company and the California Light and Power Company merged. Sinclair remained involved


Mill Creek No. 1

in Southern California Edison for decades and was involved in finding a location and early plans for the Hoover Dam. Fisher went on to bring electricity to Redlands' city railway company, which was later sold to Henry Huntington. Mill Creek No. 1 power station, built by the Redlands Light and Power Company, was Decker's last project. As Decker helped build the Mount Lowe mountain railway, he became sicker and sicker. The railway opened in July 1991, and Decker died mainly in obscurity Aug. 3. The original Highgrove plant burned down in 1915, although its foundation still sits on Iowa Avenue. In its day, it generated enough power for 15 arc lights in the cities of Colton and Riverside.

(This one gives a backhand to FERC)

Lock and Dam 16 may become hydroelectric site

Mike Ferguson The Quad-City Times | January 2, 2011, qctimes.com

MUSCATINE, Iowa — Lock and Dam 16 near Muscatine could be the site of a hydroelectric project. But it won't be anytime soon. It takes federal regulators at least three years — working their fastest — to grant licenses for hydroelectric projects. Free Flow Power Corp. of Gloucester, Mass., said it intends to file a notice next week with the Federal Energy Regulatory Commission. The notice is for five proposed hydroelectric projects in the U.S. Army Corps of Engineers Rock Island District, including Lock and Dam 16. Another company, Symbiotics LLC of Rigby, Idaho, submitted an application — separate from Free Flow's — for a preliminary permit to study the site in April 2010. Jon Guidroz, Free Flow Power's project development director, said such filings are "place-holders," indicating a company's potential interest in studying a project's feasibility. If it's approved and built, the project would utilize hydrokinetic turbine generators within the river channel adjacent to the Lock and Dam structure. Hydrokinetic technology, Guidroz said, can produce hydroelectric power from moving water without a dam or diversion.

A series of turbine generators would be located within the river channel adjacent to the Lock and Dam structure. The project would require connection to existing power transmission lines. The renewable energy the project produces becomes part of electric grid, so it can be transmitted where it can be used. Guidroz, who's based in New Orleans, said Free Flow Power has been investing in the lower portion of the Mississippi River. Guidroz is currently overseeing 88 projects. Of the nation's 77,000 dams, about 2,100 have hydroelectric capacity. After looking at those 77,000 dams, "Lock and Dam 16 went to the top tier of the list" in the company's list of projects it hopes to develop, he said. Guidroz described the Federal Energy Regulatory Commission process as "very open," with filings and studies posted at the commission's website, www.ferc.gov. Free Flow Power must pay for any studies that the commission deems appropriate to grant a license. The initial studies will cost up to $100,000. If the company deems the project is feasible, the study's cost will go up to about $500,000. The project would involve construction of a powerhouse near the Lock and Dam, but it would be small, Guidroz said — about 120 square feet. "We try to have as little environmental and visual impact as possible," he said. "We try to integrate with what's there. " According to the Application for Preliminary Permit, these initial studies are planned for the proposal:

- An information review, including engineering and "as built" records from the 1937 construction of the dam
- Hydrologic studies to help determine the flow available for power generation
- A review of alternatives to maximize the power generated and minimize the environmental impact
- Preliminary engineering and design based on the proceeding work

- Energy generation and cost estimates for typical, dry and wet years, together with a tentative permitting and construction schedule
- A feasibility analysis, which includes a forecast of wholesale power prices, financing costs and operation and maintenance costs.

Those six reports will take about a year, the application indicates. If the feasibility study is favorable for building the project, it will take another two years to consult with interested parties and begin “scoping activities” required by the commission to grant the license.

Environment

(I guess if a sea lion was as tasty as salmon, their death sentence would be for a good cause.)

Group urges tougher measures to remove sea lions

A group advising the federal fisheries service says a program to remove or kill sea lions that eat imperiled salmon near Bonneville Dam hasn't been effective at saving the fish.

By Phuong Le, Associated Press, seattletimes.nwsource.com

Seattle, WA — A group advising the federal fisheries service says a program to remove or kill sea lions that eat imperiled salmon near Bonneville Dam hasn't been effective at saving the fish. In its three-year review released last week, the group made up of fishermen, tribes, state agencies and others urged the National Marine Fisheries Service to ease rules so more California sea lions can be trapped, removed or shot from land and boat. The report comes as the federal agency is deciding whether to appeal a court decision last month that halted the program. In 2008, the federal government allowed Oregon, Washington and Idaho to kill the hungriest of the sea lions that preyed on salmon and steelhead at the base of the dam east of Portland, Ore. So far, 27 sea lions have been killed, while 10 were relocated to zoos or aquariums. The fisheries service gave the states permission to kill up to 85 a year until 2012.

The Humane Society of the United States had challenged that decision, and the 9th U.S. Circuit Court of Appeals ruled in November that the federal government failed to explain why it let state officials kill sea lions, while humans are allowed to take comparable or larger catches of endangered salmon and steelhead. The agency has until early January to decide whether to appeal or take other action, Garth Griffin, branch chief of the fisheries service's protected resources division in Portland, Ore., said Tuesday. In its review, the task force said the current program was able to reduce the sea lions take of endangered salmon to between 2 and 3 percent, down from 4 percent in 2004, according to 2010 estimates. But the program goal was less than 1 percent. "More animals must be trapped in order to be removed," the group said. It recommended more traps and more staff available to work the traps seven days a week. A majority of the group also recommended that more sea lions should be shot from land and boat, and that areas where the animals could be hauled out and shot should be increased. None of the 27 animals killed so far were shot, though states currently have the authority to do so from land, Griffin said. The group of experts first met in 2007, and recommended actions to the fisheries service, including capturing and killing specific animals. "It's a very valuable document in that they went through very carefully everything that's happened in the last three years," Griffin said of the report.

North Coast Salmon Count Encouraging

12/29/2010, ksro.com

A recent Chinook salmon survey is giving Fish and Game officials reason to smile. The latest count showed over 2,300 chinook have made their way up to the Van Arsdale Dam near Potter

Valley, CA more than four times last year's count and the highest number since 1945. The results are leading to guarded optimism about the future of the species, which is listed on the federal "threatened" list. Officials say efforts to restore North Bay rivers may have played a role in the apparent chinook comeback.

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1/14/2011

Some Dam – Hydro News™

and Other Stuff

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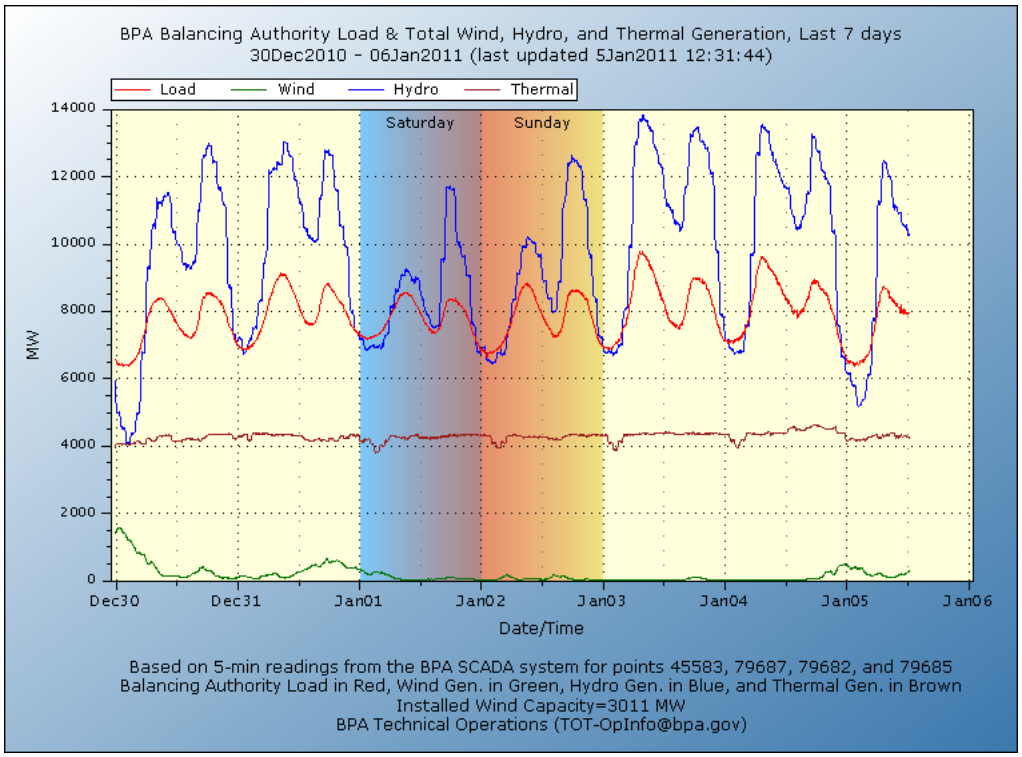
Quote of Note: *"He who laughs last hasn't got all the facts." --Anonymous*

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **Artesa Elements Red Blend 2006**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

Other Stuff:

(Below is the basic text & graph sent to me via a friend of a friend in the Northwest – what wind? Note that installed wind capacity is over 3,000 MW!)

Quote from email - "It has been below freezing in our neck of the woods for the last week. We have wind turbines all over the place. The greenies voted to require them to be built. The power from wind turbines costs many times more to produce than power from dams. The graph below illustrates the amount of wind power produced over the last week. Hint: it is the little green line at the bottom of the graph…"



Copy obtained from the National Performance of Dams Program: http://npdp.stanford.edu

Dams

(This is an interesting site compiled on the history of Lake Murray near Columbus, SC – with the historical photos it's worth a look!)

DREHER SHOALS DAM

Lake Murray Dam near Columbia, South Carolina

Web site: *http://www.lakemurray-sc.com/drehershoalsdam.html*

(Learning from the original dam builders)

Conservationists Could Gather River Restoration Tips From Beavers

by David DeFranza, Washington, DC, 01 4.11, treehugger.com

When engineers are called in to restore degraded streams and rivers, the focus is typically on reestablishing flow. This requires the dismantling of old dams, dredging, and the rebuilding of valley bottoms. These human engineers, a new study suggests, would be better off taking advice from natures' own landscape-altering builders: beavers. The pools and ponds created by beaver dams, it turns out, are essential sources of biodiversity and centers of river health. Melinda Daniels, an associate professor of geography at Kansas State University, explained: *"A lot of rivers are in trouble and need work and restoration, but it's amazing how little we know about the systems we're trying to fix...we know they're broken, but we don't exactly know what they should look like because we know so little about how many of our river system's function."*

Her research suggests that leaving dams—even man-made dams—in place or partially in place, allows the critical ecosystems they have allowed to develop continue to flourish. Such ponds would simulate the natural effect of beaver dams in areas that do not benefit from them. Engineers "can use these natural analogs to produce an ecosystem that looks a lot more like the one that was there before the colonists arrived," Daniels said, add that "we can restore rivers in a way that mimics the naturally diverse beaver streams, and we can save a lot of money in the process." Though a bit counter-intuitive, it's a lesson from nature that seems to benefit everyone.

(No mention of hydro which might help pay the cost of repairs)

Great Dam study could take a year to complete

Committee to pick firm within a month

By Aaron Sanborn, seacoastonline.com, January 04, 2011

Exeter, NH — The Exeter River Study Committee will likely recommend a firm to conduct a feasibility study into the possible removal of Great Dam within the next month. Town Engineer Paul Vlasich said the committee reviewed six proposals from firms that responded to the town request for proposals (RFP). The town met with two of those firms in mid-December and is getting cost proposals. "There is no set time frame for a proposal selection but I'm

expecting that within the next month we'll have a firm that we'll be recommending," Vlasich said. Voters approved a warrant article last March to spend $100,000 for the purpose of studying the feasibility of removing the Great Dam, and approved of acceptance of a watershed assistance grant in the amount of $60,000 from the N.H. Department of Environmental Services (DES) to offset the total.

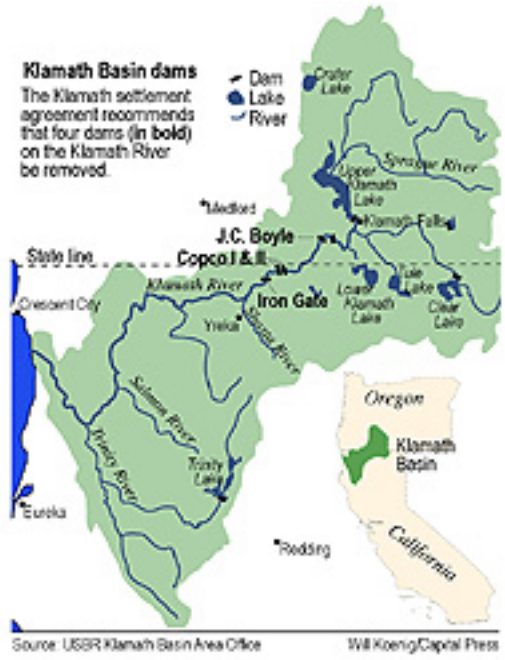
The feasibility study will provide town officials and voters with further information as they consider potential dam modifications or removal. Either option will need to be completed in the future as the dam does not meet state safety requirements for passing flood flows and is listed as deficient by the state. Some of the deficiencies noted by the state include deteriorated concrete, small leaks/seeps through the penstock intake and the dam's inability to pass the runoff resulting from a 50-year precipitation event. The cost to modify the dam is estimated at approximately $1.3 million. To remove the dam is would cost an estimated at $962,000. The study — which may take nine months to a year to complete — will include a historical analysis, wetlands evaluation and archaeological surveying. This study will look at all aspects of impacts, costs and benefits of dam removal. The dam removal study will look at upstream impacts on wetlands and recharge areas, water levels, recreation and erosion. It will also look at downstream impacts to landowners along the river and with respect to water quality changes in the Squamscott River and the Great Bay.

