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Removing Obstacles to Dam Removal in the Federal Energy Regulatory Commission's Regulation of Hydropower Projects

Former Marmot Dam Site, Sandy River, Oregon

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Environmental and Natural Resources Law Center
Oceans, Coasts and Watersheds Project

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Executive Summary

Hydropower projects owned by a non-federal entity are regulated under the Federal Power Act (FPA). Administered by the Federal Energy Regulatory Commission (FERC), the FPA establishes a comprehensive regulatory framework to coordinate and oversee development of the country's waterways. While not all hydropower projects use dams, many do. As with dams used for other purposes, in some cases removal of hydropower dams is in the public interest.

Among the factors that influence whether a dam is removed, regulatory requirements play a unique role by catalyzing consideration of removal as a management option. The FPA is situated as the only statute that provides authority to comprehensively regulate dams.

Key components of the FPA's framework that provide opportunities to advance dam removal include: (1) licensing processes that require periodic reassessment of whether a project remains in the public interest and facilitate collaboration between dam owners and public and private stakeholders, (2) requirement to give equal consideration to development and non-development values and authority to condition licenses to mitigate project impacts, and (3) authority to oversee how projects are decommissioned when they will no longer be licensed.

Thirty-nine dams have been removed while under FERC jurisdiction. In all but one instance, the licensee voluntarily proposed removal. Project economics has been the most common driver of dam removal—impacted by regulatory compliance and maintenance costs—with settlements playing a role in almost 70% of removals.

While there is great potential to leverage FERC's regulation of hydropower projects to elevate dam removal as a management option and to remove dams that are no longer in the public interest, obstacles exist in both the FPA's framework and FERC's implementation of its regulatory authority.

Currently, dam removal is an outcome of a small portion of FERC's regulatory decisions, and, in the vast majority of administrative actions, FERC has not considered dam removal as a management option. The Department of Energy's 2023 Hydropower Market Report identified 68 FERC orders issued between 2010 and 2022 ending hydropower licenses. During that same time, FERC relicensed 121 projects. Sixteen FERC-regulated dams were removed during this period. In the same period, 1,067 dams were removed in the United States.

In the next decade, a significant number of FERC-regulated projects are expected to enter regulatory processes—particularly, relicensing, license surrender, and compliance proceedings—through which there will be opportunities to advance dam removal. Between 2018 and 2037, over half of licensed projects will enter relicensing. A survey of hydropower

owners found that 36.4% are actively considering decommissioning a project.[1] In addition, FERC has identified over 80 nonoperational projects, which may be subject to FERC's authority to terminate their license.

How FERC addresses decommissioning in these processes will impact whether and how dams are maintained or removed. The end of FERC's regulatory authority often presents the last time a project owner will be required to engage in a comprehensive assessment of and to address a project's suite of impacts. As a result, once a project is no longer licensed, project owners frequently have less incentive to consider dam removal, meaning obsolete dams often remain on the landscape and the public has less recourse to address their impacts.

This report examines how FERC's regulation of hydropower projects impacts decisions to remove dams and identifies the following eight regulatory obstacles, organized from greatest to least impact on dam removal, and proposes policy solutions to address each obstacle.[2]

Obstacle	Policy Solution
Approach to assessing environmental impacts biases against dam removal.	- Amend regulations to remove license revocations and terminations from regulatory actions categorically excluded from NEPA analysis. - Revise policy on assessment of project impacts and alternatives analysis to (1) use an environmental baseline of the environment without the project, (2) remove presumption that retirement and decommissioning will only be considered in "rare instances," and (3) for dams serving multiple purposes, assess whether non-hydropower purposes may be met through other means.
Unclear license surrender process.	- Amend regulations to clarify requirement to file decommissioning plan and for consultation in all surrender applications. - Amend FPA to provide standard to assess license surrenders. - Establish policy to consider river basin context and project cumulative impacts in determining appropriate decommissioning requirements. - Adopt guidance clarifying consultation with state agencies with successor jurisdiction over project. - Amend FPA and regulations to authorize FERC to accept license surrender and decommissioning at the end of a project license without soliciting new applications.
Inadequate financial assurance measures to ensure compliance with license conditions and ability to pay decommissioning costs.	- Adopt policy requiring financial assurance measures as part of licensing to ensure ability to implement license conditions and for decommissioning costs. - Amend FPA to establish a general fund for dam removal costs.

