

**From:** Thomas Mallams  
**To:** [Wr401program](#)  
**Subject:** Public Comments on FERC Project No. 14803  
**Date:** Wednesday, June 27, 2018 1:07:35 PM  
**Attachments:** [1-FERC BOCC ltr.pdf](#)  
[2-FERC Report exerts.pdf](#)  
[CDM Report exerts.pdf](#)  
[4-Dean Brockbank comments.pdf](#)

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June 27, 2018

**Public Comment on FERC Project No. 14803, which includes this email and the 4 relevant attachments**

To interested parties:

While serving as an elected Klamath County Commissioner, in March 2016, the attached policy/position letter was adopted and signed by all 3 members of the Klamath County Board of Commissioners. This letter outlines portions of the opposition to the possible removal of the 4 Klamath River Dams.

The additional attachments documents some of the reasoning for the opposition.

This policy/position is still relevant today as the current Klamath County Board of Commissioners have not in any way rescinded this policy/position. In fact, this policy/position was reaffirmed in a public meeting in February of 2017.

Please also remember the Klamath County voters overwhelmingly opposed the possible dam removal in an advisory ballot in November of 2016. Nearly 73% were opposed. Measure G in Siskiyou County showed a staggering 80% in opposition.

Thank you for your attention to the citizens where the 4 dams are located and the local elected representatives in both Siskiyou and Klamath County.

Tom Mallams  
Klamath County Commissioner 2013-2016  
541-892-2626  
[tmbrokenboxranch@gmail.com](mailto:tmbrokenboxranch@gmail.com)



## Klamath County Commissioners

**Tom Mallams, Commissioner**  
Position One

**Kelley Minty Morris, Commissioner**  
Position Two

**Jim Bellet, Commissioner**  
Position Three

March 23, 2016

Kimberly D. Bose, Secretary  
Nathaniel J. Davis, Sr., Deputy Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

RE: Klamath Dam Relicensing Project 2082-027

Dear Chairman Bay, Commissioner LaFleur, Commissioner Clark and Commissioner Honorable,

The Klamath County Board of Commissioners is extremely concerned over the possible Klamath River Dam relicensing verses removal process. This has been a contentious issue for many years. There have been numerous studies completed with again, contentious, debatable results.

Southern Oregon and Northern California have had our economies decimated by overreaching Federal and State regulators. Our once prosperous and growing communities struggle to stay viable. Our annual budget cycles see an ever dwindling revenue, along with soaring costs. To put things into context, a very short history of Klamath Lake and the Klamath River is in order. The entire system has been appropriately labeled as an "upside down river". Basically, Klamath Lake, besides having an average depth of less than eight feet, also has an enormous amount of natural occurring phosphorus, which originates from the volcanic soils and rock structure. Before any dams were in place, Klamath Lake would often times dry up to nothing more than a large swamp. Klamath River would in turn nearly quit flowing all together. When there were steady flows into Klamath Lake the naturally impaired water would flow down Klamath River and get cleaner the farther down river it would get. The current dams in place have helped with water quality by serving as a "sink" for phosphorus laden sediment as well as providing a deep pool behind each dam which cools the water.

The lowest structure, Iron Gate Dam has a very successful fish hatchery built specifically for "mitigation" purposes when the dams were originally constructed. If Iron Gate Dam is destroyed, the fish hatchery will no longer be viable, as there is no cool water source and the physical location would put it in jeopardy with a major flood event.

## Klamath County Commissioners

Tom Mallams, *Commissioner*  
Position One

Kelley Minty Morris, *Commissioner*  
Position Two

Jim Bellet, *Commissioner*  
Position Three

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FERC Commissioners  
March 23, 2016  
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These dams were not constructed solely for flood control, but they do offer some storage in a flood event. They also act as a nine hour warning to downstream residents if there is an impending flood event on its way.

Of the four dams on the Klamath River under consideration, J C Boyle Dam is located within Klamath County, Oregon. The loss of tax revenue alone to Klamath County amounts to nearly half a million dollars. Many recreational opportunities will be collateral damage as well. These dams produce enough hydroelectric power to satisfy 70,000 households.

We ask that FERC restudy the FERC Report of November 16, 2007 (see attachment). This extensive analysis came to the conclusion and recommendation that relicensing of the Klamath River Dams is the best alternative. This analysis listed the actual cost of the physical structures amounted to \$80 million. Taking into consideration the total **additional** cost associated with the acknowledged major sediment issues ranged from \$1.4 billion-\$4.4 billion. Remember these numbers are in 2006 dollars.

The current proposal of Klamath Dam Removal allows for the flushing of 22 million cubic yards of sediment down the river. Not all the sediment would head down river, but conservative estimates put that number at 75% or approximately 17 million cubic yards. Many have stated this action would cover historic spawning beds and essentially sterilize the Klamath River for a hundred years. Even some of those that support taking out these dams have openly called this direction the "Great Experiment".

Another Federal Report, the Camp Dresser & McKee Report, CDM Report (see attachment) shows a similar finding. This report was commissioned by the Department of Interior and dated July 2008. It acknowledged that the sediment would be sent down the river. The CDM Report estimated the physical removal of the dams would cost \$94.4 million. This report struggled with even trying to quantify the cost associated with the "high level of liability" and "high uncertainty" with the massive amounts of sediment being flushed down the river. The high estimate related to sediment liability was \$836.6 million. Add those together and you get \$931 million, with a disclaimer that the literal gigantic unknowns were staggering.

