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Subject: Comment on the 12/27/2018 Draft Environmental Impact Report for the Lower Klamath Project License Surrender. From: Danny Hull <branchfork@voterspetitions.com> Date: 2/26/2019, 1:37 AM To: wr401program@waterboards.ca.gov CC: branchfork@voterspetitions.com

2029 Sargent Avenue

Klamath Falls, OR 97601-1747

February 25, 2019

Dear California State Water Resources Control Board Personnel:

The California State Water Resources Control Board, 12/27/2018 Draft Environmental Impact Report (EIR) for the Lower Klamath Project License Surrender, is deficient for not providing consideration and analysis of a One Dam Removal Alternative for Iron Gate, Copco 1, Copco 2, and J.C. Boyle Dams, that explains any major detriments and major benefits incurred from--while leaving three of those dams permanently nonremoved--removing only each one of those dams.

Herewith now this February 25, 2019 I vote in rejection of, and against granting KRRC the water quality certification for the "Proposed Project" of removing the dams and associated facilities that together form the Lower Klamath Project (FERC Project No. 14083), that on September 23, 2016, the KRRC applied to the California State Water Resources Control Board to receive.

My additional comments on the California State Water Resources Control Board Draft Environmental Impact Report for the Lower Klamath Project License Surrender, are as follows:

ES-4 "Proposed Project Objectives The State Water Board has identified the following Proposed Project objectives, as required under CEQA Guidelines, section 15124, subdivision (b): In a timely manner: 1. Improve the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to Microcystis aeruginosa and associated toxins, water temperature, and levels of biostimulatory nutrients. 2. Advance the long-term restoration of the natural fish populations in the Klamath Basin, with particular emphasis on restoring the salmonid fisheries used for subsistence, commerce, tribal cultural purposes, and recreation. 3. Restore volitional anadromous fish passage in the Klamath Basin to viable habitat currently made inaccessible by the Lower Klamath Project dams. 4. Ameliorate conditions underlying high disease rates among Klamath River salmonids.

The objectives further the underlying purpose of the Proposed Project, which is the timely improvement of water quality related to the Lower Klamath Project within and downstream of the current Hydroelectric Reach and the restoration of anadromous access upstream of Iron Gate Dam (the current barrier to anadromy)." ES-17 "fish survival through fishways would be reduced as compared to through undammed stream reaches. " . . . " would not improve other water quality conditions". ES-18 "Because the dams and reservoirs would remain, they would still continue as an impairment to migration that is not present under the Proposed Project." ES-18 "However,

while this alternative would further the underlying purpose and related objectives of providing fish passage upstream of Iron Gate Dam, fish survival through fishways would be reduced as compared to through undammed stream reaches"

Rather than the immediately aforegiven oversimplistic ES-18 quote, California State Water Board might assert that "However, while this alternative would further the underlying purpose and related objectives of providing fish passage upstream of Iron Gate Dam, fish survival per fishways passage might be reduced as compared to passage through undammed stream reaches, depending on the fishways' construction and protection from poaching and predation, although fishways for the dams would be greatly shorter in length than river length from the dams to the dams' reservoir headwaters, and the dam reservoirs afford both greater protection from predation and poaching of

adult migrant fish than do many undammed stream reaches, and in the case of J.C. Boyle, Copco 1 and Iron Gate dams, much Upper Klamath Lake-like algae-sheltered shoreline habitat for juvenile fish--including anadromous fish--rearing and migration.

ES-19 ". . . elimination of whitewater recreation flows . . .", ". . . fish survival through fishways would be reduced as compared to passage through un-dammed stream reaches . . ."

Whitewater recreation flows could continue from winter and spring seasons-stored Klamath River water, and also could be provided per temporary curtailment of hydroelectric power generation accompanied with increased J.C. Boyle Dam water storage. J.C. Boyle Dam's water release doesn't have to be restricted to constant hydroelectric power production and fish habitat water flow. Assuming no fish habitat benefit of the Klamath River hydroelectric dam reservoirs, and no fish migration benefit of properly constructed and properly protected Klamath River hydroelectric dam fishways, is again oversimplistic (see ES-18 comment above).

ES-24 "However, the Proposed Project is a restoration project aimed at improving the aquatic ecosystem in the Klamath River over the long term."