(Some people just don't see the futility in fighting a lost cause)

Siskiyou County swims upstream on dam removal; opposes demolition

By Dylan Darling, January 8, 2011, redding.com

Rex Cozzalio of Hornbrook is adamant that removing the dams along the river flowing past his home won't improve conditions for salmon. But stakeholders in the contentious Klamath Basin aim to remove the dams as part of an agreement to help salmon, bring stability to irrigation supplies, and curb debates over water. "They are going to devastate the Klamath River," said Cozzalio, 57, who has lived on 30 riverside acres all his life. Siskiyou County leaders share Cozzalio's opinion on keeping the dams. While more than 40 groups — farmers and ranchers, American Indian tribes and environmentalists — support removal, the county that's home to three of the dams wants them to stay. Last year the groups signed agreements to explore dam removal, with demolition beginning in 2020 if it's determined to be best for salmon. "We think the solution is to put fish ladders around them and keep the dams," said Jim Cook, a Siskiyou County supervisor.



PacifiCorp, the Portland, Ore.-based company that owns the dams, isn't specifically supporting their removal, but it is trying to find a solution that will cost its ratepayers the least amount of money, said Art Sassie, company spokesman. He said the cost of removing the dams would be less than building ladders or other systems to move fish around them. "The agreement has the framework for dam removal, and we are in support of that agreement," Sassie said. PacifiCorp is weighing whether to keep the dams or add improvements to allow salmon to swim from the Pacific Ocean to spawning grounds along the Klamath River and its tributaries in Siskiyou County. The dams block salmon from 300 miles of spawning habitat, according to reports. Removing the dams and funding restoration efforts likely would cost $450 million, said H.D. Palmer, spokesman for the California Department of Finance. The company would pay $200

million, Palmer said, and $250 million possibly would come from the state's 2012 water bond. PacifiCorp has estimated that building fish ladders would cost at least $460 million, according to the Federal Energy Regulatory Commission. The dams turn the river into a string of warm-water pools that breed toxic algae and fish-killing bacteria, said Craig Tucker, spokesman for the Karuk Tribe. The tribe, which holds rights to fish for salmon along the Klamath River, is among the groups that signed the agreements. "We've been fighting to get to those dams out for years," Tucker said. The U.S. Interior secretary is set to decide by March 2012 whether to go ahead with the dam removal or not, The Associated Press reported.

Cozzalio — whose family has been on the Klamath for four generations and lives near Iron Gate Dam — isn't convinced that removing the dams would revive the river. He said salmon struggled to maintain a run up the river because of low summer flows when the dam wasn't there to regulate water. "Before Iron Gate went in, I could walk across the river in midsummer and not get my feet wet. I'd just hop from rock to rock," he said. Power companies built the dams along the Klamath River from 1908 to 1962. Iron Gate Dam, the tallest on the river, at 173 feet, was the last finished. The dams produce 150 megawatts, enough power for 70,000 homes. That's enough, said Siskiyou County supervisor Cook, to power most of Siskiyou, Del Norte and Humboldt counties. And the dams provide flood control. Cook said he understands why tribes and commercial fishermen want to build a better salmon run. But, like Cozzalio, he said he doesn't think removing the dams would make that a reality. He said the county didn't sign the agreements because the focus was on dam removal and not other options. "There are other options," Cook said. Dam removal looks to be the best option, said Glen Spain, northwest regional director for the Pacific Coast Federation of Fishermen's Associations. The group is among those that signed the agreements. He said the stakeholders are meeting regularly, gathering last month in Redding and planning to do so again in Eureka in February. Spain said Siskiyou County's participation has been limited to attempts to stop dam removal. "They are throwing every barrier they can in the process," Spain said.

Hydro

(With all the turbine/generator expertise in the U.S., these dunderheads are flying in someone from Europe. Well, at least, maybe the wine will be good. They did give some work to a U.S. company!!!!!!!)

Italian expert sought for dam work

Hydroelectric Station: Potsdam's village administrator seeks European consultant for stalled project

By Larry Robinson, Johnson Newspapers, watertowndailytimes.com, January 4, 2011

Potsdam, NY — The village's lifeless hydroelectric station on Maple Street will remain empty until at least spring, when an engineer from Italy will be flown in to help thread together the main components of the long-delayed project, according Village Administrator David H. Fenton Jr. In recent months, trustees have been purchasing parts for the stalled project directly from suppliers in the United States, Canada and Europe rather than give more money to Canadian Turbines Inc. owner Richard Kuiper. The facility on Fall Island has sat empty and roofless for roughly two years, after Mr. Kuiper failed to deliver the key parts needed to make electricity. Village officials said in November they were on target to have most of the larger components delivered by this time so they could button up the empty building for the winter months. But Mr. Fenton told trustees Monday that there would be additional delays to finish some of the parts, and to hire someone with additional technical expertise to install the main turbines, generators and other components. Those delays mean work on the dam project is effectively being put on hold until spring. "So, realistically, the full assembly of the plant won't be happening until March or later,"

Mr. Fenton said. Mr. Fenton is recommending the additional cost of flying over an engineer from the Italian city of Genoa, where turbines for the Potsdam dam are being manufactured. He said he believes it will be worth the approximate cost of $1,000 a day — not including airfare — to have the turbine expert on hand when the final installation of parts takes place.

In addition, Mr. Fenton also is in talks with Laframboise Group Ltd., an industrial construction firm with offices in Quebec, Ontario and Massena. He said that company, too, could play a key role in pulling the final hydro project together once all of the parts are on site. "Putting those two pieces with Mr. Sheehan's corporation, and the assets we already have in place, we are hoping that that will give us a trouble-free installation and a plant that, once it's installed, is going to work right," Mr. Fenton said. Following Mr. Fenton's update Monday, trustees unanimously approved a payment of $47,775 to the Hazleton Casting Co. in Pennsylvania for wicket gates and bearings needed for the hydro station. The board also approved a $17,330 payment to R&F Precision Tool, Brantford, Ontario, for other hydro parts. The stalled dam originally was slated to begin making electricity in August 2008, according to village officials. The project ground to a halt after Canadian Turbines Inc. failed to make good on a $1.3 million contract with the village. The total cost for the West Dam facility is $3.5 million. Village officials have spent about $317,000 on acquiring missing parts needed for the project since November, according to Mr. Fenton.

Tygart hydro-electric project seeks license to build plant

By Emily Corio, wvpubcast.org

January 5, 2011 · A developer of a West Virginia hydro-electric project plans to apply for a license this year to build the plant. It's been more than six years in the making for Cliff Phillips of Advanced Hydro Solutions, a Cleveland-based company, but he sees the end goal. "We're really anticipating early in 2012 getting our license and starting construction on the Tygart project probably at the end of third quarter 2012, with commercial operation beginning before the end of 2013," Phillips said. Advanced Hydro Solutions is holding a meeting Thursday in Bridgeport with state and local officials about a range of studies the company had to conduct before it can apply for a license from the federal government to build the 28 megawatt hydroelectric plant on the Tygart Lake Dam in Grafton.

Phillips says in the years that the project has been in development, the price of renewable energy has decreased. "We're trying to be as cost effective as we can, and when we're competing against the depressed market in coal and the extremely low market for natural gas, most utilities are turning on natural gas now, that's who our competition is," Phillips said. "Even though we can get a credit for being green, we still have to look at the base energy price, and it's difficult at this time. We need this economy to pick back up." Phillips says the project is helped by more utilities looking for renewable sources of energy generation to sell to consumers and a tax break in the federal stimulus bill. "It gives these projects 30 percent investment tax credit; that is a straight refund of 30 percent of your project from the federal government," Phillips said. "That really has helped make these projects extremely financially viable." Tygart is one of the company's three projects. The other two are further along in development and include a plant near Pittsburgh and one on the border of West Virginia and Maryland. Phillips says the company recently received financial backing from a private equity firm in the Cleveland area which will allow Advanced Hydro Solutions to develop its projects to the point of construction before it needs to seek additional funding.

(Is this a desperation move or serious business?)

Alcoa makes case for Yadkin River dams

By TRAVIS FAIN, journalnow.com, January 07, 2011

Alcoa will spend $10 million this year to spruce up its Badin Works site in North Carolina and is looking for new industry to locate at the old aluminum smelting plant, a company executive says. The improvements will be made regardless of whether Alcoa keeps its license to operate a series

of electricity-generating dams along the Yadkin River, said Kevin Anton, an Alcoa vice president and the international corporation's chief sustainability officer. The company also plans to donate 1,000 acres to Morrow Mountain State Park, Anton said. Anton was interviewed after a closed meeting Wednesday in Mooresville with members of the Yadkin Riverkeeper watchdog group. That meeting and others are part of a new strategy for Alcoa, which is fighting to keep its federal operating licenses along the Yadkin. The company recently lost the support of the state's Department of Environment and Natural Resources after regulators learned of a series of e-mails that they believe show Alcoa consultants misled DENR about water quality in the Yadkin. Alcoa needs the state to OK a new water-quality certificate for Alcoa to win a new 50-year federal license. Anton said he has been in meetings around North Carolina with the company's supporters and detractors. He said Alcoa wants to listen to people's concerns and make the case that "we're committed to North Carolina, we're committed to Badin." The company also plans to roll out a toll-free telephone number early next week so people can call Alcoa with concerns, he said. Many people in Stanly County, where the Badin Works was once the area's largest employer, tell stories of illegal dumping stemming from Alcoa's operations. Some believe there's a link between chemicals used at this plant and others Alcoa operates and cancer in former employees and their families. Asked Wednesday whether Alcoa has been a good corporate citizen in North Carolina, Anton said environmental and workplace safety regulations have changed drastically over the decades that Alcoa has operated here. He said Alcoa "will continue to be on the leading edge of that" and will "take accountability for what our forefathers have done."

Dean Naujoks, the Yadkin Riverkeeper, said Wednesday's meeting was not productive. Alcoa, he said, was promising compliance on various environmental issues, including the amount of dissolved oxygen in the Yadkin River. That's the issue the state jumped on late last year when e-mails came to light making it seem that Alcoa was hiding the fact that oxygen levels aren't always within mandated ranges. Alcoa's dams pull water from deep within man-made lakes, where oxygen levels are lower. That water is sent downstream, lowering oxygen levels there, which is a problem for fish and other animals. "It was good to get to tell them what we felt, how we felt about their dishonesty," Naujoks said about Wednesday's meeting. “But the meeting as a whole was not very productive." Naujoks said Alcoa did provide a cancer study the Riverkeeper had been after, calling it limited progress. Anton declined to comment on specific meetings or to say who else he has met within North Carolina. He spoke generally about the meetings, which he said started about two weeks before Christmas. That's about the same time Gov. Bev Perdue told reporters that she was through negotiating with Alcoa over its license. Perdue wants the state to win the right to operate the dams. "Tell them not to call me," the governor said at the time.

(Over the long haul, there’s no such thing as an uneconomical hydro project – the energy is free! You just have to be patient.)

Water power pays off for cities

Hastings is among seven Minnesota cities and two counties that own hydroelectric plants.

By Jim Adams, Star Tribune, startribune.com, January 9, 2011

At the lock and dam above Hastings, the mighty Mississippi plunges down and through the wicket gates to spin 5-foot blades in underwater turbines, which power generators that produce green electricity -- and cash. The river town is one of seven Minnesota cities with a hydroelectric plant, and it is probably the most profitable. Since plant debt was paid off in December 2009, the 4-megawatt plant has earned about $450,000 for the city and is expected to contribute $600,000 in 2011, said Finance Director Char Stark. "It was a big dream when they opened it in 1987," said Public Works Director Tom Montgomery. "It was almost a white elephant for the first decade. Some years we were in the hole, some years we barely broke even." A few years of drought in the 1980s didn't help hydro production, added city Public Works Superintendent John Zgoda. He said the plant, nestled between the U.S. Army Corps of Engineers' locks and dam, produces enough electricity to serve about 3,000 of Hastings' 5,500 homes. The city sells its power to Xcel Energy.

