

Creating Regulatory Process from Scratch:

Lessons from Money-Losing Power Projects
on Butte Creek and Other Northern California
Streams

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Overview

- How some California hydropower projects became uneconomic
- There's a clear process to relicense hydro projects that allows broad public participation
- There's no set process to transfer or decommission hydro projects and no clear avenues for public participation
- How river advocates can shape process for good outcomes when hydro projects go south

Hydropower Projects Don't Become Liabilities Overnight

- Many CA projects started with mining
- State of the art at commissioning remarkable for engineering but often lacking durability
- Effects of sedimentation often underestimated
- Many projects poorly maintained
- Economics of 50-100 years ago placed little value on in-river benefits like fish (no accounting for external costs)

Confluence of Mining Era Canals, DeSabra – Centerville Project



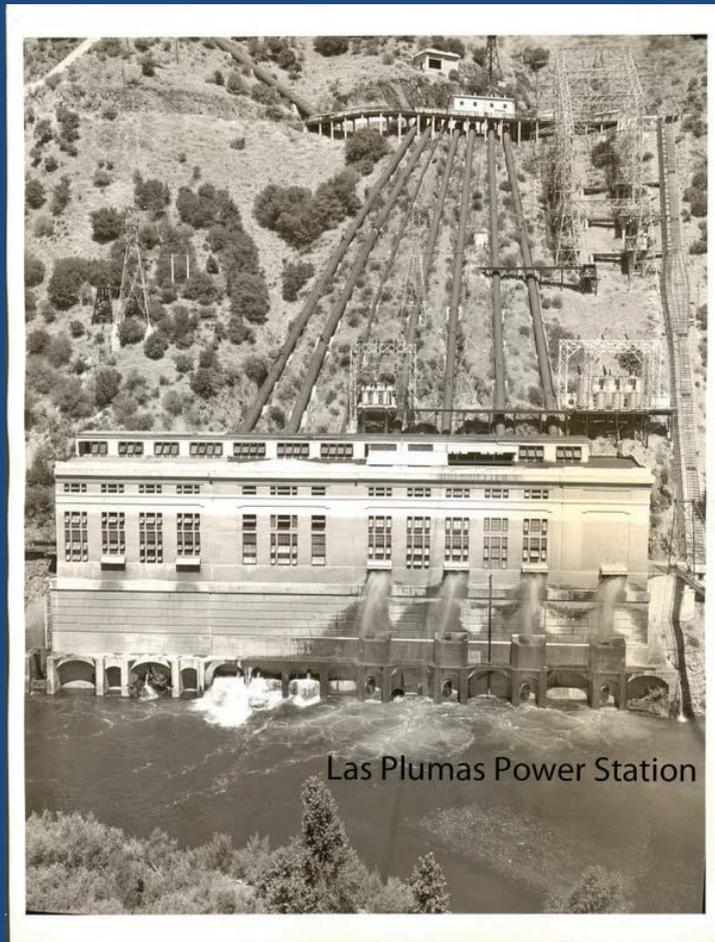
Caribou 1 Powerhouse 2017



In California from 1910-1950, Hydro Was King

- Allowed development of the grid and consolidation by PG&E
- Provided widespread baseload power
- No direct fuel costs
- Major re-plumbing of upper elevation watersheds in CA based on principle of capturing all available water

PG&E Picked Up Assets and by 1930 Dominated Power Market in Nor Cal



1950-1970: Golden Age of Dam Construction in CA

- PG&E hydro projects completed or expanded:
 - NF Feather River (“stairway of power”)
 - McCloud – Pit
- PG&E financed half of major dams in exchange for control of power and most power revenues
 - New Exchequer (Merced River)
 - New Bullards Bar (North Yuba River)
 - Hell Hole and French Meadows (Middle Fork American River)

Rock Creek Dam NF Feather River (1950)



New Bullards Bar Dam (1969)



Photo credit: Yuba County Water Agency

1970-2010

Ch-Ch-Changes for Hydro Everywhere

- National Environmental Policy Act (1970) , Clean Water Act (1972), Endangered Species Act (1973)
- Reform of Federal Power Act § 4(e) requires Federal Energy Regulatory Commission to give non-power values equal consideration (1986)
- 1990's – 2000's relicensings and new laws vastly expand public role
- 2003 FERC's Integrated Licensing Process

FERC's Integrated Licensing Process

- Became default relicensing process in 2003
- Seven identified opportunities for public input
- Meeting-intensive process that favors collaborative development of studies and of environmental and recreational improvements
- Defined timelines and deadlines
- 5 year process

But Wait, There's More!