The "Proposed Project"'s premise of "restoration" is an oversimplification, and likely a subterfuge, and it should rather be termed a "partial restoration", because the Klamath River is a well established multiple use--including agriculture irrigation, hydroelectric power, reservoir recreation, flood control, gold mining, remediated waste water transporting, waterfowl hunting, fire suppression, warm water nonnative game fish fishing, wildlife habitat, commercial fish harvesting, and log rafting--industrial river, and the "Proposed Project"s' "restoration" of the Klamath River towards a former wild and scenic status, excessively denies humanity of natural ecosystem-supportive Klamath River vital human life support, and is ambiguous due to current long term anthropogenically caused increasing global warming climate change, and increasing vital agricultural irrigation need (e.g., lowered Upper Klamath Basin water table), and global warmingreduced average annual Klamath River watershed snowpack storage, and increasing climate-protecting clean renewable energy need, and permanent loss of 70,000 homes worth of clean renewable hydroelectric power production. Indeed, Pacific Corp's "surrender of license" to KRRC for the purpose of the Proposed Project's

"Klamath River restoration" proposition, is a corrupt ploy effort to: Avoid future litigation about futurely installed dam fishways' fish passage, substitute pisciculture and commercial fish harvesting for agriculture, substitute fossil fuel-powered energy production for clean renewable 24 hours 7 days a week hydroelectric power, unnecessarily destroy both three very good hydroelectric dams and one nearly excellent hydroelectric dam.

ES-24 "It is clear that the Klamath River has significantly degraded water quality and aquatic resources, and that these ongoing impacts stem from multiple factors including operation of the hydroelectric facilities."

It is not so "clear" that Klamath River has "significantly degraded water quality and aquatic resources . . . that . . . stem from multiple factors including operation of the hydroelectric facilities", rather than ". . . that . . . stem . . . from multiple factors, including in the case of the hydroelectric facilities: (1) Primarily a lack of selective thermal mixing and withdrawal facilities, to release late summer and early fall Copco 1 Dam and Iron Gate Dam reservoirs' stratified waters, downriver in Klamath River of; (2) negligibly from the J.C. Boyle Dam facilities; (3) no water quality degradation from Copco 2 Dam facilities, and substantial aquatic resources degradation, that can easily be completely alleviated per fishways installation in Copco 2 Dam facilities.

In distinguishing the California Klamath River hydroelectric dam reservoirs' water quality contribution to the Klamath River, Upper Klamath Lake hypereutrophic water quality appears significantly to have much the same thermal chemistry as the California Klamath River hydroelectric dams' reservoirs' water quality, when Upper Klamath Lake's water quality is at equivalent temperatures to the California Klamath River hydroelectric dams' reservoirs' water quality temperatures. Climate change, diminished annual natural watershed water storage, and industrially modified (including irrigation, treated wastewater, urban and agricultural runoff) water flow are partly compensated for per the Klamath River dam reservoirs, as the reservoirs allow humanity to maintain water flow from Iron Gate Reservoir for 190 miles to the sea, and--per selective water

release from thermally stratified Iron Gate reservoir--to modify water temperature in the Klamath River from Iron Gate Reservoir for several miles downriver of Iron Gate Reservoir. Ammonia and CO2 that are produced from decomposition in the reservoirs, are also produced from the undammed river reaches, however the greater turbulence of the undammed river reaches mixes the ammonia and CO2 faster with the atmosphere than does J.C. Boyle, Copco 1--though not Copco 2--, and Iron Gate dams' reservoirs.

ES-24 "In looking at the range of benefits and impacts the State Water Board has identified the Proposed Project as the environmentally superior alternative."

I disagree. To me the "Proposed Project" is a "destroy the Klamath River hydroelectric dams and leave the river to nature" (quote of myself) alternative, that definitely is not the "environmentally superior alternative" for improvement of the multiuse Klamath River. Leaving Klamath River to dry out our farms and our urban wells, because there is no artificial water storage (Link River Dam is a diversion dam that raised Upper Klamath Lake water level very little, Keno Dam is an irrigation dam)

for the globally-warmed climate changed Klamath river, and not providing additional--or at least constantly providing--fish hatcheries to supplement salmonid harvest from the river, and disallowing multiple use of the dams whereof 15 miles of the Klamath River is able, per four reservoirs, to provide both warm and cool water aquatic habitat that is proven able to support both warm and cool water aquatic life--including abundant warm and cold water game fish--year round, and permanently losing 70,000 homes' worth of clean renewable hydroelectric power production, in exchange for a long term seasonally--per reduced watershed snowpack--diminished flow, globally warmed climate-changed river, that for the last 176.3-66 miles of its length to the sea, has both much the same chemical composition, and the same or greater seasonally warm water quality characteristics, that it has had for the immediately previous 15-20 years, is not the "environmentally superior alternative" that humanity needs to produce for the Klamath River's best environmental coexistence with humanity. The Klamath River is, and has long been, a multi-use industrial river and not a wild and scenic river.