So does St. Cloud's plant, more than 100 miles up the Mississippi. That 8.5-megawatt plant is the largest city-owned hydroelectric plant in Minnesota, according to the Department of Natural Resources (DNR). St. Cloud generates more than twice as much power as Hastings, the next largest city-owned plant. St. Cloud is still paying off its plant debt but has built up a healthy reserve fund. The 22-year-old plant is expected to contribute, for the first time, about $300,000 to city coffers this year, said Public Service Director Patrick Shea. "The city is at the beginning of the hydro utility starting to pay off," Shea said. "Green energy has only become more valuable as we move forward." Hydro power is generated by capturing the energy of falling water. Minnesota has plenty of lakes and rivers, but it has few of the tall falls needed to economically produce large amounts of electricity. About 1 percent of the state's electric power is homegrown hydro. According to the DNR, Minnesota has more than 30 hydroelectric plants ranging in size from Lanesboro's tiny 230-kilowatt plant on the Root River to Minnesota Power's 70 megawatt plant fed by the St. Louis River in Carlton County. Minnesota Power, a division of Allete, is the state's biggest hydro producer, with 11 plants that produce a total of 115 megawatts in northeastern Minnesota, according to its website. The largest water power plants in the Twin Cities are the 17-megawatt Ford Dam plant, run by Brookfield Renewable Power of Massachusetts, and Xcel Energy's 12-megawatt plant on Hennepin Island at the upper St. Anthony Falls. Brookfield plans to open a new 9-megawatt plant this year at the lower St. Anthony Falls lock and dam.
During the permit approval process for the Hastings plant, the DNR recommended that it be a run-of-the-river plant, said Ian Chisholm, a DNR natural resource program supervisor. That means if the Mississippi drops too low, the Corps of Engineers directs plant operators to stop pulling water from the river, or pull less of it, to keep the level higher. That aids aquatic life and barge traffic. Chisholm said that the benefits of hydro power must be balanced against environmental concerns caused by dams that fragment river ecosystems and cause sediment buildup, including pollutants, behind dams. The other four Minnesota cities with hydro power are Rochester, Granite Falls, Redwood Falls and Thief River Falls. Those four plants range from 2.3 to 0.6 megawatts in size. Two Minnesota counties have their own hydro facilities, including a 2.4-megawatt plant on Lake Byllesby in Dakota County, fed by the Cannon River. It is owned primarily by Dakota County and was refurbished and reopened in 1988, said Michelle Beeman, county director of environment and natural resources. It was built about 100 years ago, as was the 6-megawatt Rapidan Dam plant in Mankato, owned by Blue Earth County. The Hastings plant started making money after improvements completed in the late 1990s and after the 2001 river flooding that inundated the plant, Montgomery said. He said the federal and state government paid for 90 percent of the more than $3 million in repairs and upgrades made after the flooding. The improvements left the plant in good shape for about 50 years, Zgoda said. He noted the plant made money last year, even though one of its two turbines was down for five months while a leaky water seal was repaired.

(It would be a surprise if you didn't need an FERC license or exemption!)

Is removal best option for Niles dam?

DNR official to address city panel Monday.

By LOU MUMFORD, *Tribune Staff Writer,* January 10, 2011, southbendtribune.com

Niles, MI — Is removal the best option for the old Niles city dam? The state of Michigan — specifically, the fisheries division of the state Department of Natural Resources — seems to think so. Jay Wesley, district fisheries biologist for the DNR, is expected to make that point when he appears before the Niles City Council at 6 p.m. Monday in the council meeting room at the city fire station, 1345 E. Main St. His appearance will serve as a preview of possible developments concerning the dam, which has been unused for the better part of the last two decades. A pair of developers looking to re-energize the facility approached the city last year with proposals to do just that. The firms, one in Grand Rapids and the other in Arizona, proposed partnering with the city and sharing the revenue that would result from electricity sales. Legal questions prompted the council to hold off on either proposal. Since then, other proposals have been introduced, one by a group that wants the dam removed and the other by a northern Indiana company, Falling Waters LLC, that intends to use in-water turbines to convert kinetic energy to generate power. Contacted

last week, Wesley said Niles might best be served by the dam's removal. The DNR has assisted with the elimination of 10 dams in southwestern Michigan over the last 10 years, he said, adding that removal allows for greater fish movement, better water quality and less sediment.

Asked about the cost, he said Watervliet had two dams removed at no cost to the village. The entire $500,000 tab was covered by three grants the village managed to secure with assistance from the state, he said. As for the state's authority to order the removal of the dam in Niles, Wesley said it can do so if the dam is deemed a safety hazard. "It almost failed in 2008, when there was a flood. So it has issues," he said. Niles City Administrator Terry Eull, however, said repairs were made following the flood and a subsequent inspection revealed the dam to be safe. The city is required to have the dam inspected every two or three years, he said, adding he's not aware of any current issues. As for costly fish ladders that might be necessary should the dam be put back into operation, Wesley said the DNR would request one through the Federal Energy Regulatory Commission. But the request would be binding only if the dam would require licensing by FERC. Eull said it's his understanding a license isn't needed, but Wesley said he's not certain that's the case.

Water:

(No – it's not the civil war revisited, but close!)

North vs. South—Carolina States Settle Water Dispute Without Supreme Court

January 4, 2011, circleofblue.org, Circle of Blue WaterNews

A negotiated agreement ends a three-year conflict between North Carolina and South Carolina over the Catawba and Yadkin rivers.

Two southern states have reached an out-of-court agreement on using water from shared rivers, *Bloomberg* reports. South Carolina Attorney General Henry McMaster announced the settlement with North Carolina over the Catawba River, which keeps the dispute out of the U.S. Supreme Court. Although the current dispute has ended, the agreement does leave the door open for future lawsuits, however, if water use or water demand change significantly from the conditions under which this deal was negotiated—including drought. Named by American Rivers as the most endangered river in the United States in 2008, the 300-mile Catawba River starts in the Blue Ridge Mountains of North Carolina and turns into the Wateree River in South Carolina, eventually emptying into the Atlantic Ocean. It serves as a 10-mile natural border for the Carolinas. The dispute centers on water diversions in North Carolina that divert millions of gallons each day out of the Catawba Basin, which is used by more than 30 cities and 17 counties for industry and drinking. Over one million people depend on the river for drinking water, while the energy and manufacturing industry—which utilize the river for power generation and cooling—employ thousands. Tens of millions of dollars are generated by several coal, nuclear, and hydroelectric power plants along the river. Though the deal does not set limits on water withdrawals, it does lay out a process for assessing any future water transfers and sets standards for reducing water use during droughts. Other components of the deal include updating a basin water supply study every 10 years. "We are pleased to report that this settlement addresses the fundamental question of [inter-basin transfers], raised by the litigation, in a fair manner for everyone," McMaster said in a press release. "Through the terms of the settlement, both North and South Carolina will be close neighbors rather than a plaintiff and defendant in a lawsuit."

The case has cost South Carolina over $3 million since McMaster first took legal action in 2007, when North Carolina officials approved inter-basin transfers of an additional 10 million gallons per day for two suburbs of Charlotte, the region's fast-growing urban hub. The city was already withdrawing 33 million gallons per day, in addition to other transfers by industry in the area totaling 40 million gallons per day. Before the current agreement, North Carolina's Environmental Management Commission was able to do approve the transfers without notifying downstream users and without doing an assessment of the environmental effects. Now, South Carolina—which passed a law this year requiring permits for large water withdrawals—will be notified of any transfer proposed by its upstream neighbor, and an environmental impact statement must then be prepared. When the Supreme Court began hearing the case in 2009, it ruled that third parties Duke Energy—an energy company operating 11 hydroelectric dams in the Catawba Basin—and the Catawba River Water Supply Project—a basin water user—could join the lawsuit, but the city of Charlotte could not. The deal, signed last week by all parties, was based on one written by Duke Energy in its application for dam relicensing with the Federal Energy Regulatory Commission.

Army Corps: More time needed on northern Colo. dam

By Monte Whaley, The Denver Post, 01/04/2011, denverpost.com

Another delay in the permitting process for a controversial dam project in northern Colorado confirms that the water storage proposal is a huge mistake, according to an environment group. The U.S. Army Corps of Engineers is saying that the supplemental draft environmental impact statement for the Northern Colorado Integrated Supply Project — or NISP — is being pushed back into the latter part of this year. The impact statement was originally to be released in June 2010, but was then delayed until this summer. The impact statement is important because it could signal the start of NISP.

NISP calls for the Cache La Poudre River to be diverted during high-flow periods to fill two reservoirs, Glade Reservoir northwest of Fort Collins and Galeton Reservoir east of Ault. Current estimates put a $490 million price tag on the project. Proponents of the project say it is needed to support the water needs of a growing region. Opponents say it will wreck the Cache La Poudre. Army Corps Projects Manager Chandler Peter said today more time is needed to weigh the complexity of NISP. "This has turned into a complex and time-consuming process," Peter said. Every delay gives cities invested in NISP a chance to look at other opportunities to secure water from other sources, said Gary Wockner of Save the Poudre, a NISP opponent. "We believe that water conservation, cooperating with farmers, and projects that don't dam or drain the Poudre will be cheaper, faster and easier, and would help guarantee water supply security for these cities," Wockner said.

(Another benefit of dams)

Entergy Reduces Flow from Remmel Dam in Response to Drought Conditions

KARK 4 News, 1/6/2011, msnbc.msn.com

Dry weather conditions in the Ouachita River watershed are prompting Entergy Arkansas to implement its Drought Contingency Plan for Lake Hamilton and Lake Catherine in Garland and Hot Spring counties. Entergy says with water becoming scarce, it must respond appropriately. Since the construction of Remmel Dam in 1934 and Carpenter Dam in 1931, Entergy Arkansas has been entrusted by the federal government to manage water flow through the Ouachita River watershed. This has meant dealing with water flows in times of floods, drought and everything in between. Entergy's Drought Contingency Plan allows a reduction in the continuous minimum flow normally required from Remmel Dam into the Ouachita River to conserve water in Lake Ouachita. According to the NOAA's Palmer Hydrological Drought Index, the Ouachita River watershed in Garland and Hot Spring counties have been in a moderate drought condition since October of this year. "Though we are not in a severe drought conditions yet, many of the surrounding counties

are, and we are taking the necessary steps to mitigate the impacts on the area lakes." said Bobby Pharr, process superintendent for Entergy's hydro operations. The long-range forecast calls for normal to slightly-above-normal rainfall in January, so conditions may improve. Lakes Hamilton and Catherine are currently in an annual winter drawn down to facilitate shoreline maintenance and inspection and to control nuisance aquatic vegetation. "We do not anticipate this flow reduction from Remmel Dam affecting the levels of lakes Hamilton and Catherine at this time.

This action will assist the refill of Lake Ouachita, which is lower than normal." said Pharr. During the summer, Lake Ouachita's level slowly falls through hydroelectric generation. This water is then passed through Lakes Hamilton and Catherine and used again for hydroelectric generation at Entergy's Carpenter and Remmel dams. Lake Ouachita then is allowed to refill during the winter months through rainfall. To conserve water, Entergy began restricting generation in October at Remmel and Carpenter dams, but was able to maintain a minimum flow from Remmel Dam, as required by the license from the Federal Energy Regulatory Commission. Conditions are now such that it is necessary to reduce the flow from Remmel dam below the normal minimum.

Environment:

(No wonder CA is on the brink of bankruptcy – they don't know what a renewable looks like! Duh, any hydro is renewable – it's California that has a problem. California that needs a reality check.)

No Double Standard for Green Power in San Francisco

restorehetchhetchy.blogspot.com, January 4, 2011

Officials in San Francisco have stated they want to meet 100% of their electrical demand with renewable power within a decade (see New York Times article). It is a laudable goal, but to reach it they would have to classify their generation from large hydroelectric plants as "renewable", something disallowed by State regulations. Essentially they want special treatment that is different from other California utilities. They want a double standard. Let's be clear. San Francisco has made important progress on the energy front. They have invested substantially in solar power and energy conservation. And after a long struggle, they have recently shut down their last in-city fossil fuel plant on Potrero Hill. But they would like to count the hydropower they generate in the Sierra Nevada at three sites – Moccasin & Kirkwood along the Tuolumne River and Holm on nearby Cherry Creek - as renewable. No other utility in California is allowed to classify hydropower facilities over 30 megawatts in size as renewable, and San Francisco should be no exception.