[1] Ear to the River, Hydropower Industry Research of Owners for Owners, 20-21 (March 2022), available at https://www.kleinschmidtgroup.com/wp-content/uploads/2023/09/EarToTheRiver_FINALMar2022-email-version.pdf.

[2] There are frequently multiple pathways to implement the proposed policy solution—from most to least political and procedural obstacles are statutory amendments, rulemaking, and changes in agency policy or practice. The report generally proposes the procedurally easiest pathway to effect the policy change; however, in some cases this pathway can make the change less durable and more vulnerable to judicial review—with administrative changes typically being easier to undo and more vulnerable to legal challenge, particularly when there is not clear statutory authority.

Obstacle	Policy Solution
Uncodified authority to order project retirement and dam removal.	- Amend FPA to expressly authorize FERC to (1) order project retirement and decommissioning at relicensing, (2) impose decommissioning conditions in license surrender and license revocations, and (3) impose decommissioning costs on the licensee. - Amend regulations to authorize decommissioning conditions in implied surrenders.
Approach to compliance violations incentivizes abandonment of noncompliant and obsolete projects.	- Amend FPA to authorize imposition of monetary penalties as part of license revocation. - Amend regulations to require consultation in compliance actions. - Change FERC policy to provide public notice of and allow intervention in license terminations.
Transfer practices allow licensees to avoid liability and impede dam removal.	- Develop financial assurances policy for license and exemption transfers. - Amend regulations to require approval to transfer an exemption. - Develop guidance on assessment of license transfer for purposes of license surrender and project decommissioning.
Perpetual licenses for exempt projects.	- Amend regulations to require periodic reassessment of exempt small capacity hydroelectric projects.
Settlement policy requiring close nexus between mitigation measures and project impacts and boundaries hampers use of settlement agreements to advance dam removal.	- Update policy for hydropower settlements to (1) broaden scope of mitigation measures FERC will accept as license conditions and (2) authorize reference to non-enforceable settlement provisions in licenses to memorialize settlement parties' intent and facilitate consideration of non-enforceable provisions in licensing decisions.

Table of Contents

Executive Summary ..... **i**

Introduction **1**

Section I: Overview of Hydropower Dams **3**

1.1 Background on Hydropower Dams 3
1.1.1 Development of Hydropower Projects 3
1.1.2 Hydropower and Climate Change 4

1.2 Regulation of Dams 5

1.3 Federal Energy Regulatory Commission and Hydropower Regulation 6
1.3.1 Role of Federal Energy Regulatory Commission 6
1.3.2 Federal Energy Regulatory Commission's Regulation of Hydropower Projects 11

Section II: Removal of Federal Energy Regulatory Commission Regulated Dams **18**

2.1 Federal Energy Regulatory Commission Regulatory Processes and Dam Removal 19
2.1.1 Dam Removal and License Denial at Relicensing 20
2.1.2 Dam Removal and License Surrender 25
2.1.3 Dam Removal and Compliance Actions 30
2.1.4 Dam Removal and Licensing Processes 38

2.2 History of Dams Removed While Under Federal Energy Regulatory Commission Jurisdiction 46

2.3 Regulatory Obstacles and Recommended Policy Changes 48

Conclusion **69**

Appendix A: Dams Removed While Under Federal Energy Regulatory Commission Jurisdiction **70**

Appendix B: Termination By Implied Surrender and Revocation Orders **74**

Introduction

Humans have used dams for thousands of years to impound and control the flow of water for a variety of purposes, including for water supply, flood control, power production, navigation, and recreation. While dams provide development benefits, they also bring significant tradeoffs to public resources. Dams degrade ecosystems—by altering the flow regime of waterways, trapping sediments, fragmenting habitat, and changing the temperature and chemical composition of waters. Dams also modify community lifeways—displacing communities and disrupting cultural and spiritual traditions and practices. Finally, dams present safety risks to downstream communities—risks that increase as dams age.

Changing values around the role of rivers and the environment and an improved understanding of the environmental effects of dams have shifted how we consider and balance their benefits and harms. These changing values—which have fostered a growing movement to remove dams—are reflected in the regulation of dams, which is increasingly considering how to minimize and mitigate dams' negative impacts.