Rather than the "Proposed Project", the "Continued Operations with Fish Passage Alternative" to retain the Klamath River hydroelectric dams, and to improve the dams where necessary with fishways, that are adequate for native and nonnative upper Klamath River fishes' ("upper" is used here to exclude sturgeon) year-round fish travel throughout the Klamath River, provides the Klamath River's best environmental coexistence with humanity. Also, Copco 2 Dam--with its oftentimes 46 minute reservoir pool replenishment time--provides no adverse environmental impact on the Klamath River, that--much similar to Link River Dam's effect on Link River--a fish ladder (complete with fish counting station), a fish screen, and a seasonally adjusted fish ladder and dam water release flow, can't adequately mitigate. (per a 1,150 cubic feet/second moderate river-flow rate, Copco 2 Dam's reservoir of 73 acre-feet water storage changes its water every 46 minutes).

The question about restoring the Klamath River, is not so much a question of a fish out of water, as it is a question of people out of water, and people out of a cool climate, and people out of fish, and people out of fossil fuel-powered electricity generation, and people out of clean renewable electricity production, and people out of agriculturally-produced food. Again, "destroy the Klamath River hydroelectric dams and leave the river to nature" is not the "environmentally superior alternative". Not for humanity's social and nature-dependant environment. Time and again the natural environment is deficient to provide for humanity's best long term survival (ex's: some infectious diseases, most tsunamis, dearth of natural bridges, dearth of natural boats, some landfall hurricanes, most tornadoes, some drought-strickened gravel-spawned fish eggs, etc.). From a legitimate public environment multiuse paradigm of the Klamath River, the Klamath River Hydroelectric Dams have provided 313 years of Klamath River clean renewable hydroelectric power production earth surface biocycle atmospheric emissions, for what could have been 313 years of 100% fossil fuel-powered electricity production atmospheric emissions.

ES-4 "The objectives further the underlying purpose of the Proposed Project, which is the timely improvement of water quality related to the Lower Klamath Project within and downstream of the current Hydroelectric Reach and the restoration of anadromous access upstream of Iron Gate Dam (the current barrier to anadromy)." ES-24 "However, the Proposed Project is a restoration project aimed at improving the aquatic

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ecosystem in the Klamath River over the long term."

First and foremost the Klamath River does not belong to the fish, the Klamath River belongs to humanity for humanity's best long term survival. Currently and for the most likely forseeable future, fish live year-round throughout the entire Klamath River, because the Klamath River's water is adequately good for the fish. Other than improvement of the Klamath hydroelectric dams with fish passageways and/or fish screens, where necessary for adequate upper Klamath River fish passage throughout the Klamath River, and additional fish hatcheries to help salmonids compensate against increasing global warming, ongoing climate change, and commercial salmon harvesting, there is no necessary restoration of the Klamath River.

Blaming Iron Gate Dam and/or Copco 1 Dam for the Klamath River's last 176.3-66 miles of water chemistry and water temperature, is overlooking the substantial chemical input from the Shasta, Scott, and Salmon rivers into the Klamath River, and the turbulence and surface area-caused rapid equilibration of Klamath River with its environment in the first 25 river miles immediately downstream from Iron Gate Dam. From the time Klamath River leaves Keno, Oregon, until the Klamath River passes Iron Gate Dam, Klamath Rivers' chemistry is mostly determined of its natural river bed composition, river bank runoff, rapid elevation change, atmospheric chemistry (including thermal, material composition, and precipitates), instream water springs, tributary creeks, biological activity, and 15 miles of dam reservoirs.

[4-108] "Temperature effects of the dams do not extend downstream of the Salmon River confluence (see Section 3.2.2.2 Water Temperature). Therefore, there would be no change in the impact of the Continuing Operations with Fish Passage Alternative in the Middle and Lower Klamath River reaches downstream from the confluence with the Salmon River, including the Klamath River Estuary and the Pacific Ocean nearshore environment." [3-25] "Downstream from the Salmon River (RM 66), summer water temperatures begin to decrease slightly with distance as coastal weather influences (i.e., fog and lower air temperatures) decrease longitudinal warming (Scheiff and Zedonis 2011) and cool water tributary inputs increase the overall flow volume in the Klamath River (Asarian and Kann 2013). In general, however, water temperatures in this reach still regularly exceed salmonid thermal preferences (less than 68F) during summer months."