The debate over how to classify hydropower in California arose several years ago during the discussion of how to apply a "Renewable Portfolio Standard" to require utilities to generate more environmentally friendly power over time. The role of hydropower was debated. Some insisted that hydropower emits no pollutants and is in a sense "renewable". Others argued that hydropower facilities have devastated fisheries and ruined rivers, so they should not be included. The compromise (albeit imperfect) was to classify any facility over 30 MW as"non-renewable" and any facility under 30 MW as "renewable". This compromise has been accepted by all, except apparently by some officials in San Francisco. Of course, this is not the first time that a double standard would apply to San Francisco. They are after all the only water agency allowed to operate a major reservoir in a National Park. But in addition to continuing to store water in Hetch Hetchy Valley and deny generations of Americans the opportunity to appreciate its splendors, they want special dispensation in how they classify the hydropower generation from the project. For those who have not followed the effort to restore Hetch Hetchy Valley in Yosemite National Park, it worth knowing that removing the dam or simply draining the reservoir would diminish the amount of water delivered to the Bay Area by only about 4% and the amount of hydropower

generated at the 3 plants by 20% - see reports by Environmental Defense Fund, UC Davis, Restore Hetch Hetchy and others. Replacing these resources would be challenging but is eminently doable and well worth the effort to make Hetch Hetchy Valley and Yosemite National Park whole once again. Let's tell San Francisco to play by the same rules as everyone else.

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

1/21/2011

Some Dam – Hydro News™

and Other Stuff

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Quote of Note: *"Don't worry about avoiding temptation as you grow older, it will avoid you." -- Winston Churchill*

"Good wine is a necessity of life." - -Thomas Jefferson

Ron's wine pick of the week: **Bodegas Nekeas El Chaparral de Vega Sidoa Old Vines Grenache 2008**

"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

Other Stuff:

(Excerpts – this ran before in the news)

U.S Outlook for Renewable Energy Employment in 2011

Jan 10, 2011, renewablepowernews.com

In America the growth of the clean energy industry is expanding at a rampant pace. Green energy employments are being spurred across the nation. America's unemployment figures are getting worse as the clock ticks by. In regions such as California the unemployment rate has reached 22 percent. Such grim figures haven't been experienced since the Great Depression. Recent statistics suggest that 30 million people are looking for employment. In modern economies, the clean energy industry is shining through as other industries are failing. Renewable energy jobs are having a hike. In overcoming the threat of increasing unemployment clean energy jobs are saving some. Here are some figures:

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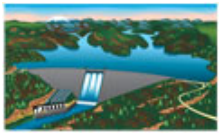
5. Hydro Power – Long-term employment growth

Hydropower generates the highest portion of renewable energy in America. It does currently account for approximately 7 percent of U.S energy needs. On average for each megawatt installed 2 to 3 full time equivalent workers are needed. For the 100,000 MW of hydropower capacity in the U.S 200,000 to 300,000 direct jobs has been secured. Navigant Consulting made a research scrutinizing how many jobs could be created if hydropower was expanded through national schemes. In fact, the industry could generate as much as 1,400,000 jobs if strong national RES (25% by 2025) was introduced. This would include 280,000 indirect jobs, 420,000 direct jobs and 700,000 induced jobs (both indirect and direct jobs). Currently 400 GW of hydropower remains untapped. The development of hydropower projects will result in various

jobs; shoreline development; design and modeling, permitting, regulatory studies, licensing, manufacturing; project construction and other related jobs.

Millions of Jobs Could Flourish when the Green Industry Grows
It is hard to estimate accurate figures for the renewable industry. It is a new and emerging market. Nonetheless, more than 2.5 million people will at least be work for the clean energy industry by 2025. This means that 8 percent of the 30 million unemployed people in America would have employment. Yet, it is true that other changes will occur in the meantime. The sector can grow even more in terms of the number of employees. (Full article: http://www.renewablepowernews.com/archives/2128)



Dams

(American Rivers bragging right! Another view of dams! Personally, the after photo isn't too impressive.)

2010: A Dam Removal Retrospective

January 10, 2011, Serena McClain
Director of River Restoration Program, americanrivers.org


Marsh Creek, ME, before Montsweag Dam removal


Marsh Creek after. Photos by Dan Creek

Throughout 2010 we reported back to you on exciting dam removals happening all across the United States. From the removal that helped keep a local company from laying off employees to the restoration of more than 333 miles of habitat on the mighty Rogue River in Oregon, rivers across the country once again sprang to life. Our year-end survey reveals that these are just two of the 59 dams that were dismantled in 14 states. Curious how your state fared?

- Pennsylvania once again outpaced other states with 30 removals, continuing to demonstrate its commitment to dam safety and restoring access to historic spawning grounds for migratory fish.
- Partners in Maine undertook three dam removal projects this past year, including the long-debated removal of the West Winterport Dam on Marsh Stream.
- The first two dams of an effort aimed at restoring the main stem Patapsco River in Maryland were removed.
- Massachusetts and Michigan had a strong showing with the removal of five dams per state.
- New Hampshire, Ohio, Oregon, Rhode Island and Vermont each removed two dams that were no longer serving a useful purpose.
- California, New York, North Carolina and Virginia each eliminated one dam from their state's waterways.

Check back to view the full list when we release it in the next couple of weeks. Also, if you don't see your state listed above but know of a dam that was removed in 2010, feel free to leave us a comment about it. http://www.americanrivers.org/newsroom/blog/2010-a-dam-removal-retrospective-1-10-2011.html

(To raise or build a new dam – that is the question?)

Dam debate nearing resolution?

Water authority calls May safety deadline "challenging"
By Chiara Canzi, Issue #23.02: 01/11/2011 - 01/17/2011, c-ville.com

Will the new year finally bring a resolution to the controversial water supply debate? After Black & Veatch recently offered City Council its latest cost estimates for the city's competing Ragged Mountain dam proposal, the Albemarle County Board of Supervisors proposed a meeting between the two localities to discuss their differences. "I am committed to [a resolution]," says Supervisors Chair Ann Mallek. "We don't have an option to fail here. That's why we have been trying to take baby steps forward all along." However, baby steps may turn to bigger strides. In November, Virginia Soil & Water Conservation Board capped temporary operating permits for two Ragged Mountain dams at six months, essentially giving the Rivanna Water & Sewer Authority (RWSA) until May to select dam safety measures and procure construction permits to address an insufficient spillway. RWSA Executive Director Tom Frederick called the deadline challenging, "even if a decision were made immediately on a specific initial pool height for a new earthen dam. "Every day we lose by not deciding will further reduce the likelihood of success," wrote Frederick in an RWSA update to county supervisors.

Black & Veatch's updated estimates were good news for City Council, which prefers a phased increase to the Ragged Mountain Dam reservoir pool. Peak construction estimates for Ragged Mountain Dam now stand at $13.5 million to $19.5 million—a $1.2 million increase from the previous high-end projection. A 13' reservoir raise would cost between $10.8 million and $15.5 million. In October, Albemarle County authorized Schnabel Engineering to proceed with a final design for a new earthen dam, which the firm put at $28 million to $36 million. Last week, Black & Veatch engineer Greg Zamensky told City Council that his firm's dam proposal will "be safe and satisfy dam safety criteria." Frederick asked council whether it was worth taking the time to determine if the city's alternative to the 2006 plan—phased dam construction and maintenance dredging at Ragged Mountain Reservoir—was cheaper while construction costs are low. "The earthen dam design is far more advanced, which means there has been far more investigations and there are less uncertainties," he tells C-VILLE. "Uncertainties can sometimes become hidden costs that add to the cost of an alternative that may not be reflected in early assumptions." City Council is expected to vote on whether to proceed with a final design for a phased Lower Ragged Mountain Dam construction in the next month. While Albemarle supervisors declined an offer from the Department of Environmental Quality (DEQ) to mediate a city-county water plan discussion, Mallek says she still anticipates a meeting between the two governing bodies. "[Supervisors] did not feel that it was advantageous to get into a mediation situation with the DEQ. That's not their role. They are deciders, not the people who make the application," she says. "I am really looking forward to conversations in the next week or so, and we are hopefully to the point that we can resolve things."

(This may be an important article, but why do they quote American Rivers as dam specialists when they're NOT! They're just using the opportunity to get rid of dams. The State dam safety personnel are the experts. They should be the sole source of information.)

100 major dams need repair, state auditor says

Aging stock poses 'significant threat'

By Peter Schworm, Globe Staff / January 12, 2011, boston.com

One hundred major municipal dams across the state are in poor condition and could cause significant property damage if they failed, the state auditor's office reported yesterday, renewing calls for stricter oversight. The two-year investigation concluded that the state's aging and neglected stock of dams poses a "significant threat to public safety'' and needs an estimated $60 million in repairs. More than one in five potentially hazardous public dams have substantial

structural deficiencies, the report found. Auditor A. Joseph DeNucci called on the Legislature to establish a no-interest loan program to help communities pay for the repairs. “These are difficult times, but some prudent budgeting and financing now could avert a major crisis in the future,’’ he said in a statement that accompanied the report. He noted that delaying repairs would sharply increase their cost.

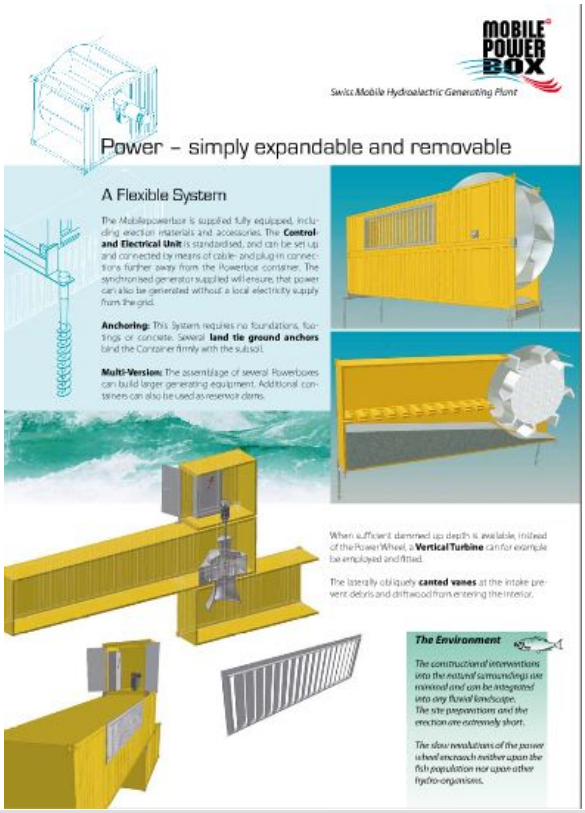
Dam specialists, who have criticized town and state officials for failing to maintain dams, said the report underlines the scope of the problem and the need for swift action. “The situation is getting worse and worse,’’ said Brian Graber, director of river restoration for American Rivers, a national conservation group. “These failures are becoming more common.’’ In February, residents in Freetown were urged to evacuate when rising water levels threatened to breach a dilapidated dam, which has since been torn down. The next month, a section of a Canton dam collapsed, flooding an apartment complex and forcing street closures. “We’ve seen what can happen,’’ said Alison Bowden, freshwater program director at the Nature Conservancy in Boston. “Somehow, we need to make some decisions to deal with this, because it’s a pretty big problem.’’
In the report, state inspectors rated six dams as unsafe, the lowest category of safety. Two are in Foxborough; the others are in Athol, Bolton, Danvers, and Dudley. Sixteen of the deficient dams assist in flood control for the surrounding areas. Cities and towns are responsible for maintaining their dams, with state oversight. A spokeswoman for the state’s Office of Dam Safety said yesterday that repairs on many of the dams have begun or are in the works. “We’re well aware of the problem,’’ said Wendy Fox. “We are paying close attention to the dams in the worst condition.’’ Counting privately owned dams, there are 254 high- or significant-hazard dams in Massachusetts classified as poor or unsafe, Fox said. A breach at a high-hazard dam would be likely to cause serious property damage and possibly claim lives, according to state regulators. Failures at significant-hazard dams might cause serious damage. State officials would take immediate action if dams posed an imminent threat, Fox said. A Globe story in March found that 60 high-hazard dams were in poor condition, and half of those had not been inspected in the previous two years, as required under state law. Many privately owned dams had not been maintained for years.

Marc Pacheco, a Taunton state senator who has called attention to the need for dam repairs, said the fragile condition of many dams threatens public safety and should be a pressing concern to government officials. Budget-crunched cities and towns often defer repairs, he said, to finance more immediate priorities. “People should be very concerned about it,’’ he said. Pacheco said he would file legislation this month that would establish a repair fund, identify dams that should be removed, and tighten state oversight. The report called on regulators to rank the 100 dams in order of risk to prioritize repairs. Communities with the highest number of deficient dams included Fitchburg, Foxborough, Attleboro, Springfield, and Worcester. Local officials said they were working with state regulators to schedule repairs. “We are going to peck away at the ones that need the most work,’’ said Lisa A. Wong, the mayor of Fitchburg, which has six dams in poor condition. “We are not going to let them fail.’’ Wong said some of the dams would probably be removed, a solution supported by many environmental groups. “Many of these dams were built for industry decades or centuries ago and are no longer used for that purpose,’’ Graber said. “The most cost-effective and permanent way to deal with unsafe dams is to remove them.’’ The report found that most towns with deficient dams had not made emergency plans in case of a breach, and one in four communities said they had “no idea of what to do in an emergency.’’ Among the 37 largest dams, eight had emergency plans on file with state regulators.