A variety of factors influence whether a dam is removed, including ownership costs, safety concerns, environmental impacts, presence of endangered or iconic species, funding, and public support. Among these influences, the regulatory framework under which a dam is managed is often a key factor in whether the dam is removed. For example, states with high numbers of successful dam removals correlate to states with robust regulatory frameworks that provide the structure to support dam removal decisions.[1]

Regulatory processes support dam removal in several ways. First, regulatory processes often work in tandem with other factors by providing a formal process to assess the impacts of dams and build consensus for removal. Second, regulatory frameworks incentivize dam removal by imposing compliance costs, e.g., to address safety and environmental impacts, which force dam owners to factor the social costs of dams into decisions about whether to maintain the dam. Absent these requirements, while the environmental and social costs of a dam are often significant, in most instances these costs are not borne by the dam owner. Finally, regulatory frameworks can provide authority to require the removal of dams when the public benefits of removal outweigh the benefits of maintaining the dam.

The Federal Power Act (FPA), which governs the regulation of hydropower projects owned by non-federal entities that have a nexus to federally owned or managed lands or waters, provides unique opportunities to influence dam removal decisions.[2] Administered by the Federal Energy Regulatory Commission (FERC), the FPA includes:

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[1] *See, e.g.*, J. Ryan Bellmore, et al., Status and Trends of Dam Removal Research in the United States, WIREs Water 2017, 4:e1164, 2 (March/April 2017).

[2] 16 U.S.C. §§ 791-825r.

- A comprehensive licensing scheme, including a requirement that all licensed projects be relicensed a minimum of every 50 years, which provides a process to assess the benefits and impacts of dams and a decision-making framework that facilitates collaboration between dam owners and public and private stakeholders.
- Substantive requirement to equally consider development and non-development values in licensing decisions and authority to condition projects to address resource impacts.
- Authority to oversee the disposition of projects, including to require the removal of dams that will no longer be subject to FERC's jurisdiction.

While the FPA provides unique opportunities to remove dams, both the FPA's structure and FERC's implementation of its regulatory authority create obstacles to removal. Identified obstacles include unclear authority to direct and processes and standards to determine the disposition of projects when they will no longer be licensed, practices that frustrate the consideration of dam removal as a management option, and practices and policies that incentivize dam owners to abandon obsolete projects without consideration of a project's long-term impacts.

The result of these regulatory barriers is a failure to capitalize on the unique opportunities in FERC's regulation of hydropower projects to remove dams that no longer represent the best use of public waters.

Report Organization

Section I of this report provides background on the use and regulation of hydropower projects in the United States. It begins with a brief overview of hydropower dams, the current landscape of dams in the United States, and how dams are regulated. With that background, this report then describes the FPA's legal framework for and FERC's approach to regulating hydropower projects. Readers knowledgeable with the regulation of hydropower projects may choose to refer directly to Section II.

Section II of this report describes the FPA's regulatory processes through which dam removal has occurred and explains how these processes have impacted dam removal decisions. This report concludes by identifying where these processes create obstacles to dam removal and recommending policy changes to improve consideration of dam removal in these processes. Case studies are included throughout to illustrate how FERC's regulatory processes influence decisions to remove dams.

Section I: Overview of Hydropower Dams

1.1 Background on Hydropower Dams

Among the many purposes for which humans constructed dams, the generation of power from moving water—hydropower—is one of the earliest. Early hydropower projects used water to physically move a paddlewheel, which would in turn move equipment to make products.[3] The first use of hydropower to generate electricity—hydroelectricity—occurred in 1878.[4] The first hydroelectric power plant, which generated electricity for multiple customers, came online in 1882.[5]

Hydroelectricity quickly took hold as a cheap and an abundant energy source; by the early 20th century hydropower accounted for 15% of the country's electricity generation.[6] Between 1920 and 1980, the United States nearly tripled its hydropower capacity, supported by significant federal investments.[7] At its height, hydropower provided up to 40% of the nation's energy.[8] While the growth of other energy sources has displaced much of the country's hydropower generation, it remains an important source of energy. Today, hydropower provides 80 gigawatts, or 6% of the country's electricity capacity, and is a source of power in all but two states.[9]

1.1.1 Development of Hydropower Projects

There are three types of conventional hydropower projects:[10] (1) impoundment, which impounds water, typically on the waterway, before passing the water through a generating facility as the water is released downstream; (2) diversion or run-of-river, which diverts water into a constructed channel and then through a powerhouse located off the river channel before the water is returned to its natural channel downstream of the diversion; and (3) pumped