When the Department of Interior Secretarial Determination Environmental Impact Statement (EIS) was released in October 2012, the story was different. All the sediment issues identified as having a high liability level in the CDM and FERC reports are now not considered to be a major liability issue. This EIS was based in part on the "Stillwater Science" and an Economic Impact Study that were both commissioned and paid for by pro Klamath Dam Removal stakeholders. Siskiyou County had experts identify numerous faulty data and conclusions.

## Klamath County Commissioners

Tom Mallams, Commissioner  
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Position Two

Jim Bellet, Commissioner  
Position Three

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FERC Commissioners

March 23, 2016

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We believe in private property rights. These dams are owned by PacifiCorp. PacifiCorp's private property rights were threatened in 2008 at a meeting in Virginia, attended by representatives from the Governors Oregon, California and the Department of Interior. They met with Dean Brockbank, Chief Legal Counsel for PacifiCorp (see attachment). Dean Brockbank had a number of interviews following this meeting where he openly portrayed this meeting as a threat from our government that PacifiCorp would not be allowed to relicense these dams and get used to the idea of dam removal.

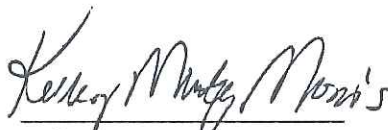
These dams are in good condition and serve many purposes for all the residents and for the environment including the fisheries. The largest recorded fish runs have occurred after dams were in place.

We thank you for your consideration.

Sincerely,



Tom Mallams  
Commissioner



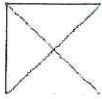
Kelley Minty Morris  
Chair



Jim Bellet  
Commissioner

Enc: FERC Report, CDM Report and Associated Press article





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**Industries**

Hydropower - Environmental Impact Statements (EISs)

**Final Environmental Impact Statement for Relicensing of the Klamath Hydroelectric Project No. 2082-027**  
 Issued: November 16, 2007

Commission staff prepared a Final Environmental Impact Statement (FEIS) for relicensing of PacifiCorp's 169-megawatt Klamath Hydroelectric Project, located primarily on the Klamath River in Klamath County, Oregon and Siskiyou County, California. On average, the project generates 716,820 megawatt-hours of electricity annually. The project occupies 219 acres of lands of the United States, which are administered by the U.S. Bureau of Reclamation and the U.S. Bureau of Land Management.

The existing project consists of eight developments, seven of which are located on the Klamath River. PacifiCorp proposes to decommission the upstream-most East Side and West Side developments and to remove the Keno development, which has no generating facilities, from the project. The remaining project developments on the main stem of the Klamath River are J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate. The proposed project also includes the existing Fall Creek development, located on a Klamath River tributary.

In this FEIS, Commission staff assessed the environmental and economic effects of:

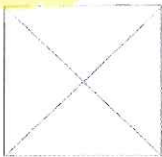
- Continuing to operate the project with no changes or enhancements (no-action alternative);
- Operating the project as proposed by PacifiCorp (PacifiCorp's proposal);
- Operating the project as proposed by PacifiCorp with additional or modified environmental measures (staff alternative);
- Staff alternative with conditions filed by the Department's of the Interior and Commerce;
- Retirement of the Iron Gate and Copco No. 1 developments with additional or modified measures for the remaining developments; and
- Retirement of the Iron Gate, Copco No. 2, Copco No. 1, and J.C. Boyle developments, with additional or modified measures for the remaining developments.

The staff alternative incorporates most of PacifiCorp's proposed environmental measures, some with certain modifications. The staff alternative also includes 25 environmental measures additional to those proposed by PacifiCorp, including:

- Implementation of an integrated fish passage and disease management program;
- Implementation of an adaptive spawning gravel augmentation program in the J.C. Boyle bypassed reach and downstream of Iron Gate dam.

Based on our detailed analysis of the environmental benefits and costs associated with the five action alternatives considered in detail in this FEIS, we conclude that the best alternative for the Klamath Hydroelectric Project would be to issue a new license consistent with the environmental measures specified in the Staff Alternative.

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The existing project consists of eight developments, seven of which are located on the Klamath River. PacifiCorp proposes to decommission the upstream-most East Side and West Side developments and to remove the Keno development, which has no generating facilities, from the project. The remaining project developments on the main stem of the Klamath River are J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate. The proposed project also includes the existing Fall Creek development, located on a Klamath River tributary.

In this FEIS, Commission staff assessed the environmental and economic effects of:

- o Continuing to operate the project with no changes or enhancements (no-action alternative);

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- o Operating the project as proposed by PacifiCorp (PacifiCorp's proposal);
- o Operating the project as proposed by PacifiCorp with additional or modified environmental measures (staff alternative);
- o Staff alternative with conditions filed by the Department's of the Interior and Commerce;
- o Retirement of the Iron Gate and Copco No. 1 developments with additional or modified measures for the remaining developments; and
- o Retirement of the Iron Gate, Copco No. 2, Copco No. 1, and J.C. Boyle developments, with additional or modified measures for the remaining developments.

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## FERC STUDY

sediment to be removed would depend on site-specific conditions and the nature of contaminants. It could be feasible to allow sediment not subject to scour following dam removal to remain in place with or without capping. However, to provide a conservative estimate of costs if sediment removal should be needed (preliminary sampling results in GBC, 2006, suggest that this would not be the case), we assume all sediment associated with reservoir lost storage (as shown in table 3-3) would need to be removed. Our base costs also assume that the exposed bottoms of the reservoirs would naturally re-vegetate, except for the areas disturbed by dam removal. We assume that no additional restoration costs for reservoir or downstream riparian habitat that may be influenced by sediment releases during dam removal would be required beyond the immediate dam site. In addition, we assume that all project-related roadways would remain in place with no modifications.