Hydro

(You can buy a hydro project to take it with you. Note: To read slides, see attached PDF.)

The First Mobile Mini Hydroelectric Power Station



(Wow, what a novel idea – hydro at any size is "renewable"!)

Bill Would Count Existing Dams as Renewable Energy

Montana legislators consider expanding renewable energy standard to include existing dams

By Matt Volz Associated Press, Helena, Mont. January 11, 2011 (AP), abcnews.go.com

State lawmakers are considering a bill that would make it easier for utilities to meet the standard for renewable energy production, a proposal that conservationists say would make the standard meaningless. The measure sponsored by Republican Sen. Debby Barrett, of Dillon, would allow electricity produced by large hydroelectric facilities to count toward state renewable resource requirements. Montana utilities are required to procure 10 percent of their retail electricity sales from renewable resources. That jumps to 15 percent in 2015. State law now counts only smaller hydroelectric facilities of 10 megawatts or less toward those requirements. Barrett's bill would make all existing dams and hydroelectric facilities eligible renewable energy resources, as long as they are not federal facilities. About 40 percent of Montana's electricity comes from hydroelectric power, and the proposal would add approximately 1 gigawatt of existing power to the state renewable energy standard, said Kyla Wiens, an energy advocate for the Montana Environmental Information Center The bill would add so much hydroelectric power that companies required to comply with the standard would not have to develop any new resources for the next 20 years, she said. "This bill would essentially make the existing renewable energy standard meaningless," Wiens said. "If all this hydro power is added, there's no need to get any new renewable energy."

Barrett said the intent of the bill is to recognize that water is a renewable resource, and the measure should not be a disincentive to developing wind power or other renewable resources in the state. "If Northwestern (Energy) or anybody else can afford to develop it on a level playing field, they should go ahead," Barrett said. "I would like a product produced economically so we can purchase it economically." Barrett said she believes the incremental increases in the renewable energy standard are "smoke and mirrors" that ensures certain companies can make money while the taxpayers subsidize their renewable energy initiatives. Northwestern Energy, the state's largest utility, did not immediately return a call for comment. The Senate Energy and Telecommunications Committee planned to hold a hearing on the bill Tuesday afternoon.

NHA president Munro plans new year

January 11, 2011, By Lynne Lynch, Herald staff writer, columbiabasinherald.com

Ephrata, WA - National Hydropower Association President Andrew Munro discussed the association's hydropower goals and what the new Republican majority Congress means to the association Friday. Munro is currently serving his second term as the association's president. He is also employed with Grant County PUD as the district's external affairs director. This year, the association's external goals involve positioning hydropower as a preferred and renewable resource and to double hydropower capacity and jobs in the next 20 years, he said. Munro also wants to advance a smarter licensing and permitting process to expand hydropower capacity. "I call this a two-year process that is in line with a typical timeline for other resources a utility or entity would want to develop," he explained. Within that timeline, there would be no need to change laws such as the Endangered Species Act or Clean Water Act. The NHA is asking the government to function more effectively. Smarter licensing permitting is going to be a big effort this year, he says.

"We've been doing the steps leading up to this," he said. "My first goal, the doubling of hydropower, there is a big opportunity here. The second goal, in order to help us achieve that, is asking for government and all players to work smarter." The association's third external goal is to have a sustained, strategic communications effort. "If you read the Wall Street Journal and talk to decision makers in DC, hydropower may not be the first thing they think of," he said. "We want to change that." The NHA strives to provide facts and information to the public, so they can

appreciate hydropower. To do so, the association is about to launch a new Web site. The NHA is also hiring an employee to handle communications in-house after several years of contracting the work. He mentioned the Hydropower Improvement Act of 2010, which was jointly introduced by Sen. Lisa Murkowski, R-Alaska, and Sen. Patty Murray, D-Wash., with four other co-sponsors. Based on this year's new makeup of Congress, the NHA is evaluating the priority issues in that act, which was introduced in 2010. NHA is considering whether or not to try to get the bill introduced in the House and the Senate, as the House passed an energy bill last year. Munro also responded to the change in the Republican control of the House and the new leadership role of Rep. Doc Hastings, R-Wash., as the Natural Resources Committee's chairman. "This is excellent news for Grant County, Eastern Washington and all of the region," Munro said. The Natural Resources Committee has jurisdiction over energy, future energy and natural resources the NHA is working to protect, he said. "We're happy and pleased he's been selected as chairman," Munro commented. "It's a good opportunity for Eastern Washington that's going to benefit the interest of our customers and utility. He's been one of the strongest supporters of hydropower in the U.S. Congress." Munro cited an example of Hastings' help in passing the Energy Policy Act of 2005. Munro also called Hastings well-respected by his peers in Washington, D.C. and very effective in hydropower issues.

(This tactic has been tried so many times, you finally lose count. Now, maybe it's settled.)

Challenge to FERC Hydro Stance Nixed

Federal court agrees with agency on Klamath call

By Todd H. Cunningham | ECT Staff Writer, January 12th, 2011, ect.coop

A federal appeals court has rejected a challenge to the Federal Energy Regulatory Commission's refusal to impose conditions on a utility's annual license for a hydroelectric project in the Pacific Northwest. The dispute over PacifiCorp's Klamath Hydroelectric Project involves "one small episode in [the] larger story" of reconciling demands on natural resources, the court said in its Dec. 28 opinion in Hoopa Valley Tribe v. FERC. The tribe challenged FERC's denial of its petition to include new ramping rate and minimum flow requirements in annual licenses for the hydroelectric project on the Klamath River in Oregon and California. The tribe contended the conditions were necessary to protect its Klamath trout fishery. FERC found that the fishery was sustaining "certain adverse effects" from the project. It concluded, however, that the fishery was "nevertheless thriving" and was under no threat of irreversible environmental damage. The commission said that without the threat of irreversible damage, it examined any request to impose interim license conditions "essentially in the same manner as if [it] was being asked to reopen the license." Applying the "unanticipated, serious impacts" standard, the court noted, FERC concluded that there were no such impacts in this case and that interim conditions were not necessary for the Klamath Project.

In its opinion, the judicial panel rejected three challenges to the decision:

- It was not based on a FERC standard. "The commission quite plainly articulated and applied a standard in rejecting the tribe's claims," the court said.
- It required "irreversible environmental damage" as a prerequisite to imposing interim conditions on the project. FERC's rehearing order stated explicitly that it could impose interim conditions even without such a showing, the court noted.
- The "unanticipated impacts" standard adopted in the rehearing order was inconsistent with FERC's precedents and regulations. To the contrary, the court said, the commission had properly exercised its regulatory discretion in adopting the standard.

"Agencies have authority to establish legal standards 'by general rule or by individual, ad hoc litigation," the judicial panel noted. "That is all FERC has done here."

(Important Court decision on FERC land charges for hydro projects located on Federal land)

City of Idaho Falls, Idaho v Federal Energy Regulatory Commission

Case No. 09-1120 (C.A. D.C., Jan. 4, 2011), judicialview.com

In 1987, the Federal Energy Regulatory Commission issued a regulation that used a United States Forest Service rental fee schedule to set annual charges for hydropower projects occupying federal land. Since then, FERC has issued annual updates to reflect the Forest Service's revised fee schedule. In 2008, however, the Forest Service began using a significantly different valuation methodology than the one FERC had reviewed and endorsed in its 1987 regulation. FERC nonetheless used the revised Forest Service schedule when it issued its 2009 update— resulting in substantially higher rates to many licensees. Petitioners and intervenors in this case, a group of hydropower licensees who pay FERC's annual rental fees, challenge the Commission's 2009 update, arguing that it was required to go through notice and comment before it could impose charges according to the revised Forest Service methodology. For the reasons set forth in this opinion, we grant the petition and vacate FERC's 2009 rental fee update.

I.

Under section 10(e)(1) of the Federal Power Act (FPA), 16 U.S.C. § 803(e)(1), licensees of hydropower projects regulated by FERC must "pay to the United States reasonable annual charges in an amount to be fixed by the Commission" to, among other things, "recompens[e] [the federal government] for the use, occupancy, and enjoyment of its lands or other property." FERC and its predecessor, the Federal Power Commission, have utilized various methodologies to set these land use charges. Originally, the Federal Power Commission calculated annual fees through individual project appraisals. *See Update of the Federal Energy Regulatory Commission's Fees Schedule for Annual Charges for the Use of Government Lands* ("Rehearing Order"), 129 FERC 61,095, at 61,430 (2009). When such appraisals proved inefficient, FERC adopted national per acre land values, which it used in combination with an annual rate of return to set land use fees. *Id.* at 61,430–31.

In 1985, the Department of Energy's Inspector General issued a report finding that FERC's methodology led to significant under-collection because it relied on outdated land value averages. *See id.* at 61,431. The Report recommended that FERC revise its regulations so that its fees would reflect current fair market value and also suggested that the Commission cease using a national average that failed to account for land value variations. *See id.* Responding to these and other recommendations and following notice and comment rulemaking, FERC issued Order No. 469, which established a new methodology for assessing annual rental fees. *See* Revision of the Billing Procedures for Annual Charges for Administering Part I of the Federal Power Act and to the Methodology for Assessing Federal Land Use Charges, Order No. 469, 52 Fed. Reg. 18,201 (May 14, 1987). In that Order, FERC explained that it would use the schedule published by the Forest Service to determine rental fees for so-called linear rights-of-way across National Forest System lands. *Id.* at 18,202. A "linear right-of-way" is a "right-of way for a linear facility, such as a road, trail, pipeline, electronic transmission line, fence, water transmission facility, or fiber optic cable." 36 C.F.R. § 251.51.

As described in Order No. 469, the Forest Service methodology was based on a survey conducted jointly by the Forest Service and the Bureau of Land Management (BLM) of market values for the types of land those agencies allowed linear rights-of-way to occupy. *See* Order No. 469, 52 Fed. Reg. at 18,205. Using the survey data, the Forest Service and BLM assigned each county in the United States (excluding counties in Hawaii and Alaska) to one of eight different fee zones based on the county's "raw land values," with values ranging from $50 per acre for Zone One to $1,000 per acre for Zone Eight. *See* Linear Rights-of-Way Fees, 51 Fed. Reg. 44,014, 44,017 (Dec. 5, 1986). To determine rental fees, the Forest Service multiplied the applicable zone values in its index by two additional factors designed respectively to account for the land use impact of different rights-of-way and to provide the government with a reasonable rate of return for using its land. *See id*. at 44,014–16. The Forest Service also included an annual adjustment to account for inflation. See *id*. at 44,017.

Telluride Eyes Micro-Hydro Projects

by Karen James, Jan 13, 2011 | telluridewatch.com

Telluride, CO – As the new solar photovoltaic system at the Telluride Regional Wastewater Treatment Plant gears up to go online to eventually cut the Town of Telluride government's fossil-fuel derived energy use by about 10 percent annually, the town is setting its sights on future renewable energy projects to further whittle away at its carbon footprint. On the drawing board are plans to harness energy from running water through micro-hydropower systems, and the Telluride Town Council learned more about them when it met during a special meeting to discuss its 2011 goals and objectives last week. The first project is a feasibility study of the town's existing wastewater and water systems to determine where it would make the most sense to install turbines to generate electricity. "The goal is to have the whole system analyzed and have most promising locations highlighted…and to learn how much it would cost," said Public Works Project Manager Karen Guglielmone, who anticipated the town will issue a Request for Proposal for the analysis in the coming weeks. As it stands now, valves found throughout the system are used to bleed off pressure from the town's existing, gravity-fed system. "That energy could be used in the right circumstances," she explained. In addition to its ability to generate power using existing infrastructure, retrofitting the existing system for micro-hydro would not require additional staffing for monitoring, would have no adverse environmental impacts, and would not require potentially controversial institutional or public process elements, according to a list of project benefits identified by Guglielmone in a memo to council.

Still, financing for the project, which could reduce the town government's electric use by about 9 percent from 2009 numbers and its carbon emissions by about 6 percent for the same year, could emerge as a potential challenge. The second micro-hydro project slated for completion in the coming year would be to install a continuous discharge monitoring station upstream of the Jud Wiebe Bridge as recommended in the 2009 Stillwell Micro-Hydro Feasibility Study. Its goal would be to obtain real-world discharge data to refine the study's cost-benefit analysis and to better quantify its potential adverse environmental impacts, including drying up approximately 1,800 feet of Cornet Creek and Cornet Falls for a portion of the year. "We have to find out what is the actual discharge in Cornet Creek," explained Guglielmone, who indicated that the existing studies have so far relied on hydrologic modeling. "It would be useful to have more refined data." A first, recommended option being considered by the town would repair an existing diversion dam on Cornet Creek above the falls and run a new, pressurized pipe to a small powerhouse near the Jud Wiebe trailhead. Preliminary production estimates suggest the project could produce between 780,000 and 980,000 kilowatt hours of energy annually, or about one-third of the town government's 2009 electric use. It would also eliminate 22 percent of its 2009 carbon emissions, for roughly $1.1 million. A second option would require a new diversion dam be built on Cornet Creek above the Stillwell adit and replacing the existing water line from the adit with pressurized pipe to the same powerhouse site near the Jud Wiebe trailhead. While the option could potentially produce between 2 and 2.5 million kilowatt hours of energy annually (or 84 percent of its 2009 government electric use to eliminate 63 percent of its 2009 carbon emissions) it would come with a much higher price tag of about $3.3 million. It would also require federal permitting that could add as much as three years to the project schedule. As a result, town staff is not recommending the option be pursued. "The goal would be to have a data logger in place for the flows before this summer season," said Guglielmone.