[3] Hydropower Explained, U.S. Energy Information Administration, https://www.eia.gov/energyexplained/hydropower/ (last visited June 20, 2024).
[4] International Hydropower Association, A Brief History of Hydropower, https://www.hydropower.org/iha/discover-history-of-hydropower (last visited June 20, 2024).
[5] Hydroelectricity is produced by water physically turning a turbine that powers a generator to produce electricity. The amount of energy produced by water is a combination of the amount of water passing a point (i.e., the flow) and the elevation change at that point (i.e., the fall). Hydropower Explained, *supra* note 3.
[6] History of Hydropower, Office of Energy Efficiency & Renewable Energy, https://www.energy.gov/eere/water/history-hydropower (last visited June 20, 2024).
[7] *Id.*
[8] *Id.*
[9] Hydropower Basics, Office of Energy Efficiency & Renewable Energy, https://www.energy.gov/eere/water/hydropower-basics (last visited June 20, 2024).
[10] Types of Hydropower Plans, Office of Energy Efficiency & Renewable Energy, https://www.energy.gov/eere/water/types-hydropower-plants (last visited June 20, 2024).

storage,[11] which cycles water between a lower and upper reservoir, generating electricity when water is released from the upper reservoir through a powerhouse.

In addition to conventional projects, new models of generating hydropower, often designed to reduce environmental impact, are being deployed. These include conduit projects, which produce electricity from water flowing through non-hydropower infrastructure, such as irrigation or municipal water pipes or canals.

While not every hydropower project uses a dam, many do. Dams typically serve three functions in hydropower projects: to impound water, to create elevation change, and to divert water.[12] Impounding water allows the project to control when water is available for power generation and maximizes the power potential of the project by increasing the volume of water flowing through turbines. Dams can also create elevation change, which increases the water's fall and thereby the power capacity of a project. Finally, diversion dams divert water as part of run-of-river projects.

Hydropower dams also vary in size. Importantly, the size of a dam does not always correlate to its power capacity or environmental impacts—in some cases projects with large dams have less power potential and, depending on location and management, small dams may have significant environmental impacts.

1.1.2 Hydropower and Climate Change

Climate change is both amplifying the importance of hydropower and challenging its operation.[13] Hydropower's characteristics as a renewable fossil-free energy source[14] with flexible storage,[15] and power generation capacity,[16] has elevated it as an important energy source as the United States responds to climate change. This framing has led to a renewed

[11] Reservoirs may utilize a natural waterway or can be man-made. Pumped storage projects with a continuous connection to a natural water way are termed open-loop pumped storage; projects located off a natural waterway are termed closed-loop pumped storage.
[12] Types of Hydropower Plants, *supra* note 10.
[13] Hydropower Explained, *supra* note 3. In the early 2000s hydropower provided up to 96% of country's renewable power. Managing Water in the West: Hydroelectric Power, Bureau of Reclamation (July 2005), available at https://www.usbr.gov/power/edu/pamphlet.pdf.
[14] While there is no consensus about whether hydropower is a "green" energy source—given the environmental impacts of dams and increasing data about carbon emissions from reservoirs—it remains a significant source of renewable energy, providing 31.5% of the United States total renewable energy. Hydropower Explained, *supra* note 3.
[15] Hydropower provides 94% of the country's energy storage. Hydropower Basics, *supra* note 9.
[16] The ability to restart hydropower generators without external power (i.e., "black start") makes hydropower important for grid resilience and "peaking power"—to respond to periods of high energy demand. Jose R. Garcia, et al., Hydropower Plants as Black Start Resources (May 2019), available at https://www.energy.gov/sites/prod/files/2019/05/f62/Hydro-Black-Start_May2019.pdf; Managing Water in the West: Hydroelectric Power, Bureau of Reclamation (July 2005), available at https://www.usbr.gov/power/edu/pamphlet.pdf.