### 4.7.1 Keno Development

The Taintor gates would be opened to drain the reservoir and then removed. The dam and fishway concrete, earthen abutment, and control building with contents would be removed. The site would be re-graded and re-vegetated along the shore of the river channel in proximity to the dam. We estimate the decommissioning and removal of the Keno facilities would cost about \$3,412,000 (2006 dollars). If contaminated sediment requires removal prior to dam removal, it could cost an additional \$14 to \$43 million. Substantial additional costs would be incurred by others if the water supply intakes at Keno reservoir need to be redesigned to retain their current function. We are not aware of any dam removal estimates prepared for the Keno development by others, and therefore we do not include Keno development in table 4-4.

### 4.7.2 J.C. Boyle Development

The reservoir would be drained in stages to allow much of the dam and associated structures to be removed in the "dry." This also would enable shoreline habitat to gradually acclimate as the reservoir drains. This approach would be used, to the extent possible, for the removal of other project dams on the mainstem. The Taintor gates could be opened to drain the reservoir to elevation 3,781.5 feet. The reservoir could be further lowered to elevation 3,768 feet through the powerhouse conveyance pipeline, canal, and tunnel. If operable, the dam bypass drains could be used to draw the reservoir down to approximately elevation 3,750 feet. The base of the embankment dam is at about elevation 3,726 feet. The remaining water in the reservoir would need to be removed prior to completion of dam removal. This could be accomplished by creating a diversion channel through the dam using sheetpiles driven to bedrock. The entire embankment dam would be removed. Once this occurs, all concrete structures associated with the power conveyance intake, Taintor gate structure, fishway, and other structural components would be removed. The embankments at each end of the former dam would be re-graded and re-vegetated.

The steel pipeline and supporting steel and concrete would be removed. The concrete structures associated with the canal intake, canal flume, canal spillway, and tunnel entrance structure would be removed. The lands under and adjacent to the canal flume would be backfilled and re-graded to stabilize the slopes and the area would be re-vegetated. The downlope channel associated with the former canal emergency spillway would be backfilled and stabilized to the edge of the Klamath River. The penstocks, supports, and anchors would be removed, and the tunnel portals would be sealed.

The powerhouse cranes would be dismantled and removed. The powerhouse substructure and surface slab would remain intact. The powerhouse equipment would be removed. Any wooden materials in the powerhouse would be removed. Any components from the powerhouse containing chemical or other hazardous materials would be removed from the site, including transformers, bushings, batteries, tanks, lead bearings, and asbestos-based insulating products. Windows and doors in the powerhouse and the penstock entrance would be sealed to prevent public access. The turbine/generator openings in the concrete powerhouse slab would be sealed with concrete, as would the draft tube openings. The walls of



the tailrace flume would remain. The tailrace area would be backfilled and re-graded to match the river embankment upstream and downstream of the powerhouse area and stabilized as necessary.

The 0.24-mile-long, 69-kV, de-energized transmission line from the switchyard to Transmission Line 18 would be removed, and the transmission right-of-way would be restored to natural conditions. The switchyard serves non-project purposes and would be retained.

We assume that the support buildings located near the dam would be sold for other purposes. The warehouse near the powerhouse would be removed.

We estimate the decommissioning and removal of the J.C. Boyle facilities would be \$18,911,000 (2006 dollars). If contaminated sediment requires removal prior to dam removal, it could cost an additional \$2 to \$7 million.

#### 4.7.3 Copco No. 1 Development

We assume that it would be feasible to restore the existing dam drainage tunnel and use it to drain the reservoir. The gate structure would need to be refurbished with a new gate and lift mechanism and the tunnel plugs would need to be removed once the gate structure was operational. This would allow for removal of the dam by drilling and blasting or other methods without the need to notch the dam to lower the reservoir. However, due to uncertainties over the feasibility of using the existing dam drainage tunnel, we have increased our contingency factor for Copco No. 1 from 25 to 50 percent in case detailed investigations reveal that another method would be needed to drain the reservoir in a controlled release.

The impoundment would be lowered by first sequentially opening each of the spillway gates. The reservoir could be lowered further through the penstocks. Finally, the dam drainage tunnel would be used to drain the remainder of the reservoir volume prior to initiation of dam removal. The dam would be removed to the natural river channel upstream and downstream of the dam. No excess foundation material that was required to provide a solid foundation for the dam would be removed. The penstocks would be removed entirely. The powerhouse intake structure foundation and gatehouse would be sealed and the gatehouse secured. Once the dam is removed, the dam drainage structures would be removed and the tunnel sealed. Reservoir sediment would be allowed to pass downstream naturally.

The powerhouse would remain. The penstock and tailrace openings would be sealed. The powerhouse equipment and any wooden materials in the powerhouse would be removed. Any components from the powerhouse containing chemicals or other hazardous materials would be removed from the site. Windows and doors in the powerhouse would be sealed to prevent public access.