The town also plans to explore the installation of a micro-hydro system in conjunction with the eventual construction of the Pandora Water Treatment Plant and a power purchase agreement for the electricity generated at the Bridal Veil Power station. Whether or not such an agreement could be reached, however, is really up to its owner, the Idarado Mining Co. The micro-hydro projects would help Telluride's government meet its goal of lowering its 2005 carbon emissions by 20 percent by the year 2020 and help the region chip away at its goal to offset 100 percent of its electrical needs with new, renewable energy sources by 2020 as articulated by Telluride Mayor Stu Fraser and Mountain Village Mayor Bob Delves in their 2009 mayoral challenge to the community known as the Telluride/Mountain Village Regional Renewable Energy Initiative – or Telluride Renewed. "We're looking at every renewable energy source that we can conceivably use here," said Fraser. "It's the only way that we'll be able to achieve the goals that we put in

place." Fraser said that although the amount of power generated by a micro-hydro system will vary based upon the flow of the water feeding it, it can do so 24 hours a day, seven days a week compared to an average of 5.6 hours a day for the WWTP solar array.

Environment

PacifiCorp warns dam removal could be delayed

By JEFF BARNARD AP Environmental Writer, kval.com, Jan 12, 2011

GRANTS PASS, Ore. (AP) — In the first test of the landmark agreement to remove dams from the Klamath River, PacifiCorp formally complained Tuesday it was not properly consulted by federal agencies before they cut river flows that affect power production by the dams. The Portland-based utility warned in a formal notice starting a process to resolve the dispute that they feel the reduced flows will cut their power production below levels set out in the dam-removal agreement. "We're confident that once everyone follows the (dam-removal) protocol, this can be worked out satisfactorily," PacifiCorp spokesman Art Sasse said from Portland. "If these new flow restrictions are imposed permanently, assuming proper (Endangered Species Act) protections are in place, the economic conditions will mean delaying dam removal beyond 2020."

NOAA Fisheries Service, which oversees protections for threatened Coho salmon in the Klamath River, and the U.S. Bureau of Reclamation, which manages releases from Upper Klamath Lake into the Klamath River, imposed cuts in river flows last week to build up lagging reservoir storage so there will be enough water for salmon as well as farmers next spring. Drought conditions last year forced cutbacks in irrigation to leave enough water in the river for salmon. U.S. Bureau of Reclamation Klamath area manager Jason Phillips and NOAA Fisheries Service Arcata, Calif., area supervisor Irma Lagomarsino both said they felt they followed the terms of the Klamath Hydroelectric Settlement Agreement and the latest plan for restoring threatened salmon in the Klamath River. "We want to formulate a way to do this that will not cause financial impact to PacifiCorp," Phillips said from Klamath Falls. "But ultimately we have to comply with the biological opinion from NOAA Fisheries. So we've got to make sure we can balance the two." Low water conditions have long forced conflicts between supplying irrigation to upper Klamath Basin farmers and keeping enough water in the Klamath River for salmon as it flows from Southern Oregon through Northern California. The U.S. Department of Interior is to decide in 2012 whether to go ahead with agreements signed by the states of Oregon and California to remove four hydroelectric dams owned by PacifiCorp that block salmon from hundreds of miles of habitat, restore Klamath Basin ecosystems, and assure water for farmers on a federal irrigation project. Earlier this month, the U.S. Environmental Protection Agency approved California's plan for cleaning up pollution in the Klamath River that are expected to impose new costs on PacifiCorp, farmers, and municipalities.

Brookfield seeks delay in fish plan

Power plant owners ask for second extension to install new turbine

By Larry Rulison Business Writer, January 13, 2011, timesunion.com

Cohoes, NY -- Brookfield Renewable Power is again asking for more time from federal regulators to install a fish-friendly turbine at its 39-megawatt hydro power plant at Cohoes Falls. Under the requirements of its 40-year license issued by the Federal Energy Regulatory Commission in 2007, Brookfield is expected to install the new type of turbine by next year. Fish-friendly technologies are extremely important to both hydro power plant owners and environmentalists who have been seeking to minimize the damage that hydro plants can do to aquatic life. The biggest concern is for American eel, which are vital to the ecosystem and are often killed in hydro plants in large numbers. In 2009, Brookfield asked to delay deployment of the fish-friendly turbine by two years because it was still in development by Alden Research Laboratory in Holden, Mass., which is designing the new technology in conjunction with Electric Power Research Institute. That design process is still ongoing, and on Jan. 6, Brookfield wrote a letter to FERC asking for another extension, this time for three years. If approved by FERC, the new deadline to start construction would be in 2014, with the project completed by 2017.

Brookfield says it has already installed several required fish protection measures at the hydro plant, located off School Street in Cohoes, including a fish-bypass system that takes fish away from the existing turbines at the plant. The company says the new fish-friendly turbine is 12 to 18 months away from being "ready for bid" and full-scale manufacture as Alden evaluates a prototype. Brookfield said it "believes our request for an additional three-year extension of time in which to commence construction of the new powerhouse is reasonable and appropriate." Green Island Power Authority, which is trying to build a rival hydro plant on a nearby section of the Mohawk River in Cohoes, has argued that Brookfield never intends to install the new turbine. Brookfield, a Canadian company that has its U.S. headquarters outside Boston, has denied that and notes that the Cohoes plant was recently certified as being fish-friendly by the Low Impact Hydropower Institute in Portland, Maine.

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

1/28/2011

Some Dam – Hydro News™

and Other Stuff

i

Quote of Note: *"One thing you can give and still keep is your word." - Source Unknown*

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **Chehalem Pinot Gris 2008 Willamette Valley, Ore.**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

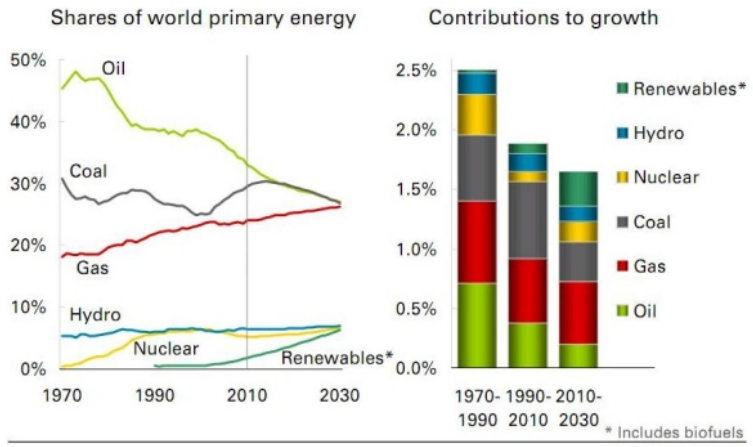
Other Stuff:

(It may be good news for renewables and the natural gas bunch, but not too much to celebrate for hydro. I hope BP lists hydro as a separate "renewable" because it's the most important renewable. The PDF Report is full of info.)

BP: Renewable energy to outpace growth of oil

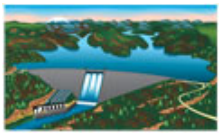
by Martin LaMonica, January 19, 2011, news.cnet.com

Given how many variables are involved, predicting the future of energy with accuracy is difficult. But BP's annual Energy Outlook, which came out today, is a closely watched indicator for the state of the energy industry.



The BP Energy Outlook 2030 (click for PDF) forecasts energy sources will diversify more in the future, with a bigger role for renewable, nuclear, and hydropower. Demand will continue to grow around the world, with developing countries consuming a larger share of energy. Energy growth

was mostly met with increased use of fossil fuels over the last 20 years. In the next 20 years, BP expects that solar, wind, geothermal, and biofuels will contribute a higher percentage--an 18 percent contribution to energy growth from 2010 to 2030, compared to 5 percent of energy growth from 1990 to 2010. BP also forecast what portion renewables will play in primary energy--that is, energy sources before they are converted to a usable form such as electricity or liquid fuels. It predicts that renewable energy will go from less than 2 percent of primary energy use now to more than 6 percent in 2030. One of the assumptions in BP's projections is that energy efficiency will improve significantly, particularly in OECD (Organisation for Economic Co-operation and Development) countries, and that governments around the world will adopt regulations to limit greenhouse gas emissions. But BP Group Chief Executive Bob Dudley said that BP, which advocates a way to put a price on carbon, is not optimistic about policy movement. "Our base case assumes that countries continue to make some progress on addressing climate change, based on the current and expected level of political commitment. But overall, for me personally, it is a wake-up call," he said in a statement. The BP projection assumes continued economic growing, leading to primary energy growing by 1.7 percent per year, or nearly 40 percent over the next 20 years, with much of that growth coming from non-OECD countries. Among fossil fuels, BP expects that natural gas use will grow faster than coal and oil, which it says reached peak demand in 2005 in OECD countries. Higher efficiency in transportation will contribute to slow growth of oil use, while BP expects that biofuels will represent 6 percent of liquid fuels in 2030.



Dams

(Here we go again! What has 50 - 60 years of debate done to the cost – it is now only **23 times** more expensive. How come construction costs go up **4 times the rate of inflation**?)

New Life for the Auburn Dam Project?

John Lobertini, fox40.com, January 14, 2011

Auburn, CA — For five, maybe six decades now, the Auburn Dam project has been a Hot-Button issue like few others in Northern California. Year-in and year-out water escapes the American River because there's no place to store it. An Auburn Dam could be the answer. But as Mark Twain once wrote: "Whiskey is for drink'n and water is for fight'n over." "If this was a dam this would look like Shasta Lake," it's not hard to spring a conversation about the Auburn Dam; but tread lightly. Rick Nicholson, whose lived in Auburn for 30 years, talked about the possibilities as he gazed across an area where a reservoir could one day go, "I see right now it would be a long term boondoggle. No one has ever anted up to say they'd buy the water," he says. The Auburn Dam was approved in 1965. It would've spanned a canyon on the north and middle forks of the American River. At 700 feet high, graphic illustrations found on the internet, show what the dam might've looked like. Talk of the project has stopped and started so many times, most have lost count. $200 million was spent on the Auburn Dam project before construction was stopped in 1980. The Foresthill Bridge stands as a lasting reminder and a monument to an idea that has never really died. But California desperately needs more water storage and Auburn is considered the best of the possibilities. Sightseer Daniel Parker put it this way," Folks want the water to stay here. Sometimes there's a big resentment that Northern California's water ends up in Southern California."

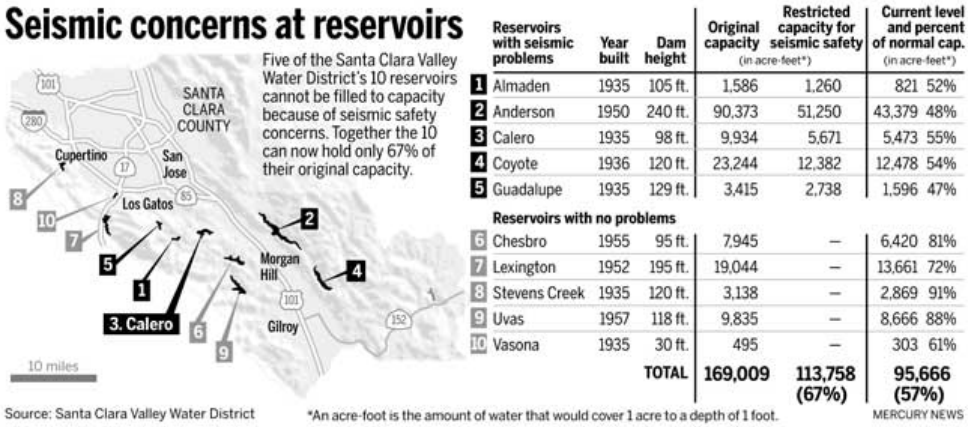
As the new head of the House Water and Power Subcommittee Congressman Tom McClintock now has the political muscle to push the Auburn Dam project through Congress. McClintock was unavailable for comment, but the Republican from Elk Grove told a local newspaper, "Ultimately, it will be constructed. The only question is if it's built in time to prevent the calamity." The calamity he refers to is a major flood in Sacramento. Before the Hurricanes of 2005 hit New Orleans, Sacramento was considered the most at-risk flood city in America. But

environmentalists and geology could block the flow of progress. ”It’s got an earthquake fault where they want to build it. And, that’s reason enough right there,” reason enough not to build it says Mike Reitmeir of West Sacramento. Originally pegged at $428 million, today’s cost for the Auburn Dam could be as much as $10 billion; and years of waiting. The water debate is becoming more and more critical because there’s so much at stake. The Delta is fading fast, the out of state water--that helps feed--Southern California is running out and farmers are parched because their water allowances are being cut. But if an Auburn Dam Project gains new life; brace yourselves for a bitter fight. Just like Mark Twain said.