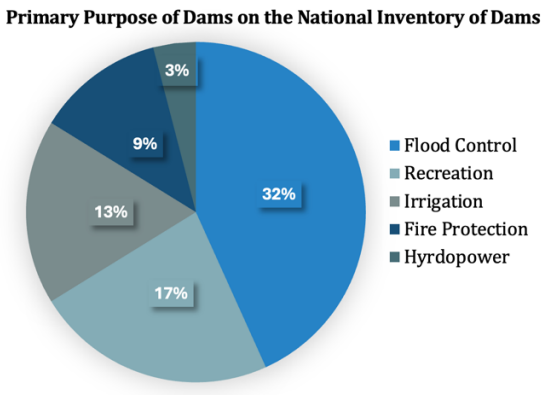
interest by Congress in accelerating the development of hydropower capacity, particularly lower impact models, including retrofitting existing dams, conduit hydropower, and closed-loop pumped storage. The focus of congressional efforts has been to remove perceived regulatory barriers in licensing projects and, more recently, incentivizing development through tax credits.

However, hydropower is also being challenged by climate change. Reduced streamflow from aridification and drought lowers and, in some cases, stops generating capacity. More intense floods increase the risk of infrastructure failure.

1.2 Regulation of Dams

While the precise number of dams in the United States is unknown, an ongoing inventory effort has identified 533,251 dams to date.[17] Once complete, the inventory may include over 1 million dams.

The National Inventory of Dams (NID), a federal database that tracks large and high-risk dams, identifies almost 92,000 dams.[20] The majority of these dams identify their primary purpose as flood control followed by recreation, irrigation, fire protection, and hydropower. However, dams typically serve multiple purposes.



The entity responsible for regulating individual dams depends on a variety of factors including the dam's location, owner or operator, purposes, and size.

Most dams are privately owned and regulated at the state level. Non-federally owned dams that are not part of a hydropower project may be regulated by the state where the dam is located. Each state sets its own jurisdictional thresholds for regulated dams—typically based on the dam's size or the storage capacity of the reservoir.[21] Each state also varies in the scope of its regulatory program. All but one state regulates the safety of jurisdictional dams.[22] Few states have programs that specifically regulate dams for non-safety impacts, such as environmental or

[17] National Aquatic Barrier Inventory & Prioritization Tool, Southeast Aquatic Resources Partnership, https://aquaticbarriers.org/ (last visited June 21, 2024).
[20] U.S. Army Corps of Engineers, National Dam Inventory, https://nid.sec.usace.army.mil/#/ (last visited June 5, 2024). While currently the most complete data set, the inventory is still incomplete; ownership information is poorly reported—2,900 inventoried dams did not identify an owner.
[21] *See, e.g.*, Cal. Wat. Code § 6002 (California regulates dams over 6 feet in height with more than 50 acre-feet of storage or 25 feet in height with more than 15 acre-feet of storage.); N.H. Rev. Stat. Ann. § 482 (New Hampshire regulates all dams over 4 feet in height and storing at least 2 acre-feet of water.)
[22] Association of State Dam Safety Officials, Summary of State Laws and Regulations on Dam Safety, 1 (May 2020).

fisheries impacts. Instead, when these impacts are regulated, they are typically part of other programs, such as water quality regulation.

Only 3% of dams are federally owned.[23] These dams are managed by the agency that owns the dam and operated consistent with any governing federal legislation and the individual agency's administrative rules and policies.[24] United States Army Corps of Engineers and Bureau of Reclamation manage the majority of federally owned dams, at 740 and 487 dams respectively.[25] Federal dams serve a variety of purposes, including flood control, water storage, and hydropower.

Dams that generate electricity and are not owned by a federal entity are regulated under the FPA.[26] Of existing hydropower dams—the NID identifies 3% of dams with hydropower as their primary purpose—a little under 2% are regulated under the FPA. These dams are both privately and publicly owned.

Finally, non-federally owned dams that are not regulated by the FPA and are not within a state's jurisdiction are unregulated.

1.3 Federal Energy Regulatory Commission and Hydropower Regulation

The following explains the role of FERC in regulating hydropower projects, the legal frameworks that guide FERC's regulation of hydropower projects, and the regulatory processes through which FERC regulates hydropower projects.

1.3.1 Role of Federal Energy Regulatory Commission

FERC is an independent federal agency, comprised of five Commissioners,[27] responsible for regulating the electricity and transmission sectors, including power markets, electricity transmission, natural gas pipelines and storage, interstate oil pipelines, and hydropower. The regulation of hydropower projects is FERC's oldest area of authority.