The two 0.7-mile-long, 69-kV lines from the Copco No. 1 powerhouse to the Copco No. 1 switchyard would be removed (the Copco No. 1 switchyard serves as a point of interconnection for the Iron Gate and Copco No. 2 powerhouses). We assume for cost estimation purposes that Copco No. 1 dam would only be removed if the Iron Gate and Copco No. 2 developments were decommissioned, and therefore, the Copco No. 1 switchyard would no longer be needed as a point of interconnection. The switchyard site and transmission line rights-of-way would be restored to natural conditions.

We estimate the decommissioning and removal of the Copco No. 1 facilities would cost \$20,368,000 (2006 dollars). If contaminated sediment requires removal prior to dam removal, the costs could increase an additional \$955 million to \$2.9 billion.

#### 4.7.4 Copco No. 2 Development

The reservoir would be drained through the Taintor gates. Once drained, the gates and gate structure would be removed. The power tunnel entrance would be sealed and the majority of the tunnel intake structure removed. The river banks along the abutments of the dam would be re-graded and re-



vegetated, and the area where the intake structure had been would be backfilled, re-graded, and re-vegetated. Sediment would be allowed to pass downstream naturally.

The woodstave penstock, supports, and anchors would be removed, and the tunnel entrances sealed. The tunnel exit portal and the tunnel spillway portal would be sealed. The powerhouse would remain, and the penstock and tailrace openings would be sealed. The powerhouse equipment and any wooden materials in the powerhouse would be removed. Any components from the powerhouse containing chemicals or other hazardous materials would be removed from the site. Windows and doors in the powerhouse would be sealed to prevent public access.

The Copco No. 2 powerhouse serves as the point of interconnection for the Iron Gate development via the Copco No. 2 transmission connection to the Copco No. 1 switchyard. We assume for cost estimation purposes that Copco No. 2 development would only be decommissioned if Iron Gate development was decommissioned. Thus, the 1.23-mile-long, 69-kV transmission line from the Copco No. 2 powerhouse to the Copco No. 1 switchyard would be removed. The transmission line right-of-way would be restored to natural conditions. Since the Copco No. 2 switchyard serves non-project purposes, it would be retained.

We estimate the decommissioning and removal of the Copco No. 2 facilities would cost \$3,731,000 (2006 dollars). It is unlikely that there would be enough sediment in Copco No. 2 reservoir to substantially influence this cost estimate.

#### 4.7.5 Fall Creek Development

The Spring Creek diversion dam and diversion structures would be removed. The excavated diversion ditch from the diversion dam to its end in the Fall Creek drainage basin would be backfilled and graded. The diversion site would be restored to natural grades, if possible, and re-vegetated along the creek banks.

The Fall Creek diversion dam and diversion structures also would be removed. The earth and rock diversion ditch from the Fall Creek diversion dam to the penstock intake would be backfilled and graded. The diversion site would be restored to natural grades, if possible, and re-vegetated along the creek banks.

The penstock, supports, and anchors would be removed. The powerhouse would remain. The penstock and tailrace openings would be sealed. The powerhouse equipment and any wooden materials in the powerhouse would be removed. Any components from the powerhouse containing chemicals or other hazardous materials would be removed from the site. Windows and doors in the powerhouse would be sealed to prevent public access.

The short 69-kV tap line connection to Transmission Line 18 and the 1.65-mile-long, 69-kV transmission line extending from the Fall Creek powerhouse to the Copco No. 1 switchyard would be removed. The transmission line rights-of-way would be restored to natural conditions. There is no switchyard at Fall Creek.

We estimate the decommissioning and removal of the Fall Creek facilities would cost \$1,390,000 (2006 dollars). It is unlikely that there would be enough sediment behind the Spring or Fall Creek diversion dams to substantially influence this cost estimate. We are not aware of any dam removal estimates prepared for the Fall Creek development by others, and therefore we do not include this development in table 4-4.

#### 4.7.6 Iron Gate

We assume that the dam diversion tunnel used during project construction could be used to gradually drain the reservoir and control the release of sediment to the Klamath River downstream of the



dam. Once the reservoir has been drained, the dam would be removed. The drainage tunnel would be used to maintain flow past the site during dam removal. The concrete penstock intake structure and penstock would be removed as dam removal progresses, as would the water supply lines for the fish facilities. The reservoir spillway would be abandoned in place.

The powerhouse crane would be dismantled and removed. The powerhouse equipment and any wooden materials in the powerhouse would be removed. Any components from the powerhouse containing chemicals or other hazardous materials would be removed from the site. The powerhouse substructure and surface slab would be removed to the lowest slab, which would remain. The powerhouse and tailrace area would be backfilled and re-graded to match the new river embankment upstream and downstream of the powerhouse area. The fish facilities at the base of the dam would be removed entirely. We assume that the Iron Gate Fish Hatchery located south of the dam would remain, although its ability to function as a fish hatchery without its historic water supply would be questionable.

The switchyard and 6.55-mile-long, 69-kV transmission line from the Iron Gate switchyard to the Copco No. 2 powerhouse would be removed. The switchyard site and transmission line rights-of-way would be restored to natural conditions.

We estimate the decommissioning and removal of the Iron Gate facilities would cost **\$36,853,000 (2006 dollars)**. If contaminated sediment requires removal prior to dam removal, it could cost an additional **\$485 million to \$1.5 billion**.

Table 4-5 contains a summary of our recommendations and costs for dam removal at the Klamath Hydroelectric Project.