(It’s not good if a whole lot of shakin’ goes on)

New seismic problem at Calero Reservoir

By Paul Rogers, 01/19/2011, mercurynews.com



	Reservoirs with seismic problems	Year built	Dam height	Original capacity (in acre-feet*)	Restricted capacity for seismic safety (in acre-feet*)	Current level and percent of normal cap. (in acre-feet*)
1	Almaden	1935	105 ft.	1,586	1,260	821 52%
2	Anderson	1950	240 ft.	90,373	51,250	43,379 48%
3	Calero	1935	98 ft.	9,934	5,671	5,473 55%
4	Coyote	1936	120 ft.	23,244	12,382	12,478 54%
5	Guadalupe	1935	129 ft.	3,415	2,738	1,596 47%
	Reservoirs with no problems					
6	Chesbro	1955	95 ft.	7,945	–	6,420 81%
7	Lexington	1952	195 ft.	19,044	–	13,661 72%
8	Stevens Creek	1935	120 ft.	3,138	–	2,869 91%
9	Uvas	1957	118 ft.	9,835	–	8,666 88%
10	Vasona	1935	30 ft.	495	–	303 61%
			TOTAL	**169,009**	**113,758 (67%)**	**95,666 (57%)**

Santa Clara County's system of 10 reservoirs -- built between the 1930s and 1950s and already requiring earthquake upgrades that could cost $150 million -- received another setback Tuesday. The Santa Clara Valley Water District, which owns and operates the reservoirs, announced that new engineering tests show it will need to further reduce the amount of water it can store in Calero Reservoir in South San Jose. Test drilling underneath the 98-foot earthen dam at Calero, built in 1935, showed sand and gravel under the base of the dam, which engineers worry could shift like quicksand in a major earthquake, possibly causing the dam to slump. Based on recommendations from its engineering consultants, the district said it will fill Calero no more than 57 percent full. On Tuesday, it was 55 percent full. The reservoir already was under an order from the state Division of Safety of Dams to be filled no more than 80 percent. Because of similar seismic concerns, five of the district's 10 reservoirs cannot be filled to the capacity for which they were designed. Adding the latest restrictions on Calero, the 10 reservoirs now are limited to hold no more than 113,000 acre-feet of water, or just 67 percent of the 169,000 acre-feet that they were designed to hold. An acre-foot is about 326,000 gallons, the amount of water it takes to flood one acre a foot deep. That means that even if it rains significantly this year, the water district, which provides drinking water and flood protection for 1.8 million Santa Clara County residents, won't be able to catch it all for future dry years. The lost capacity is enough to provide drinking water for 280,000 people for a year.

"The problem is significant," said Don Gage, newly elected chairman of the water district's board. "You have to understand that these dams are 80 years old. The earthquake standards back then were not what they are today. We are going to have to shift dollars in our capital improvement programs from other projects to these dams." Gage said that fixing all five reservoirs that need seismic upgrades -- Anderson, Coyote, Almaden, Calero and Guadalupe -- could cost $150 million or more. That means money the water district was planning to spend on other projects, such as desalination or potential flood-control work, could be delayed. Repairing Anderson, the largest, could take six years or more, he said. In major earthquakes, dams can slump from the top, causing massive floods. Although such disasters are rare, they can be deadly. The failure of

the St. Francis Dam north of Los Angeles in 1928, for instance, sent a 125-foot-high wall of water roaring through several communities near Santa Clarita, killing more than 450 people. To reduce risk, water engineers typically lower the level of water stored behind dams that may have safety concerns. That not only puts less pressure on the dams, but it also decreases the chance that water will pour over the top of a slumping dam. Most of the restrictions in Santa Clara County began in 2006, when new geological studies showed shaking from earthquakes on the Calaveras Fault, which runs from Hollister to Milpitas, and several smaller faults nearby could be stronger than seismologists previously realized.

In 2009, the district hired URS, an engineering firm based in San Francisco, to conduct a $3.3 million study of the problem. URS engineers are using drilling machines, barges and other heavy equipment to take geologic samples at the dams, then evaluating risk with complex computer models. Calero is one of the smaller reservoirs in Santa Clara County. It was built to hold 9,934 acre-feet. Under Tuesday's new rules, it will be filled to no more than 5,671 acre-feet. "We're taking a very conservative approach to safety. That's the No. 1 concern," said Marty Grimes, a spokesman for the water district. "We'll keep the water level that low until we can establish that the dam can withstand the maximum credible earthquake on that fault."

(A history on what a dam failure can do even when it's a small dam. The location of many dams puts people in harm's way and that is not obvious to many downstream. This dam created a reservoir or two reservoirs (not clear) with storage of only 122 acre-feet.)

Disastrous Dam Failure in Connecticut Eleven People Killed

Jan 21, 2011 Julia Adamson, suite101.com

Danbury CT 1875 - *Photo credit Wikimedia Commons*

Eleven died January 31 when freezing waters behind the Upper Kohanza dam caused it to burst sending a deluge of icy water through Danbury, Connecticut

"The most terrible disaster that has ever occurred in Danbury happened last night, destroying a number of lives and much property," reported the New York Times. The Kohanza Reservoir released its icy waters killing eleven people within the first half hour at 7:00 pm on, January 31. A deluge of water carrying rocks, trees and large ice floes burst through the town of Danbury, Connecticut taking with it houses, businesses and demolishing three bridges entirely.

Danbury, CT History

Eight families first settled in the area nicknamed Swampfield as early as 1685. The first hat factory was established in 1780, and by 1860, the Danbury museum reports that there were 12 hat factories employing upwards of 2,000 hatters. The community of Danbury quickly grew to over 7,000 residents by 1860, and close to 9,000 by 1870. The Lower Kohanza earth fill Dam was built by the residents in 1860. This earthen dam was 336 feet (102 m) long by 27 feet (8.2 m) in width. The reservoir created contained 40 million gallons of water. In 1860 residents built their water lines out of wrought iron, wood, and cement to supply the town of Danbury with water from the reservoir located 3 miles (4.8 km) away.

The Hatting Capital of the World

The hatting industry rendered beaver fur into felt by boiling it down with water and mercury. The felt could then be shaped into hat forms. The hatting industry waste, along with the town's waste followed the newly constructed sewage system into the Still River. City historian, Bill Devlin reported that acids, dyes, fur wastes along with the city's waste created typhoid and cholera epidemics. At this time about 1.5 million hats were created each year. Soon Danbury would be nicknamed The Hat City or The Hatting Capital of the World. Danbury was growing exponentially. The rail lines were bringing in coal to fuel the factories and homes. by 1865, the residents of

Danbury realized they needed more clear water. The Upper Kohanza earthen dam was constructed.

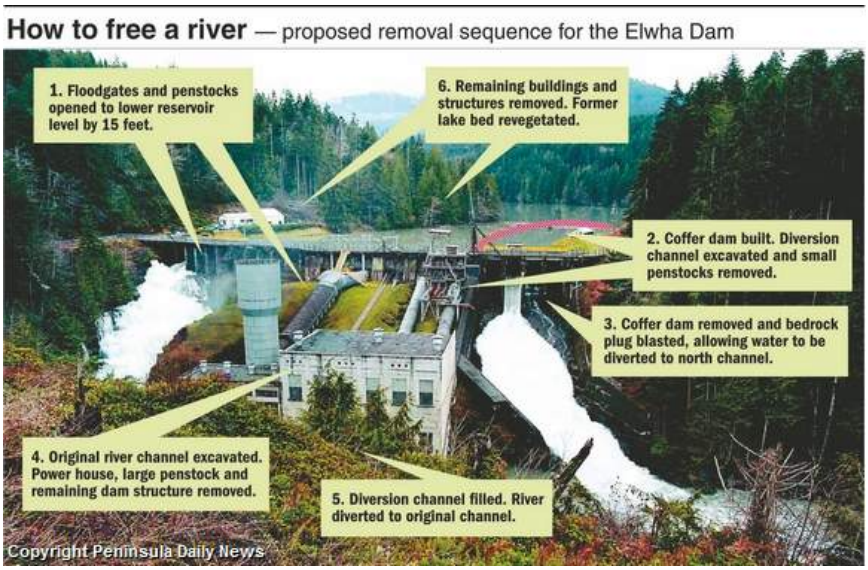
Flood Disaster
It was Sunday evening about 7 o'clock January 31, 1869 that the upper Kohanza dam let go, carrying with it in the flood surge the lower Kohanza dam as well. The water held in the two reservoirs flowed with such a force, that the newly repaired Flint's dam was also destroyed. Three bridges in town were destroyed and carried downstream.

Flash Flood
Ice floes, rocks, trees carried in the torrent of water swept away houses, bridges, and buildings in a matter of minutes. Initially only five of the bodies were found downstream trapped in ditches of the eleven residents who were killed. The city of Danbury, Connecticut now boasting a population of 79,743 still employs eight reservoirs, some of these still historical earthen dams which are subject to annual inspection. During the height of the hatting industry the city relied upon about 7 million gallons of water a day about the same water usage as the present population. It was in 1895, following a number of law suits that the city of Danbury finally built a filtration plant to stop polluting lands down steam.

(Excerpts: Full article at:
http://www.peninsuladailynews.com/article/20110123/news/301239994/massive-dam-tear-down-start-only-eight-months-away-montana
This will be without a doubt a low in the history of dams and hydropower. I hope the salmon return, an iffy proposition based on the situation at un-dammed rivers nearby.)

Massive dam tear-down start only eight months away; Montana contractor looks over project, housing prospects

By Paul Gottlieb, Peninsula Daily News, January 23. 2011, peninsuladailynews.com



OLYMPIC NATIONAL PARK -- A Barnard Construction Co. supervisor visited the North Olympic Peninsula earlier this month as the Bozeman, Mont., firm continued preparations for tearing down the Elwha and Glines Canyon dams. "We were meeting with potential subcontractors and vendors and different things like that, and looking for places to live," said Project Manager Brian Krohmer, who was in Port Angeles on Jan. 12-13. The company also has begun seeking housing for the Montana employees who will be among the 40 to 50 workers the National Park Service has estimated will be needed for the project, Krohmer said. The number of employees who will tear down the dams at any given time "will fluctuate depending on what exactly is going on," Krohmer said. They will begin bringing down the 108-foot Elwha Dam beginning Sept. 15. Barnard has until mid-September 2014 to complete the project, Krohmer and Olympic National Park spokeswoman Barb Maynes said.

Dismantling of the 210-foot Glines Canyon Dam, which is eight miles up river from the lower dam, will begin later, but before the Elwha Dam is completely torn down. The $351.4 million project, which is intended to restore salmon runs, is the largest of its kind in the nation's history. Asked Wednesday if the tear-down project, which was first scheduled to begin in 2004, remains on schedule, ----------.

The company also has yet to decide exactly how each dam will be torn down. That will occur later this spring, when Barnard starts submitting construction planning documents to the National Park Service, which is coordinating the Elwha River Restoration Project. The federal government owns both dams, although the lower dam is outside Olympic National Park boundaries. Since the Elwha River begins inside the park, and the Glines Canyon Dam is within its boundaries, the National Park Service has control over the entire project. Last August, Barnard was awarded a $26.9 million contract to tear down the dams in a comparatively small but hugely visible part of the river restoration project, which is intended to restore the Elwha River's salmon habitat. Spawning runs have been reduced from 400,000 fish before the dams were completed -- the Elwha Dam in 1913, the Glines Canyon Dam in 1927 -- to today's minuscule run of 3,000. Fish ladders and a hatchery built after the dams were constructed did little to replenish the stock, and the 1992 Elwha River Ecosystem and Fisheries Restoration Act mandated their purchase by the federal government to replenish the river's fishery.

Hydro

(The only way to reach the renewable energy goal of 50 % in Alaska is with hydro!)

Parnell on Susitna Dam project

by FDNMstaff The Politics Cache, Jan 14, 2011 | newsminer.com — Posted by Christopher Eshleman, Daily News-Miner

Gov. Sean Parnell just said he's following through on earlier promises to push for a state-built hydroelectric dam on the Susitna River. Last month Parnell included almost $66 million in his annual proposed spending plan for the proposed project. This afternoon he issued this announcement:

Juneau, Alaska – Governor Sean Parnell today transmitted legislation that would authorize the Alaska Energy Authority (AEA) to move forward on pursuing a large hydroelectric project to supply much-needed energy to Interior and Southcentral Alaska. "Alaska must invest now to create new opportunities for economic development and jobs for Alaskans," Governor Parnell said. "A Susitna Dam hydroelectric project will not only provide an important supply of energy for Alaskan homes and businesses, it will create jobs for Alaskans."