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[23] Anna E. Normand, Dam Safety Overview and the Federal Role, Congressional Research Service (Oct. 24, 2019), available at https://crsreports.congress.gov/product/pdf/R/R45981.
[24] *Id.* at 18.
[25] USACE Dam Safety Program (Dec. 16, 2021), https://www.usace.army.mil/Missions/Civil-Works/Dam-Safety-Program/ (last visited June 20, 2024); Bureau of Reclamation, About Us, https://www.usbr.gov/main/about/fact.html (last visited June 20, 2024). Other agencies include U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Tennessee Valley Authority, Department of Energy, International Boundary and Water Commission, and Department of Defense. Anna E. Normand, *supra* note 21 at 19.
[26] *Id.* at Summary.
[27] 16 U.S.C. § 792.

The first hydropower license was issued in 1921 to the Niagara Falls Power Company.[28] Within its first three years, FERC licensed 400 hydropower projects.[29] Today, FERC oversees 1,700 licenses.[30] As of 2016, 30% of these dams were high hazard—defined as dams where the failure of the dam, due either to their size or location, could result in damage to property or loss of human life.[31]

Hydropower is regulated through the Office of Energy Projects—one of twelve offices within FERC. Within this office, FERC's regulatory functions are separated into three divisions. The Division of Hydropower Administration and Compliance is responsible for administration of and compliance with licenses, permits, and exemptions. The Division of Hydropower Licensing is responsible for licensing and issuing exemptions for regulated projects. Lastly, the Division of Dam Safety and Inspections is responsible for ensuring the safety of FERC jurisdictional projects.

Legal Authorities

The FPA, first passed as the Federal Water Power Act in 1920, is the statutory authority for FERC's regulation of non-federal hydropower projects.[32] Through the FPA, Congress established a framework for federal oversight of the development and operation of non-federal hydropower projects. Congress centralized oversight of licensing and compliance with FERC—originally the Federal Power Commission—and tasked FERC with ensuring hydropower projects align with the public's interest in the development of public waterways.

The FPA and FERC's oversight of hydropower projects has transformed over time, reflecting evolving public values, energy priorities, and understanding of the role of river systems and impacts of dams.

As originally passed, the FPA's primary purpose was to coordinate and facilitate the development of competitive, cheap, and widely distributed power sources.[33] To accomplish this goal, Congress created a comprehensive regulatory scheme that balanced the need for orderly development (through a federal licensing requirement), with the aim of incentivizing the development of hydropower projects that were the best use of a valuable public resource (through provisions that provided for competition among license applicants, priority for

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[28] Marla Barnes, Tracing the Timeline: 101 Years of the Federal Power Act, NHA Powerhouse (June 7, 2021), https://www.hydro.org/powerhouse/article/tracing-the-timeline-101-years-of-the-federal-power-act/ (last visited June 20, 2024).
[29] *Id.*
[30] This includes 1018 licensees and 614 exemptions. Licensing, Federal Energy Regulatory Commission, https://www.ferc.gov/licensing (last visited June 20, 2024).
[31] Hydropower Primer: A Handbook of Hydropower Basics, Federal Energy Regulatory Commission, 45 (Feb. 2017), available at https://www.ferc.gov/sites/default/files/2020-05/hydropower-primer.pdf.
[32] Federal Water Power Act, Pub. L. No. 66-280, 41 Stat. 1063 (1920). The FPA, renamed in 1930, is codified at 16 U.S.C. Chapter 12, Federal Regulation and Development of Power, with four subchapters: I- Regulation and Development of Water Power and Resources, II Regulation of Utility Companies Engaged in Interstate Commerce, III Licensees and Public Utilities, and IV State and Municipal Water Conservation Facilities.
[33] Cole, Daniel H., The Federal Power Act's Controversial Municipal Preference: The Merwin Dam Dispute and Legislative Proposals to Amend Federal Hydro-Licensing Procedures, 7 Energy Law Journal, 374-75 (1986).