Table 4-5. Dam removal recommendations and costs. (Source: Staff)

Dam/Environmental Measure	Capital Costs (2006\$)	Annual Costs (2006\$)	Annual Energy Costs (2006\$)	Total Annualized Cost (2006\$)
<b>Keno</b>				
Remove Keno from the licensed project	-\$3,935,470 (remove net investment in project facilities from project - this represents the 2003 net investment value of the Keno facilities (\$4,810,350) depreciated to 2006)	-\$57,980 (remove 2003 O&M cost (\$34,000) from project expenses)	\$0 (no energy implications)	-\$589,210 (reduction in annual expenses)
Remove Keno dam (in some cases, if meeting water quality standards and/or if fish passage is not feasible)	\$3,411,650	\$0	\$0	\$460,520
Decommissioning and dam removal plan for Keno development	\$75,000	\$0	\$0	\$10,120

**TOTAL COST \$79,863,000**  
(PHYSICAL STRUCTURES ONLY)  
WITH SEDIMENT  
ADD AN ADDITIONAL \$1.44 BILLION TO \$4.4 BILLION  
2006 DOLLARS

# Utility OKs Klamath dam removals, salmon aid

Agreement is milestone in efforts to restore one of the biggest salmon runs

AP Associated Press

updated 9/30/2009 3:33:33 PM ET

**MEDFORD, Ore.** — The utility that owns four hydroelectric dams on the Klamath River has agreed to terms for their removal, a key milestone in efforts to restore what was once the third-biggest salmon run on the West Coast and end decades of battles over scarce water.

PacifiCorp, the states of California and Oregon, American Indian tribes, federal agencies, irrigators and conservation groups announced the draft agreement Wednesday. It is expected to be signed by the end of the year.

Removal of the dams is not scheduled to start until 2020 and depends on funding for the removal, a federal determination that it will actually help salmon and is in the public interest, and authorization from Congress.

"This agreement marks the beginning of a new chapter for the Klamath River and for the communities whose health and way of life depend on it," Interior Secretary Ken Salazar said in a statement. "Hats off to all the stakeholders who have worked so hard to find common ground on one of the most challenging water issues of our time."

## Removal costs to be shared

PacifiCorp will not bear the estimated \$450 million cost of removing the dams. Oregon has approved \$180 million in surcharges on state ratepayers. Another \$250 million depends on California approving general obligation bonds.

"We are not in the business of taking out dams, but the Klamath Basin crisis is a unique situation," Dean S. Brockbank, vice president and general counsel of PacifiCorp, said in an interview. "We have been able to arrive at a settlement and a business deal that is in the best interests of our customers because it minimizes costs and guards against the risks of the alternatives."

The turning point came in May 2008, when an aide to former Interior Secretary Dirk Kempthorn summoned Brockbank to a meeting at a U.S. Fish and Wildlife Service training center in Shepherdstown, W.Va. They were locked down for a week with representatives of the Bush administration and the governors of Oregon and California, Brockbank said.

They "made it very clear from a public policy point of view that they did not want these dams relicensed," Brockbank said. "Once that became abundantly clear, we shifted our framework from relicensing to a settlement involving a possible dam removal framework."

Michael Carrier, policy director for Gov. Ted Kulongoski, said the meeting was a "watershed moment" that gave the governor's office a new understanding of what was at stake for PacifiCorp.

The utility serves 1.6 million customers in Oregon, California, Washington, Idaho, Utah and Wyoming, and is owned by MidAmerican Energy Holdings Co., a unit of Warren Buffett's Omaha, Neb.-based Berkshire Hathaway Inc.

The four dams — J.P. Boyle, Copco 1, Copco 2, and Iron Gate — together produce enough electricity for 70,000 customers.

"When the Klamath dams come down, it will be the biggest dam removal project the world has ever seen," Steve Rothert, California director for the conservation group American Rivers, said in a statement. "We will be able to watch on a grand scale as a river comes back to life."

## Water wars a problem in Klamath Basin

Charles Bonham, California director for Trout Unlimited, said the next key to successfully restoring salmon to the upper Klamath Basin will be a final agreement among farmers, American Indian tribes, conservation groups and others to ensure salmon restoration will not come at the expense of farming.

"We don't think we will be successful putting salmon back where they haven't been for 100 years unless we have a good, solid relationship with the landowner and farming communities," he said. "We want salmon to be met in Klamath Falls with open arms, not pitchforks."

Water wars have long simmered in the Klamath Basin, where the first of the dams and a federal irrigation project built in the early 20th century turned the natural water distribution upside down, draining marshes and lakes and tapping rivers for electricity to put water on dry farmland that grows potatoes, horseradish, grain, alfalfa and cattle.

Recommend 0

0

8+ 0

BROCKBANK



Algae forms Aug. 21, in the reservoir behind Iron Gate Dam on the Klamath River near Hornbrook, three other dams.



A drought in 2001 forced irrigation water to be shut off to sustain threatened and endangered fish. When the irrigation was restored the next year, tens of thousands of salmon died trying to spawn in the Klamath River, which was too low and too warm to sustain them.

Besides blocking salmon, the dams raise water temperatures to levels unhealthy for fish. California water authorities have been taking a hard look at the toxic algae produced by the dam's reservoirs, and river advocates have sued PacifiCorp to fix the algae problem.

#### **Goal is environmental restoration**

Pressure has been building since PacifiCorp applied for a new 50-year federal operating license in 2004 and made no provision for fish passage, which stops at Iron Gate near the Oregon-California border.


California and Oregon's governors pressed for dam removal after West Coast commercial salmon fisheries collapsed in 2006 because of declines in Klamath River returns, triggering a disaster declaration.