The bill would authorize AEA to acquire, construct, own, and operate new power projects; create a new Alaska Railbelt Energy fund, as a fund of AEA; repeal the existing Railbelt Energy fund (AS 37.05.520) after the balance of the existing fund is appropriated and transferred into the new fund, or appropriated and expended for other purposes; address quorum requirements of the AEA board, and allow for the adoption of regulations to govern the procurement of supplies, professional services, and construction. Alaska's energy policy target is to reach 50 percent of its electricity generation through renewable resources by 2025. The legislation has been designed to give AEA the ability to continue with environmental and feasibility studies, positioning the state to seek preliminary approval from the Federal Energy Regulatory Commission for a project that would provide half of Southcentral Alaska's electricity demand. The bill will also define the board of director's quorum to be four of seven members.

(OK, how do I sign up to inspect these projects?)

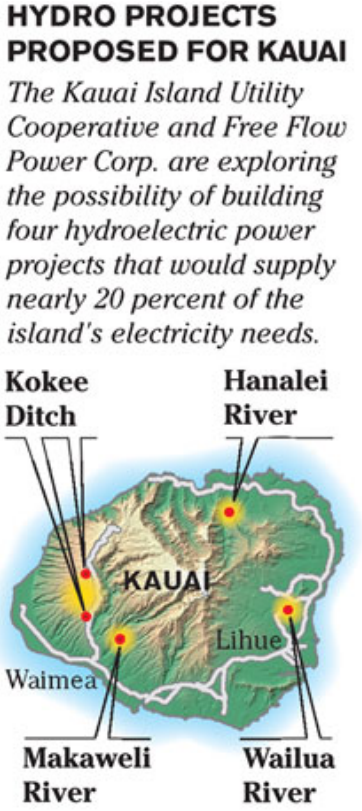
Hydroelectric projects power up

Four sites on Kauai would generate 18% of island power needs under a proposal

By Alan Yonan Jr., Jan 18, 2011, staradvertiser.com

The Kauai Island Utility Cooperative is proposing the state's first significant expansion of hydroelectric power generation in decades with a series of planned projects that could provide nearly 20 percent of the island's power needs. KIUC has partnered with Massachusetts-based Free Flow Power Corp. to explore the development of four hydroelectric projects on rivers and streams across Kauai that could generate enough electricity to power roughly 13,000 homes. The development of hydroelectric power generation in Hawaii has thus far taken a back seat to solar and wind power in the recent push toward greater use of renewable energy sources. The last major hydroelectric project in the state was built on the Big Island's Wailuku River in 1993. Many of the other plants date back to the early part of the 20th century. The dozen or so hydro projects spread around the state have a total generating capacity of about 30 megawatts — 15 megawatts on the Big Island, 9 megawatts on Kauai and 6 megawatts on Maui. The total is equal to the peak output of the wind farm recently completed in Kahuku. KIUC's plans would add another 24 megawatts of hydroelectric generation from facilities planned for the Hanalei, Wailua and Makaweli rivers as well as at the Kokee Ditch, according to applications filed with the Federal Energy Regulatory Commission. KIUC issued a news release last week to announce the filings made with FERC in October and November. The estimated 80,000 megawatt-hours of electricity generated by the plants would amount to 18 percent of Kauai's total energy consumption.

"Hydroelectric power is a unique opportunity — it's low cost from day one," said Steve Rymsha, senior energy solutions engineer for the nonprofit, member-owned utility. "It's a very economical, stable source of electricity." The utility estimates that its cost to generate electricity from the hydro projects will run about 12 cents to 15 cents per kilowatt-hour, compared with 20 cents per kilowatt-hour from its oil-fired generators. The savings to KIUC would be passed along to its members, said company spokesman Anne Barnes. Besides cost, another advantage hydroelectric has over wind and solar as a renewable energy source is that the power is considered to be "firm." Both wind and solar present problems for utilities trying to maintain the stability of their grids because of factors like fluctuating wind speeds and availability of sunlight. The Hanalei River, Makaweli River and Wailua River proposals involve constructing dams and weirs that would result in reservoirs of various sizes. The largest would be a reservoir with a surface area of 35 acres that would be created by a 503-foot-long, 23-foot-high earthen dam on the Wailua River. The Kokee Ditch project would tap two existing reservoirs that would be upgraded, Rymsha said. The Wailua project has raised concerns in the community because of its close proximity — about 1,000 feet upstream --- from Wailua Falls. In a letter to FERC, Judy Dalton of Lihue said she was worried that the impeding the river's flow would adversely affect "one of the most popular visitor destinations on Kauai." "Putting a dam upstream of the falls would interfere with and impede the flow of water. As a result it would lessen Wailua



Falls' beauty that has inspired visitors for eons." Several other residents who submitted written comments on the Wailua plan suggested developers opt for a "run-of-the-river" approach, where the natural flow of the river could be tapped to generate electricity without building a dam. The majority of existing hydro projects in Hawaii are run of the river.

KIUC emphasized that the proposed hydroelectric projects are early in the planning stages, and the process of conducting environmental reviews, permitting and obtaining land rights could take "several years." One issue KIUC will have to deal with is a competing plan for a hydroelectric plant along the Kokee Ditch on the west side of the island. An association of local farmers has teamed up with another alternative energy company to propose a hydroelectric facility in the area. The Kekaha Agriculture Association filed a motion with FERC to intervene in the case, saying the plan it is pursuing with Pacific Light & Power Inc. "takes into account the best interests of the Kauai agricultural community and the larger agricultural community of the state of Hawaii." The partnership would sell electricity to KIUC under a power purchase agreement. Under the KIUC proposal, however, the utility would own the power plant and therefore would be able to get a better price for the electricity, Rymsha said.

The Alabama Municipal Electricity Authority (AMEA), Dothan's Primary Power Supplier in Houston County is considering the addition of a hydroelectric plant for generation of electricity along the Chattahoochee River

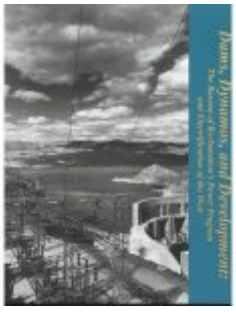
azocleantech.com, 1/18/11

The AMEA is undertaking a study for determining the economic feasibility of constructing a hydro power plant at the George W Andrews Lock & Dam. According to Lisa Miller, AMEA's Marketing and Communications Manager, the plant would be expected to generate around 25 MW, but plans for such a plant are in the future. Alan Wilford, AMEA's Manager of Planning & Engineering commented that a lot of financial and engineering analysis would need to be done during the entire 36 month study period. Preliminary estimations reveal that the plant has a potential power generating capacity of powering 6,250 homes an hour. The AMEA supplies electricity to more than 350,000 customers in 11 municipalities, of which Dothan is one. Mike West, City Manager, Dothan, revealed that AMEA provided 80-90% of the power to the Dothan residents. He also mentioned that the addition of a hydroelectric plant would be highly beneficial for the local community. Hydro power is advantageous as fuel is not involved. It would also have a positive impact on the power rates if more and more hydro power is used. He further added that green renewable power also has cost-effectiveness as a plus factor.

(Here's a very interesting web site info page on hydro history. The photos and other info are fantastic. Each photo and blue highlighted text when clicked on is a link to web sites.)

Dams and Hydropower in the West

govbooktalk.gpo.gov



Although the words "Woody Guthrie" and "Federal employee" don't usually come to mind together, in May 1941, the Government hired the great folk singer to write songs about some of its hydropower projects in the Pacific Northwest. The results included such classics as "Roll on Columbia," "Pastures of Plenty," and "Grand Coulee Dam."
Woody and his songs came to mind as I started thumbing through **Dams, Dynamos, and Development: The Bureau of Reclamation's Power Program and Electrification of the West,** a handsome, large-format book published for the centennial of the Bureau in 2002 and now back in print. It includes a broad array of wonderful black and white and color photos, as well as reproductions of art work (even a Norman Rockwell, left), all of which illustrate the history and

activities of the Bureau in building dams and power plants to generate electricity. Many of the photos capture Woody's "big Grand Coulee country in the land I love the best" and the other rivers and canyons of the West.

It's not just a picture book; there's also a lot of hard information on the history of the program, the changing views of the effects of dams and hydropower facilities on the environment – even an extensive listing and photo gallery of the 58 power plants that comprise the Bureau's power network. It conjures up the heroic age of building America's infrastructure while addressing such issues as alternative power sources and environmental protection.

You can get a copy of this excellent book here or find it in a library. If you want to view some of the art work, check out the Bureau's American Artist and Water Reclamation Web page; for some of the photos, there's the Bureau of Reclamation Photography and Engineering Drawings Collections page.

(The Hydro Reform Coalition has gone over the line. This phony, inaccurate diatribe called a parody is full of lies. Please show me an example of someone who is building a 200 foot high dam to develop a small hydro project in the U.S.????? ---------- Watch the video!)

Small Hydro Animated Parody

paddlinginstructor.com, Jan. 22, 2011

Watch the video. Why does the hydro industry tolerate such phony propaganda?
http://hydroreform.org/news/2011/01/06/small-hydro-animated-parody
http://www.paddlinginstructor.com/blog/environment/4181-debunking-the-benefits-of-small-hydro-power-video.html

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Energy policy — hydroelectric: HB 11-1083

January 22, 2011, coyotegulch.wordpress.com

I like the short name for this bill, *Hydroelectricity & Pumped Hydro*, on the General Assembly website. I think you should generate hydroelectric power where you can. There are many facilities already in place ripe for retrofitting. Pumped hydro plans include wind or solar to pump water to an uphill reservoir during the day to generate hydroelectric power at night. The water is stored in afterbay for pumping back uphill the next day or during the next wind event. Here's a report from Patrick Malone writing for *The Pueblo Chieftain*. From the article:

> The legislation addresses the opportunity for energy companies to approach the Public Utilities Commission with "clean energy projects in the hydro and hydro-pumpback arena as a viable resource for electrical energy," said state Rep. Keith Swerdfeger, R-Pueblo West, who is sponsoring the bill. "If the projects are cost-effective and benefit the ratepayers, we need to put that on the table."
>
> State Sens. Angela Giron, D-Pueblo, and Kevin Grantham, R-Canon City, are Senate sponsors of the bill. It would add hydroelectricity to the category of new energy technologies that the PUC can consider and authorize incentives for power companies for energy acquisition. "It's all-around good," Giron said. "This is a bipartisan bill with Southern Colorado jobs and clean energy in mind."

More hydroelectric coverage here and here.

Water

State panel funds hydropower climate study on Yuba River

January 15, 2011, By Ben van der Meer/Appeal-Democrat, appeal-democrat.com

As the Yuba County Water Agency ramps up for renewal of a federal license to produce hydroelectric power, how a changing climate affects what's flowing down the hill will get some examination. The California Energy Commission awarded $299,970 to the University of California, Davis, last week for scientists and students there to study the topic. "Changes in climate directly affect the 'fuel' available for hydropower plants in the form of the amount and timing of snowpack runoff," Joshua Viers, one of the scientists who will lead the study, wrote in an e-mail. "We are interested in how changes in 'fuel' availability affect water management decisions."

The agency has applied for a new license to operate hydroelectric plants from the Federal Energy Regulatory Commission, which will review the agency's operations in detail before deciding. The previous license, issued in 1966, expires in five years. Though the commission's review will encompass water quality, endangered species and several other aspects the Water Agency didn't have to consider before, climate change isn't included in such reviews, according to the proposal from Viers, of the U.C. Davis-affiliated Center for Watershed Sciences. While scientists continue to debate whether climate change is caused or exacerbated by man-made activities, most agree the planet's temperature has been on an upward trend in recent years. Figures show 2010, on average, ranked as one of the hottest years globally in recorded history. Agency General Manager Curt Aikens said while the money awarded by the commission for study is separate from the relicensing process, climate change could play a role in future hydroelectric operations. "It's difficult to get good predictions on what's going to happen," Aikens said, explaining both normal climate variability and climate change effects are broad enough to make projections more likely to fall within a range of possibilities. "You may have the same amount of water, but just receiving it in a shorter amount of time and making it not as usable," he said.

Viers said he and his students will use computer models to look at hydrology and water management, and whether less snowpack would affect how much water flows through the turbines at plants like the Colgate Powerhouse near Dobbins. Students will also study the effects of changes in stream temperatures and ecosystems in the Sierra Nevada and its rivers, Viers said. The Water Agency will have a pair of public meetings early next month, with a tour of hydroelectric operations on Feb. 1 and a scoping meeting on Feb. 2, as part of the relicensing process, Aikens said.

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