I seriously doubt that Copco 1, Copco 2, and Iron Gate dams' reservoirs' water temperatures effect the Klamath River's water temperature greater than 25 miles downstream from Iron Gate Dam.

[4-108] "under the Continued Operations with Fish Passage Alternative, late summer/fall water temperature conditions would not move towards a condition that supports designated beneficial uses, including cold freshwater habitat (COLD), rare, threatened, or endangered species (RARE), and migration of aquatic organisms (MIGR) (North Coast Regional Board 2010) in the Middle Klamath River to approximately the confluence of the Salmon River" ES-4 "Proposed Project Objectives The State Water Board has identified the following Proposed Project objectives, as required under CEQA Guidelines, section 15124, subdivision (b): In a timely manner:" . . . "2. Advance the long-term restoration of the natural fish populations in the Klamath Basin, with particular emphasis on restoring the salmonid fisheries used for subsistence, commerce, tribal cultural purposes, and recreation. 3. Restore

volitional anadromous fish passage in the Klamath Basin to viable habitat currently made inaccessible by the Lower Klamath Project dams."

The statement "2. Advance the long-term restoration of the natural fish populations . . . with particular emphasis on restoring the salmonid fisheries . . . ." should be "Advance the long-term augmentation and partial restoration of the natural fish populations . . . with particular emphasis on augmenting and partially restoring the salmonid fisheries . . . ."

Per current and forseeably likely long term Klamath River water conditions, currently and for a medium-term forseeable future, all that Klamath River salmonids need to survive and thrive in the Klamath River, is adequate fish passageways and fish screens in all of the Klamath River hydroelectric dams, and very likely, additional fish hatchery artificial propagation to compensate for fish population increase-produced fish predation and fish harvest. Recall that juvenile fish are forage fish for larger fish and other predators, and that some Klamath River

salmonids rear in the mainstem Klamath River and the Klamath River estuary for a year or longer.

Proponents for Klamath River salmon like to note salmon die-offs near the Klamath River estuary, and within 66 miles of the Pacific Ocean, and at Iron Gate dam, that are due to water temperature and/or disease. Certainly Iron Gate dam-released water, is able to equilibrate with ambient environmental temperatures within both a few miles downriver of Iron Gate dam, and many miles upriver of the river's 66 river mile distance to the Pacific Ocean; and certainly salmon would swim up Klamath River past the Klamath River dams when all of those dams have adequate fish passageways, as does J.C. Boyle Dam at this time, rather than as salmon have every year since Iron Gate Dam was built in 1962, migrated from the Pacific Ocean to Iron Gate Dam, and then either remained at Iron Gate dam to die of natural and/or water temperature-related cause in consequence of no fish ladder at Iron Gate dam, or returned downriver to find better water temperature, and then not so finding die of natural and/or water temperature related cause. Certainly also, water releases from the Trinity River Trinity and Lewiston Reservoirs, and from the J.C. Boyle, Copco 1, and Iron Gate reservoirs, have helped optimize the Klamath River's wildlife habitat. ("Discharge from Lewiston Dam can play an important role in regulating water temperatures downstream in the mainstem Trinity and lower Klamath rivers."). [The Influence of Lewiston Dam Releases on Water Temperatures of the Trinity River and Lower Klamath River, CA, April to October, 2014, Magneson and Chamberlain]

I find that global warming-caused climate change allowing, Chinook salmon shall continue to migrate to Iron Gate Dam's location, providing the Iron Gate Dam's water releases are properly adjusted and timed to provide upstream migrating adult chinook salmon with sufficiently cool Klamath River water temperature. Of recent years--e.g. 2014--apparently the Klamath River near-estuary Ich-caused large salmon population deaths, and the year 2002 Klamath River near-estuary bacteria-caused large salmon population deaths, are particularly indicative of warm-water related salmon fatality, that is not due to the Klamath River hydroelectric dams, in consequence of those deaths having occurred shortly after the salmon entered the Klamath River, 150-190 miles distant to Iron Gate Dam. (Ref.: Klamath River Basin Hydrologic Conditions Prior to the September 2002 Die-Off of Salmon and