Final approval of the dam removal agreement is key to authorization of a separate agreement to spend \$1 billion over the next decade on environmental restoration in the Klamath Basin.

Some conservation groups were not happy that the deal would allow farming to continue on the Lower Klamath and Tule Lake national wildlife refuges, preventing restoration of wetlands that would contribute to better water quality, and guaranteed irrigation levels for farmers in the upper basin.

"We really can't afford to allow dam removal be linked to making other environmental problems in the basin worse," said Steve Pedery, conservation director of Oregon Wild in Portland.

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www.deadiversion.usdoj.gov/fed\_regs/actions/2006/fr05252.htm  
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**[PDF] Utah State Charter School Board Meeting**

schools.utah.gov/charterschools/State-Charter-School-Board/2012...  
Utah State Charter School Board Meeting Minutes . March 8, 2012 .... Dean Brockbank, John Pingree and Yolanda Francisco-Nez were absent for the vote. Adjourn

**NOTE: Mr. Dean Brockbank and Mr. Toby Freeman of PacifiCorp.**

www.klamathbucketbrigade.org/SiskiyouCounty\_TestimonyofBrockbank...  
11 Would Dean Brockbank and Toby Freeman for 12 PacifiCorp please get behind the hotly wired seats. 13 (Off the record for seating of new panel.)

**Eastern meeting led to Klamath dam removal, salmon - Chico ...**

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CDM

UNITED STATES DEPARTMENT OF THE INTERIOR

This Report, by Camp Dresser & McKee Inc. (CDM Report or Report) was provided to the Department in July of 2008. Though the CDM Report was originally intended for the Department's internal use, we release it now to insure that the parties negotiating a final settlement/dam removal agreement have access to this information, along with other information already available.

During the development of the Agreement in Principle (AIP), substantial attention was devoted to the lack of a settled understanding about the risks and potential liabilities arising from removal of the four PacifiCorp-owned facilities on the Klamath River. These unquantified risks have a direct correlation to the costs and timing of the proposed removal of the facilities. Consequently, last Spring the Office of the Secretary asked CDM to provide an assessment of the status of the known and available scientific, regulatory and economic information known as of that time.

The attached Report is a snapshot of the published science as it existed slightly less than a year ago; it is one piece of the larger scientific, regulatory, and economic framework that will come into full view during the scientific due diligence contemplated by the AIP, leading up to the Secretary's determination in 2012. The Report describes the potential risks and liabilities of dam removal absent an effective strategy to prevent or manage them: it does not compare the risks and liabilities of dam removal and a new license, nor does it evaluate or quantify the potential benefits and values of dam removal. The Report's utility lies in the assistance it offers the parties in specifying the further efforts needed to quantify potential risks and liabilities, develop an effective strategy to prevent or manage them, and compare such risks and liabilities under alternative futures for this project. Because the science is, and will continue to be evolving until 2012, the Report does not reflect the final or interim position of the United States regarding any aspect of the AIP, Final Agreement, or Klamath Basin Restoration Agreement.

We understand the potential for those who oppose dam removal to identify isolated portions of the analysis and postulations of the CDM Report regarding quantification of risk. But because the Secretary will undertake his own analysis, informed by all the parties to the Final Agreement for Dam removal, these postulations are of limited applicability in the final analysis. We encourage the parties to focus on the Report's true value: its identification of factors and data gaps in the science that must be addressed in order for the Secretarial determination of 2012 to be fully informed and sound.

THIS COVER SHEET  
WAS ADDED AFTER THIS  
REPORT WAS LEAKED TO  
THE PUBLIC 2 DAY AFTER  
PASSAGE OF OREGON  
SENATE BILL 76

CDM

# Evaluation and Determination of Potential Liability Associated with the Decommissioning and Removal of four Hydroelectric Dams on the Klamath River By Any Agent

THIS REPORT WAS LEAKED TO THE PUBLIC 1 DAY AFTER THE PASSAGE OF ORE SENATE BILL 76 WHICH AUTHORIZED PACIFIC CORP TO CHARGE RATEPAYERS FOR DAM REMOVAL



*Prepared By:*  
Camp Dresser & McKee Inc.  
*For:*  
U.S. Department of the Interior  
*Through:*  
U.S. Bureau of Reclamation

REPORT

July 18, 2008

## Executive Summary

This report presents the results of a liabilities assessment for the removal of four hydroelectric dams (J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate Dams) on the Klamath River (See Figure ES-1). This assessment was conducted following the development of the Klamath Basin Restoration Agreement in early 2008 between the U.S. Department of the Interior, PacifiCorp, and the current stakeholder group, which identified the decommissioning and removal of the four dams as a key component of the agreement. Several groups representing resource and regulatory agencies and non-governmental organizations (NGOs) have commissioned studies in an attempt to identify a process

and quantify the potential liabilities associated with decommissioning and removal of the four dams. The process for decommissioning studied to date has emphasized the rapid removal of the dams and passage of trapped sediment down the Klamath River.

This report identifies and attempts to quantify specific potential liabilities and the associated costs related to the decommissioning and removal of the four dams based upon the existing information developed to date. The report also identifies additional study needs that would help to reduce the uncertainties associated with facilities removal. Potential liabilities and associated costs were developed using existing reports and studies to present decision makers with a relative scale of the potential costs that could be generated by a dam removal action.