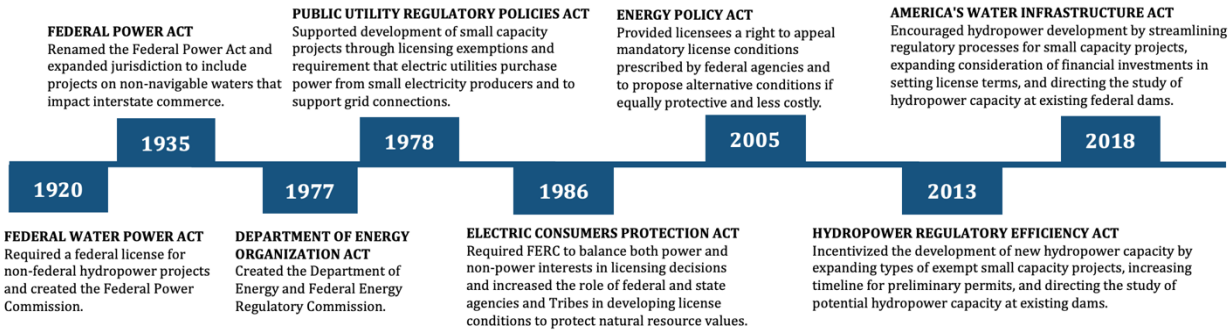
municipal entities, and financial certainty with long license terms and federal buy-outs). Congress also included two important provisions for resource protection—authority for federal land managers to impose license conditions to ensure consistency with the purposes of the land reservation and for federal fisheries agencies to impose license conditions to secure fish passage.[34]

Following the environmental movement of the 1960s and 1970s, Congress passed the Electric Consumers Protection Act (EPCA) to elevate environmental and other non-development values in FERC's oversight of hydropower projects.[35] The passage of the EPCA reflected a growing prioritization of environmental protection and a modern understanding of the complex suite of benefits and harms posed by hydropower development and the broader public benefits of river systems—considerations that were largely absent from the FPA. Amendments included:

- Requiring FERC in authorizing projects to give equal consideration to power development and the purposes of energy conservation, the protection, enhancement and mitigation of damage to fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality.
- Requiring FERC to condition licenses to best achieve both the power development and non-development interests in the waterway.
- Authorizing state and federal resource agencies to recommend conditions to mitigate project impacts on the environment, fish and wildlife, and other public interests.

Since the EPCA, amendments to the FPA have largely focused on streamlining what have been framed as overly onerous and complex regulatory processes with the goal of increasing non-traditional hydropower development.

Federal Power Act Timeline of Amendments



[34] 16 U.S.C. § 797(e); *Escondido Mutual Water Co. v. La Jolla Band of Mission Indians*, 466 U.S. 765 (1984).
[35] Pub. L. No. 99-485 ,100 Stat. 1243 (1986) (made key changes to sections 797(e), 803(a)(1), 803(j)). The EPCA clarifies that this preference does not apply as part of a relicensing process involving an original licensee. In original license proceedings, the FPA provides a preference to municipal and state entities. *See* 16 U.S.C. § 800(a).

Other Statutory Frameworks

While the FPA is FERC's enabling law, several other federal statutes—principally related to the protection of the environment and fish and wildlife—also direct and constrain FERC's implementation of the FPA.

These statutes influence FERC's oversight in three key ways: (1) imposing procedural obligations on FERC licensing activities, (2) imposing substantive obligations on FERC to mitigate environmental and resource impacts, and (3) authorizing federal and state agencies to impose license conditions.

Statute	Relationship to Hydropower Licensing
National Environmental Policy Act	Requires federal agencies to evaluate the potential environmental effects of a proposed action. The agency may prepare an Environmental Assessment to determine potential impacts. If the activity will have a significant impact, the agency must prepare an Environmental Impact Statement. Assessments identify the purpose of the action and anticipated environmental effects and reasonable range of action alternatives.
Clean Water Act	Prohibits federal agencies from issuing a license that may result in the discharge of pollutants to a navigable water without a certification from relevant states or authorized Tribes that the activity will not result in a violation of water quality standards. A state or Tribe may impose conditions to protect water quality that FERC must include in the license.
Endangered Species Act	Requires federal agencies to determine whether a proposed action may affect threatened or endangered species or their habitat and, if yes, consult with relevant federal fish and wildlife agencies to determine if the project is likely to jeopardize the species. If the project is found to jeopardize a listed species, the resource agency will propose mitigation measures to prevent jeopardy to the species. FERC includes these measures in its license to prevent ESA liability for "taking a species."
Coastal Zone Management Act	Restricts federal agencies from issuing a federal permit or license unless the state finds that the proposed action will not impair the state's coastal management framework. The license applicant must obtain a state certification that a project complies with the state's coastal zone management program. The state may condition its certification to ensure consistency; FERC includes these conditions in the project license.
National Historic Preservation Act	Requires consultation with state Historic Preservation Offices about the effect of a proposed action on places eligible for listing on the National Register of Historic Places.