Steelhead Water-Resources Investigations, USGS Report 03-4099, https://pubs.usgs.gov/wri/2003/4099/wri03-4099.pdf; "[4-108] "Temperature effects of the dams do not extend downstream of the Salmon River confluence (see Section 3.2.2.2 Water Temperature")

The Klamath River's Salmonids can survive 71 degree water temperature for several days, and so as individual fish should be able to migrate safely in the Klamath River between the Salmon River confluence and the Copco 1 headwaters within a few days of each year during the immediately forthcoming 50 years. Retaining Copco 1 and Iron Gate dams' water storage during the immediately forthcoming 50 years, even when that water storage is greatly depleted for fish habitat, would greatly benefit Klamath River valley agriculture and power generation, and could per careful water release/water storage regimen, beneficially assist Klamath River water environment from Iron Gate Dam to the Klamath River Estuary.

By way of a comparison with California State Water Board Klamath River salmon migration temperatures findings, here is a quote about Columbia River Bonneville Dam salmon migration temperatures: "Adult fall Chinook salmon and steelhead have evolved to migrate in the Columbia River during relatively warm water conditions, but temperatures have warmed in recent history because of the effects from development and management of the Federal Columbia River Power System and from regional climate change. Fish that are migrating in 21 to 25°C (70 to 77°F) water are within the zone of tolerance and at the upper end of this range, likely under significant thermal stress." [Temperature and handling of adult salmon and steelhead at Bonneville Dam 24 January 2010 Christopher A. Peery, Fish Biologist Idaho Fisheries Resources Office U.S. Fish and Wildlife Service, DOI Ahsaka, Idaho]

ES-4 "Proposed Project Objectives The State Water Board has identified the following Proposed Project objectives, as required under CEQA Guidelines, section 15124, subdivision (b): In a timely manner:" . . . "4. Ameliorate conditions underlying high disease rates among Klamath River salmonids."

The Klamath River hydroelectric dams reduce habitat for the salmon diseases Ceratomyxa shasta and Parvicapsula minibicornis that both inhabit the same polychaete host, Manayunkia speciosa, because Manayunkia speciosa prefers shallow running water over an exposed pebble and small stone riverbed, rather than a dam reservoir silted bottom; thus removing the Klamath hydoelectric dams' reservoirs, will increase Klamath River presence of the Klamath River salmon-killing salmonid parasites, Ceratomyxa shasta and Parvicapsula minibicornis, per restoring free-flowing river environment that favorably supports the parasites' common polychaete worm host, Manayunkia speciosa (e.g., see Journal of Parasitology 93(1):78-88. 2007).

ES-4 "Proposed Project Objectives The State Water Board has identified the following Proposed Project objectives, as required under CEQA Guidelines, section 15124, subdivision (b): In a timely manner: 1. Improve the long-term water quality conditions associated with the Lower Klamath Project in the California reaches of the Klamath River, including water quality impairments due to Microcystis aeruginosa and associated toxins, water temperature, and levels of biostimulatory nutrients."

Klamath River from Keno Dam to Iron Gate Dam, shall continue to receive the

majority of its water from hypereutrophic phosphorous and nitrogen rich Upper Klamath Lake water, that also contains enough Microcystis aeruginosa to amply, adversely to some uses (such as swimming, dog swimming, and consumption of year round reservoir-resident fish) effect Klamath River water there, and that will continue to greatly support substantial benthic periphyton growth all the way to near the Klamath River estuary. Copco 1 Dam and Iron Gate Dam reservoirs are deep enough so that they each seasonally thermally stratify, and J.C. Boyle Dam reservoir's near dam 40 foot depth often has cooler water than the reservoir's surface water, so that all three reservoirs allows both cool water and warm water ecosystems to coexist within them, and so that fish are able to occupy and migrate in different thermal layers within each of those reservoirs. The Klamath River Hydroelectric Dam reservoirs also provide some constant settling [4-28] of biostimulatory nutrients--including nitrates and phosphates--that the reservoirs receive from Upper Klamath Lake water.