Figure ES-1. Klamath River System



Evaluation of Potential Liability Associated with the Removal of  
Four Hydroelectric Dams on the Klamath River

## Liability Identification and Costing

Liabilities were identified and placed in four categories: (1) physical, (2) biological, (3) socioeconomic, and (4) legal and regulatory. Within each category the liabilities were further divided by their relative resource area and the dam or reach of river they would affect. The liabilities were numbered sequentially by resource area and assigned a corresponding “uncertainty” ranking to indicate confidence in the available data for quantifying the liabilities’ total effect on decommissioning. A defined process was followed by the team to cost the liabilities using existing information, research, and engineering and construction judgment. Liability costs fell into two categories: direct costs and indirect costs. Direct costs arise from an identified decommissioning action where indirect costs are those costs that are a result of a decommissioning action in the form of mitigation, compensation, or the recognition of potential litigation of the liabilities described in Chapter 2 of this report. Many of the indirect costs remain unquantified. Presented in Table ES-1 is a summary of quantified liabilities and costs identified in this study.

Costs in Table ES-1 are presented for the quantifiable liabilities only. The unquantified liabilities that remain are presented in Chapter 3 of this report and have the potential to change the partial totals presented in Table ES-1.

**Table ES-1. Klamath Dam Decommissioning Liability Investigation Liability Cost Estimate (Quantifiable Costs)**

<i>Physical Structure Removal Costs</i>			<i>Cost Estimate</i>		
J.C. Boyle			\$16,914,700		\$16,914,700
Copco No. 1			\$25,380,100		\$25,380,100
Copco No. 2			\$6,112,400		\$6,112,400
Iron Gate			\$46,023,100		\$46,023,100
<b>Physical Structure Removal Subtotal</b>			<b>\$94,430,300</b>		<b>\$94,430,300</b>
<i>Quantifiable Liability Cost Estimates</i>					
<i>Liability #</i>	<i>Liability Description</i>	<i>Dam Affected</i>	<i>Low Estimate</i>	<i>Risk Factor</i>	<i>High Estimate</i>
HW-1 to HW-4	Hazardous Waste Mitigation and Cleanup	J.C. Boyle	\$100,000	1.5	\$150,000
HW-5 to HW-9	Hazardous Waste Mitigation and Cleanup	Copco No. 1	\$100,000	1.5	\$150,000
HW-10 to HW-13	Hazardous Waste Mitigation and Cleanup	Copco No. 2	\$100,000	1.5	\$150,000
HW-14 to HW-18	Hazardous Waste Mitigation and Cleanup	Iron Gate	\$100,000	1.5	\$150,000
HH-4	Operations of Keno Dam	All Dams	\$40,326,000	1.5	\$60,489,000
HH-5	Highway 66 Bridge foundation	J.C. Boyle	\$500,000		\$1,500,000
SE-1	Presence of sediment	J.C. Boyle	\$5,464,000	2.0	\$10,928,000
SE-5	Presence of sediment	Copco No. 1	\$93,560,000	2.0	\$187,120,000
SE-9	Presence of sediment	Iron Gate	\$76,379,000	2.0	\$152,758,000
WQ 1, 2, 3	Downstream water quality during decommissioning	All Dams	\$899,000	1.5	\$899,000
AQ-2	Loss of spawning areas	All Dams	\$45,000	1.0	\$45,000
AQ-6	Iron Gate Fish Hatchery funding	Klamath Downstream	Presented above as structure removal cost	1.0	Presented above as structure removal cost
TE-1,3	Change in wetland habitat and loss of habitat	All Dams	\$48,000	1.5	\$72,000
TE-2	Invasive species	All Dams	\$5,600	1.5	\$8,400
SR-1	Reservoir restoration	J.C. Boyle	\$2,510,000	1.5	\$3,765,000
SR-4	Reservoir restoration	Copco No.1	\$16,582,000	1.5	\$24,873,000
SR-5	Reservoir restoration	Copco No.2	\$175,000	1.0	\$175,000
SR-7	Reservoir restoration	Iron Gate	\$15,946,000	1.5	\$23,919,000
RE-1,2	PacifiCorp land ownership and Diminution in Property Value	J.C. Boyle, Copco No. 2 & Iron Gate	\$3,375,000		\$12,000,000



Evaluation of Potential Liability Associated with the Removal of  
Four Hydroelectric Dams on the Klamath River

**Table ES-1. Klamath Dam Decommissioning Liability Investigation  
Liability Cost Estimate (Quantifiable Costs)**

<i>Quantifiable Liability Cost Estimates</i>					
<i>Liability #</i>	<i>Liability Description</i>	<i>Dam Affected</i>	<i>Low Estimate</i>	<i>Risk Factor</i>	<i>High Estimate</i>
RE-3	PacifiCorp land ownership	Copco No.1	\$2,500,000		\$3,750,000
RE-4	Diminution in property value	Copco No.1	\$7,500,000	1.5	\$11,250,000
RC-1,4,6	Loss of flatwater recreation	J.C. Boyle, Copco No. 1 & Iron Gate	\$288,000		\$341,000
RC-2,5,7	Increased distance to water feature	J.C. Boyle, Copco No. 1 & Iron Gate	\$488,000		\$488,000
RC-3,8	Changes in recreational opportunities	J.C. Boyle, Copco No. 1 & Iron Gate	\$1,446,000		\$3,744,000
PO-1,2	Loss and replacement of renewable power source	All Dams	\$65,169,000		\$171,911,000
EC-1, 3, 5, 7	Loss of payroll	All Dams	\$4,067,000		\$4,067,000
EC-2, 4, 6, 8	Loss of regional fisheries	All Dams	\$11,896,000 <sup>2</sup>		\$66,406,000 <sup>2</sup>
<b>Quantifiable Liabilities Subtotal</b>			\$337,672,600		\$674,702,400
<b>Decommissioning Design, Studies and Programmatic Costs at 10%<sup>3</sup></b>			\$33,767,300		\$67,470,200
<b>Total of Quantifiable Liabilities</b>			<b>\$465,870,200</b>		<b>\$836,602,900</b>