Post-Licensing Processes

- Clean Water Act Water Quality Certification from State Water Board, including CEQA
- Biological Opinions for listed species from NMFS and/or U.S. Fish & Wildlife
- There are no set timelines for these processes
- There is often tug-of-war between licensees and agencies over scope, CEQA, costs
- Best case timeline: 4-5 years

1990's-Present

Changes in Hydro Operators' Culture

Old paradigm

- More water diverted from rivers is better for society
- The “DAD” method (Decide, Announce, and Defend)
- All hydropower projects are important parts of an integrated system

New official policy

- Environmental protection is also important
- Collaboration with agencies and sometimes others
- Hydro projects must pencil on stand-alone basis

PG&E Business Model for Relicensing Has Changed – to a Point

- Environmental protection is important, but more water diverted from rivers is still better
- PG&E will collaborate to start, but when it determines it has reached impasse will revert to the DAD method
- Delay is still preferred to difficult decisions, and relicensing is often a forcing mechanism

2017: PG&E Starts Letting Projects Go

- There is still a (variable) bias in favor of existing conditions (the “endowment effect”), BUT as of 2017 PG&E is cutting loose some uneconomic projects.
- Southern California Edison is also casting off some projects (e.g. San Geronio)
- THERE IS NO DEFINED PROCESS OR PUBLIC PROCESS FOR LICENSE TRANSFER OR SURRENDER

Different Types of California Hydro: Which Are on the Bubble?

- Higher elevation projects, primarily power
 - A. Peaking and ancillary services
 - B. Run of river only
- Higher elevation projects, water and power
 - A. Peaking and ancillary services
 - B. Run of river only
- Rim dam projects, primarily water supply
 - A. Peaking, ancillary services
 - B. Incidental generation during irrigation deliveries

Higher Elevation Water and Power Projects

- Old upper elevation hydro projects often came with consumptive water rights
- PG&E largely carried water supply as a minimally reimbursed cost
- Examples: El Dorado Project (Placerville), Drum-Spaulding Project (Auburn), Potter Valley Project (Potter Valley ID), DeSabra (Butte Creek water right holders to West Branch Feather River water)

DeSabra – Centerville and Potter Valley: Water Delivered Free or Very Low Cost

- PG&E moves water from West Branch Feather to Butte Creek
- Butte Creek diverters don't pay PG&E
- Potter Valley Irrigation District pays PG&E for maximum 50 cfs, up to 19,000 acre-feet per year (afy) on contract at a very modest rate
- Water not delivered to PVID is considered abandoned and is up for grabs at no cost in lower Russian River

Potter Valley Powerhouse

Water passes through here



Water is “abandoned” here



El Dorado contrast

- El Dorado Project has 15,080 afy of associated consumptive water rights
- PG&E transferred El Dorado Project to El Dorado Irrigation District (EID) in 1999, giving EID \$15 Million to repair of the flood damage to the El Dorado Canal and Powerhouse
- EID has spent more than \$40 Million on project works since purchasing project
- EID received value by gaining control of water rights and infrastructure

Why El Dorado was different than DeSabra and Potter Valley

- El Dorado water supply beneficiary was willing to pay for operations to deliver water
- El Dorado water supply beneficiary was capable of operating hydro project facilities
- No DeSabra – Centerville Project or Potter Valley Project water supply beneficiaries have stepped up to assume operation and associated risks of project facilities