[page 3-81] " However, within the general uncertainty of climate change projections, results from the two models correspond reasonably well and indicate that water temperatures in the Upper Klamath Basin are expected to increase on the order of 2°F to 5°F between 2012 and 2061. RBM10 results also indicate that, even with warming of water temperatures under climate change, the primary long-term effect of dam removal downstream of Iron Gate Dam is still anticipated to be the return of approximately 126 miles of the Middle Klamath River, from Iron Gate Dam (RM 193.1) to the Salmon River (RM 66), to a more natural thermal regime (Perry et al. 2011). Model results indicate that the annual temperature cycle downstream from Iron Gate Dam would shift forward in time by approximately 18 days under the Proposed Project, with warmer temperatures in spring and early summer and cooler temperatures in late summer and fall immediately downstream from the dam."

Allowing for the EIR's declared 50 year [pages 3-80, 4-107] climate change-caused Klamath River water thermal increase projection, I approve of implementing the "Continued Operations with Fish Passage Alternative", and utilizing the PacifCorp-collected, and of some Pacificorp ratepayers paid, Klamath River hydroelectric dams deconstruction ("J C Boyle Dam Removal Copco & Iron Gate Dams Removal") fund, to provide Upper Klamath River fish-adequate fishways in all of the Klamath River hydroelectric dams.

With our current administration's emphasis on United States of America infrastructure improvement whereof we may "make America great again", I herewith now vote that the United States of America Department of the Interior should purchase and manage the Klamath River hydroelectric dams and the Link River hydroelectric facilities, so that the dams and hydroelectric facilities are responsibly managed as public property per the United States of America's national citizenship, and that the United States of America Department of the Interior should, where necessary with fish ladders and/or fish screens that are adequate for all upper Klamath River fish, improve the Klamath River hydroelectric dams and Link River hydroelectric facilities, so that the Klamath River dams and Link River hydroelectric facilities continue to provide much multiuse-including hydroelectric power production--of the Klamath River and Link River respectively.

Per requiring some Pacificorp ratepayers to fund deconstruction of the Klamath River hydroelectric dams and the Link River western settlement historic-hydroelectric facilities, without Pacificorp allowing those

ratepayers to opt out of funding that deconstruction, Pacificorp coerced many Pacificorp ratepayers to provide decontruction-designated funding, for deconstruction that those ratepayers did not and do not approve of. Humanity doesn't need Pacificorp requiring that the Klamath River hydroelectric dams be destroyed, and humanity doesn't need Pacificorp donating or surrendering the Klamath River hydroelectric dams to KRRC (Klamath River Renewal Corporation) for deconstruction of those dams.

Money that from PacifiCorp ratepayers who, and California taxpayers who, prefer to have opted out of paying for Klamath River hydroelectric dam deconstruction, has been scheduled and/or collected for the subversive to American security--including power security, agricultural security, fish habitat security, Klamath Basin municipal water works security, and national defense security-purpose of destroying the Klamath River hydroelectric dams, should be re-purposed to fund installation of Upper Klamath River anadromous fish migration-adequate fish passageway--including fish screens--facilities, in each Klamath River basin Klamath River hydroelectric project, where those fish passageway facilities both do not exist adequately, and are necessary for adequate Klamath River fish passage past the hydroelectric project(s).

[Page 3-728] "Since it is planned in the 2017 IRP for PacifiCorp to add new sources of renewable power or purchase RECs to comply with the California RPS, and removal of the reservoirs would result in a reduction in methane production, it is not anticipated that the replacement of the hydroelectric energy from the Lower Klamath Project dam complexes would result in an increase in GHG emissions from non-renewable power sources. As such, GHG impacts from replacement of the hydroelectric energy from the Lower Klamath Project dam complexes is determined to be less than significant. Significance No significant impact."

California State Water Board's above statement manifests false carbon and greenhouse gas (GHG) economy. Here's why: The Lower Klamath Project dams' reservoirs' do not produce anthropogenic GHG, they produce biologic "biochemistry as usual" earth surface biocycle carbon compounds, that are either recycled through the biosphere, or initially allocated primarily into the earth's surface--including earth surface waters and upper earth crust terrain--and the earth's atmosphere, per weathering--including geologic forces--and inanimate chemical reactions. Furthermore, the "Proposed Project" deconstruction of the Lower Klamath Project dams, results in less PacifiCorp clean renewable energy production infrastructure to add new PacifiCorp clean renewable energy production infrastructure to; the "Proposed Project" deconstruction of the Lower Klamath Project dams requires much anthropogenic fossil fuel combustion into earth's atmosphere; and construction of new PacifiCorp clean renewable energy production infrastructure most likely requires substantial anthropogenic fossil fuel combustion in consequence of a current and immediately forthcoming dearth of clean renewable energy power and electrically powered heavy duty construction equipment to construct new PacifiCorp clean renewable energy production infrastructure of. Also Pacificorp's proposed purchase of renewable energy certificates (RECs) does not guarantee replacement of deconstructed Lower Klamath Project dams with new--not currently or futurely existent--clean renewable power production facilities, and certainly doesn't guarantee replacement water storage for the 11+ miles of Klamath River water storage that would be lost with deconstruction of Copco 1, Copco 2, and Iron Gate dams' reservoirs.