Notes:

- Physical structure removal cost calculated using the values presented in GEC 2006 with the GEC estimate for hydroseeding removed to prevent double counting with the estimates presented in SR-1, SR-3, SR-4, and SR-6.
- Not included in total: Since sediment removal should negate fisheries' impacts and the sediment removal costs are included in the total, fishery liabilities are noted here, but will not be included in the total.
- 10% contingency calculated using the liabilities subtotal, the contingency does not consider the physical structure removal cost estimates to avoid duplication of contingency estimation completed by GEC in its estimate.

## Other Important Study Findings

Several important findings relative to the decommissioning of the four dams follow.

- Approximately 130 physical, biological, and socioeconomic liabilities associated with the decommissioning action were identified. The top 28 high ranked liabilities and/or uncertainties represent a very large percentage of the decommissioning cost. The

remaining liabilities represent a small cost in comparison to the overall decommissioning action. These liabilities are shown in Table ES-2.

2. Decommissioning approaches reviewed as part of this study proposed and evaluated the passage of sediment to the Lower Klamath River through to the Pacific Ocean. The North Coast Regional Water Quality Control Board (NCRWQCB) effectively prohibits the discharge of sediments to the Klamath River system including dam decommissioning projects, and the mouth of the Klamath River at the Pacific Ocean is an Area of Special Biological Significance (ASBS), with further restrictions on sediment discharge. As has been seen on other dam removal programs, including Condit on the White Salmon River in Washington, this approach has many regulatory challenges and has high potential for litigation.
3. The Federal Power Act grants the Federal Energy Regulatory Commission (FERC) significant authority to impose mitigation and restoration measures related to project decommissioning, potentially including measures to address the liabilities described in this report.
4. There is the high potential for litigation with a dam removal program that proposes to pass large volumes of sediment due to the damage to downstream fisheries and the aquatic ecosystem. On other dam removal projects including the Condit dam on the White Salmon River, arguing the state's authority to issue a CWA 401 Water Quality Certification has been used as an effective litigation tool to impede a dam's removal. Potential litigation could come from the Lower Klamath River tribes, fishery groups, riparian residents, boaters, and recreational users. The Siskiyou County Board of Supervisors has openly opposed the Klamath dam removal program sighting many of the above issues.
5. Dam decommissioning would result in the likely PacifiCorp divestiture of Keno Dam to Reclamation or another entity. The new owner/operator would be responsible for fish passage at Keno Dam and screening of three major canals on Keno Reservoir. Keno Dam would likely become the new water quality compliance point for water entering the lower Klamath River. Water quality in Keno Reservoir and Lake Ewauna has historically been very poor. Meeting water quality compliance goals and managing endangered fish species in Keno Reservoir, together with providing agricultural supply and return flow, will present significant challenges to the new operator.

Evaluation of Potential Liability Associated with the Removal of  
Four Hydroelectric Dams on the Klamath River

**Table ES-2. Liabilities Representing High levels of Liability  
and/or Uncertainty**

Liability	Topic	Dam	Liability Level	Uncertainty
HH-3	Concurrent reservoir drawdown and sediment passage	All Dams	High	High
HH-4	Operations of Keno Dam	All Dams	High	Mod
HH-6	No low water outlet structure	Copco No. 1	High	Low
HH-7	Dam foundation removal	Copco No. 1	High	Mod
HH-9	Iron Gate Fish Hatchery	Iron Gate	High	High
SE-1	Presence of sediment	J.C. Boyle	High	High
SE-2	Composition of sediment	J.C. Boyle	High	High
SE-3	Sediment organic content	J.C. Boyle	Mod	High
SE-4	Reservoir drawdown rates	J.C. Boyle	Low	High
SE-5	Presence of sediment	Copco No. 1	High	High
SE-6	Composition of sediment	Copco No. 1	High	High
SE-7	Sediment organic content	Copco No. 1	Mod	High
SE-8	Reservoir drawdown rates	Copco No. 1	Low	High
SE-9	Presence of sediment	Iron Gate	High	High
SE-10	Composition of sediment	Iron Gate	High	High
SE-11	Sediment organic content	Iron Gate	Mod	High
SE-12	Reservoir drawdown rates	Iron Gate	Low	High
SE-13	Water temperature and sediment	Iron Gate	Mod	High
WQ-4	CWA Compliance at Keno Reservoir	All Dams	High	High
SR-4	Reservoir restoration	Copco No.1	High	Mod
RE-4	Diminution in property value	Copco No.1	High	Mod
PO-1	Loss of electricity currently generated	All Dams	High	Low
PO-2	Procurement of replacement power	All Dams	High	Low
PO-3	Removal of an emissions-free, renewable power source	All Dams	High	Low
RL-1	FERC Authority to impose mitigation	All Dams	High	High
RL-2	CWA Compliance	All Dams	High	High
RL-3	ITAs	All Dams	High	High
RL-4	Potential for litigation	All Dams	High	High