Run of river projects without ancillary services not economic



Butte Creek at Pool 4, August 2005 PG&E Photo

Uneconomic project example

DeSabra – Centerville

- Project imports West Branch Feather water to Butte Creek, cools Butte Creek in summer, benefits spring-run salmon
- No paying water supply beneficiary
- High maintenance; deferred PH rebuild
- Power values for run-of-river generation down about 50% from 2006
- Added mitigation costs from relicensing
- PG&E withdrew license application Feb 16, 2017

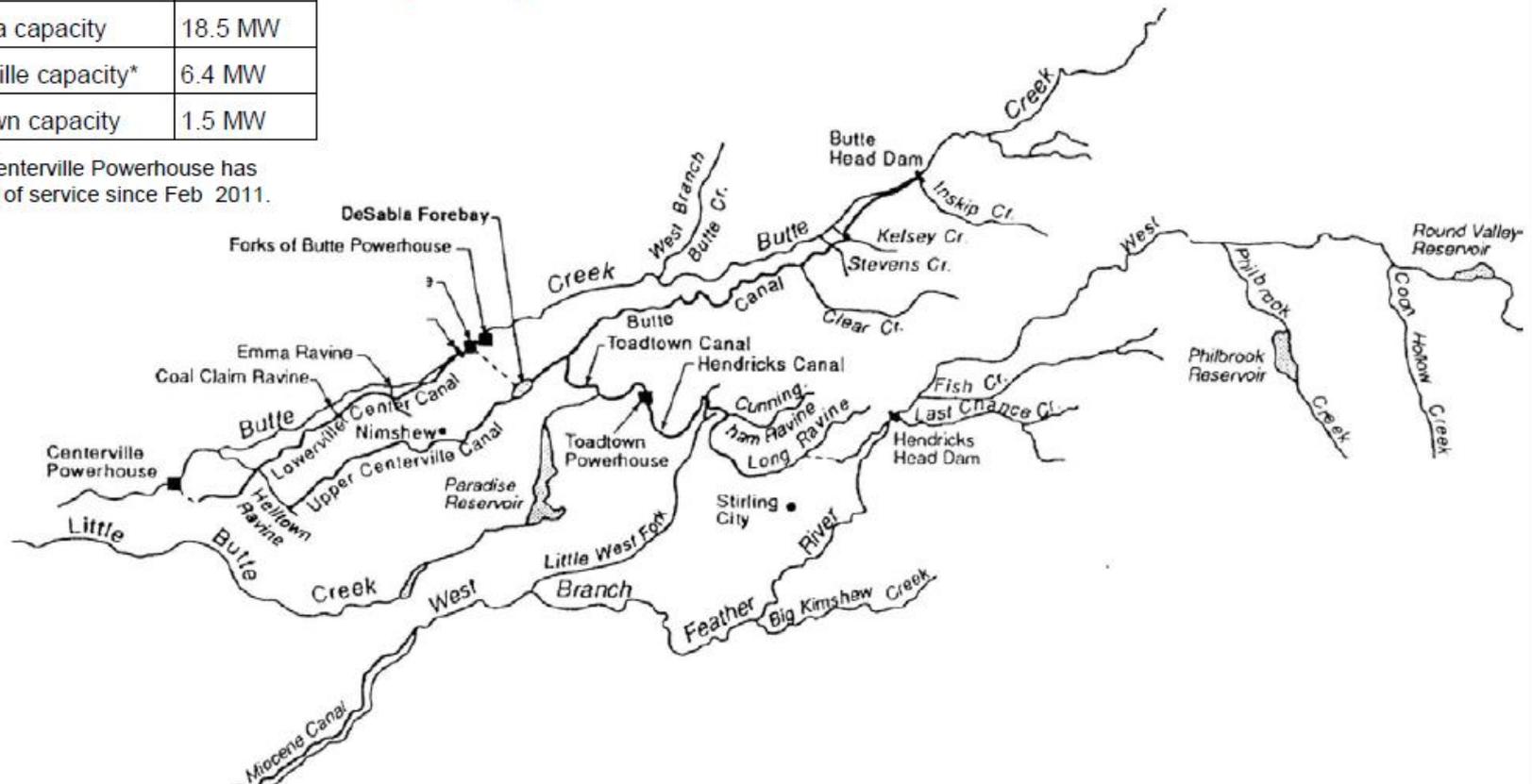
DeSabra – Centerville Project Map

Powerhouse Facts

| | |
|-----------------------|---------|
| DeSabra capacity | 18.5 MW |
| Centerville capacity* | 6.4 MW |
| Toadtown capacity | 1.5 MW |