[4-107] "In the long term, climate change is expected to cause general increases in water temperatures. The historical data record indicates that mainstem water temperatures have increased, on average, approximately 0.05°C (0.09°F) per year between 1962 and 2001 (Bartholow 2005) such that climate change may already be affecting Klamath River water temperatures. Projecting the Bartholow (2005) estimate of an average annual temperature increase 50 years into the future, water temperatures would increase approximately 2-3°C (3.6-5.4°F). . . . Considering together the available sources for climate change predictions, annual average water temperatures in the Middle and Lower Klamath River are expected to increase within the period of analysis on the order of 1-3 °C (1.8-5.4 °F)."

Projecting similar long term climate change-caused general water temperature increases on Upper Klamath Lake, a 50 year increase of 1-3 °C (1.8-5.4 °F) in naturally dammed--of a 4,137.8 feet natural dam elevation heigth--8 feet average depth Upper Klamath Lake, seems readily plausible to occur, however I don't recommend draining the lake so as to dredge a cool water channel through the lake for fish habitat. Similarly I do not believe that because of ongoing global warming-caused climate change, humanity must loose 11+ miles of Klamath River reservoir water storage. With installation of depth-graduated fish ladders and fish screens, that allow fish passage per different reservoir depth levels; and installation of depth selective water withdrawal pipes, that allow reservoir water withdrawal and mixed reservoir water level water release past both Copco 1 and Iron Gate dams' reservoirs; water quality from immediately below Iron Gate Dam to the Salmon River confluence with Klamath River, may be substantially augmented, improved, and controlled per a Copco 1 and Iron Gate dams' reservoirs' management, that always seasonally prioritizes and ascribes no greater than thirdly importance to hydroelectric power production of the reservoirs, and secondary importance to the reservoirs' provision of both the reservoirs' fish habitat, and the Klamath Rivers' fish habitat from Iron Gate Dam to the Salmon River confluence with the Klamath River, while limiting the Klamath River's agriculture irrigation primary importance to a primary importance that always allows Klamath River fish habitat-adequate Keno Dam flow into the Klamath River.

For most of the Klamath River Hydroelectric Project's occurrence, the project has been operated primarily to provide continuous hydroelectric power production. So as to better accomplish fair multiuse--including agriculture irrigation, fish habitat, and hydroelectric power production--of the Klamath River resource, and in consequence of climate change-caused watershed snowpack storage reduction, hydroelectric dams' blockage of fish migrations, and increased demand and supply for clean, renewable energy production, the Klamath River Hydroelectric Dam facilities and the Link River hydroelectric facilities should be owned and operated of the United States of America Department of the Interior. Since Pacificorp has opted to deconstruct the Klamath Hydroelectric dams, the U.S.A. Department of the Interior should be able to inexpensively purchase the dams. And since Pacificorp ratepayers have accrued a Klamath Hydroelectric dams deconstruction fund that could be applied towards installing fishways in the Klamath Hydroelectric dams, the U.S.A. Department of the Interior should be able to both purchase the dams and financially assist in equipping the dams with Upper Klamath River fish-adequate fishways.

[3-204] "Dams (e.g., Link River Dam, Iron Gate Dam, Lewiston Dam, etc.) have

eliminated access to much of the historical spring-run spawning and rearing habitat and are partly responsible for the extirpation of at least seven spring-run populations from the Klamath-Trinity River system (Myers et al. 1998)."

Since after Copco 1 was built in 1912-18, Link River Dam was built in 1918-21 with a fish ladder, and with a low elevation water drop chute stilling basin that is yet preferred per many Link River fish for passing Link River Dam, even though the west end of Link River Dam has of recent years been equipped with the second lowest fish ladder now in the U.S.A, I don't find how Link River Dam has eliminated access to much of the historical spring-run spawning and rearing habitat and is partly responsible for the extirpation of at least seven spring-run populations from the Klamath-Trinity River system.

[3-204] "Spring-run Chinook salmon upstream migration is observed during two-time periods— spring (April through June) and summer (July through August) (Strange 2008) (Table 3.3-4). Snyder (1931) also describes a run of Chinook salmon occurring in the Klamath River during July and August under historical water quality and temperature conditions."

Per the "Continued Operations with Fish Passage Alternative", a reintroduction of the Klamath River spring salmonids migrations to and from the Upper Klamath River basin and Upper Klamath Lake drainage, should result in a robust and abundant annually recurrent Upper Klamath River anadromous salmonid population! The "Continued Operations with Fish Passage Alternative", allows humanity to financially affordably try utilizing fish passage-adequate artificial fishways, fish hatcheries (e.g. Iron Gate hatchery and possibly Fall Creek hatchery), and water storage-enhanced fish habitat (e.g. Iron Gate and Copco 1 dams), to allow, maintain, support, and provide a recurrent annually abundant Klamath River anadromous salmonid population with. If eight years after the Klamath River hydroelectric dams are equipped with adequate Upper Klamath River anadromous fishpassage fishways, Copco 1 Dam and/or Iron Gate Dam anadromous fish assistance and support is found excessively deficient, remedial measures that may then include removing Copco 1 Dam and/or Iron Gate Dam, will be much more qualifiable and quantifiable, than humanity's current Iron Gate Dam to Keno Dam, Klamath River healthy--and harvested(!)--red band trout population-based, Upper Klamath River salmonid-sustainability estimates.

[3-29] "While J.C. Boyle Reservoir does not thermally stratify, there are still large summertime variations in dissolved oxygen with depth observed in J.C. Boyle Reservoir that result in bottom waters in the reservoir having lower dissolved oxygen concentrations than surface waters (Raymond 2009a, 2010a; see Appendix C, Figure C-29 for more detail). This variation can affect dissolved oxygen concentrations further downstream in the California portion of the Hydroelectric Reach." [3-230] "The 21-mile long riverine reach between J.C. Boyle and Copco No. 1 reservoirs is divided into two reaches: the 4.6-mile long J.C. Boyle Bypass Reach, which receives bypass flows from J.C. Boyle Dam, and the 17-mile long Peaking Reach, which receives variable flow from hydroelectric operations (see also Section 2.3.1 J.C. Boyle Dam and Associated Facilities). The downstream 6.2 miles in California is designated by CDFW as a Wild Trout Area with the whole reach managed by CDFW for wild trout, including angling restrictions and reduced stocking, and habitat enhancements targeted for native trout (CDFG 2005).

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The reach from the J.C. Boyle Powerhouse to the Oregon-California state line is designated as a National Wild and Scenic River."

J.C. Boyle Reservoir is small, receives Spencer Creek inflow at J.C. Boyle Reservoir's headwaters, sometimes is not greatly oxygenated from the Klamath River's Keno Dam to J.C. Boyle Dam Reservoir riffle-running flow, has a total volume retention/replenishment time of only 1.53 days, is about 52% in a wide shallow valley and 48% in a shaded narrow canyon, is 40 feet deep in the canyon near J.C. Boyle Dam, and is at 3800 feet elevation that is 14.8 miles and near 950 feet in elevation distant to the California portion of the (J.C. Boyle) Hydroelectric Reach. That 950 feet of elevation difference provides much ample river turbulence opportunity, including many violent rapids, for Klamath River's dissolved oxygen to completely equilibrate with ambient Klamath River canyon environment--including hot springs--conditions, regardless of J.C. Boyle Reservoirs' dissolved oxygen level. (per a 1,150 cubic feet/second moderate river-flow rate, J.C. Boyle Dam's reservoir of 3,495 acre-feet water storage, completely changes water every 1.53 days)

Currently I am without additional time to comment on the California State Water Resources Control Board's draft Environmental Impact Report (EIR) for surrender of the Lower Klamath Project license. Hopefully California State Water Resources Control Board, realizes that the hypereutrophic Klamath River's water quality, without a major cataclysmic event such as a large and long term volcanic eruption, will within the immediately forthcoming several centuries, most likely never--with or without dams--naturally be high elevation unpolluted and naturally nonenriched alpine environment pristine.

Respectfully yours,

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Post Script: For the purpose of insuring and protecting delivery and reception of this epost, I will send greater than one copy of this epost.