*Note: Centerville Powerhouse has been out of service since Feb 2011.

Project Map



FERC response to PG&E withdrawal of license application for DeSabella Project

- March 3, 2017:
“PG&E’s motion to withdraw its application is disallowed, in order to give notice to the public of the opportunity to express interest in acquiring the project.”

PG&E Process Proposal 5/9/17

Accepted by FERC 6/16/17

1. Compile data, prepare documents (2-3 mos.)
2. Issue request for offers to purchase (3-4 mos.)
3. Evaluate offers, select “counterparty” (1-2 mos.)
4. Negotiate Asset Sale and License Transfer (6-18 mos.)
5. Seek and obtain regulatory approvals (6-18 mos.)

All Current Important Process for DeSabra Is Behind Closed Doors

- Private negotiations between PG&E and prospective new operators
- Non-disclosure agreements for negotiators
- Several offers received; no details released
- Vague “progress reports” from PG&E
- Limited contact between NGO’s and PG&E
- Limited contact between agencies and PG&E

Future Process Unclear

- Will FERC require any new project operator to start a licensing process from scratch?
- Would the cost of relicensing make project acquisition uneconomic?
- Will prospective operators seek concessions from agencies or regulators to reduce costs?
- How will agencies or regulators evaluate any potential concessions, and in what process?

Centerville Schoolhouse Workgroup

- Began from site visit of MWD biologists to Butte Creek, hosted by Friends of Butte Creek
- Fish agencies, Forest Service, State Board staff, NGO's, MWD, local residents, one group of potential buyers
- Different perceptions of potential benefits
- Recognized value of coordinated effort
- Hold monthly meetings or calls

Workgroup entities focused on fisheries defined two key interests:

1. Maintain or increase availability and reliability of water export from West Branch Feather River to Butte Creek.
2. Maintain or reduce water temperatures in Butte Creek compared to the FERC license and water quality certification conditions that were pending when PG&E withdrew.

Workgroup Gained Perspective on Interests of Potential Operators

Provide reasonable return on investment by:

1. Improving power revenues.
2. Developing revenue from other beneficiaries.
3. Exploring public funding for env. benefits.
4. Reducing costs and liabilities of acquisition
5. Reducing uncertainty regarding costs
6. Developing transfer process w/o starting over on relicensing.

Will workgroup cooperation succeed?

Positives

- Key stakeholders working together
- Collective knowledge of project and resources
- Multiple relationships in community
- Extensive negotiation experience

Difficulties

- No affirmative response from PG&E
- No buyer acceptable to PG&E
- No contact with prospective buyers
- Reluctance to modify previous decisions

FERC Unclear on Process for License Transfer

- PG&E seeks to sell Narrows 1 Project on lower Yuba River to Yuba County Water Agency
- YCWA asked FERC to include Narrows 1 in ongoing relicensing of Yuba River Development Project
- FERC delayed relicensing Narrows 1 but denied request to merge licensing processes
- To be seen if YCWA will acquire and relicense

Will FERC and PG&E Let NGO's Help Shape Transfer or Surrender Process?

- Neither FERC nor PG&E are particularly creative or flexible
- Agencies often freeze in face of hard choices
- PG&E and National Hydropower Association efforts to weaken agencies in legislation creates a lousy environment for cooperation
- Entities pursuing their interests to the exclusion of others often create bad outcomes
- NGO's and agencies may need to be hard-assed somewhere to shake things up, like insisting on removal of all abandoned infrastructure

Thank you!