Statute	Relationship to Hydropower Licensing
Marine Mammal Protection Act	Requires federal agencies to assess and mitigate the impacts of a project on marine mammals.
Fish and Wildlife Coordination Act	Requires coordination with federal and state fish and wildlife agencies when a federal project will result in control, impoundment, or modification of a stream or water body.
Wild and Scenic Rivers Act	Prohibits FERC from licensing projects located in designated wild and scenic river corridors or that will impair the wild and scenic resource values of designated rivers.

Administrative Regulations

Administrative regulations, policies, guidance, and orders all guide how FERC implements its authority under the FPA. FERC's administrative regulations are codified in Title 18.[36] Key regulations related to dam removal include:

Regulation	Provision Effect
18 C.F.R. 4	Requirements and processes for filing preliminary permits, exemptions, and original license applications.
18 C.F.R. 5	Requirements and process for the Integrated Licensing Process.
18 C.F.R. 6	Requirements and process for surrendering a license and terminating a license when the licensee fails to begin or complete project construction.
18 C.F.R. 9	Requirements and process for transferring a license.
18 C.F.R. 12	Rules for FERC's administration of project safety.
18 C.F.R. 380	Rules for FERC's implementation of NEPA.
18 C.F.R. 385	Rules for intervention in proceedings, how to request rehearing and appeal.
18 C.F.R. 388	Rules for when and how FERC will provide notice of proceedings and orders.

[36] Chapter 1 provides regulations related to FERC's administration of the FPA, with provisions related to hydropower projects in Part 4 through 16 and generally applicable provisions and procedural rules in Parts 1 through 3 and Parts 375 through 399.

FERC adopts policies that formalize FERC's view with respect to the implementation of its legal authorities. Prior to issuing a policy statement, FERC requests input from relevant agencies, the regulated community, and other stakeholders.

FERC also develops informal guidance that, while nonbinding, clarifies FERC's practices in implementing the FPA and its regulations and policies—e.g., handbooks on licensing, license administration, and NEPA implementation.

Commission administrative orders resolve matters related to specific disputes and are only binding with respect to the issues raised in that dispute. While these orders address specific cases, they also serve as precedent for how FERC will apply its legal authority in similar factual circumstances.

Finally, individual project licenses act as a source of regulatory authority. The FPA broadly authorizes FERC to condition licenses consistent with the FPA and empowers FERC to enforce compliance with license terms and conditions. As a result, when FERC includes a condition, it becomes enforceable against the licensee.

1.3.2 Federal Energy Regulatory Commission's Regulation of Hydropower Projects

The FPA establishes a comprehensive structure for the regulation of hydropower projects from development to retirement. The cornerstone of the FPA's regulatory scheme is its licensing framework, which serves as the mechanism to ensure that hydropower projects are and, importantly, remain in the public interest.

The FPA requires non-federal entities to obtain a license or exemption from licensing prior to constructing, maintaining, or operating a hydropower project.[37] In issuing licenses, the FPA directs FERC to balance both power and non-power development benefits and to condition licenses to ensure the project is best adapted to a comprehensive plan for developing the waterway.[38] The FPA authorizes FERC to issue licenses for up to 50 years,[39] which protects project investments.

Congress paired these long license terms with a comprehensive relicensing requirement, which requires licensees to apply for a new license at the end of the license term. The relicensing requirement "preserve[s] . . . the opportunity to reevaluat[e]" whether the hydropower development remains the best use of the land and waters occupied by the project.[40]

[37] 18 C.F.R. Part 4.
[38] 16 U.S.C. § 803(a)(1).
[39] *Id.* § 799.
[40] *Project Decommissioning at Relicensing*, 60 Fed. Reg. 339, 341 (Jan. 4, 1995) (citing S. Rep. No. 1338, 90th Cong., 2d Sess. 2–3 (1968)).

Once issued, FERC administers the license to ensure compliance with its terms and conditions. When a project will no longer generate hydropower, FERC oversees whether and how the project is decommissioned.

FERC Jurisdiction

The FPA makes it unlawful for a non-federal entity to construct, operate, or maintain a hydropower project without a license from FERC if the project (1) is located on navigable waters,[41] (2) is located on federally owned lands or reservations, (3) uses water from a federal dam, or (4) was constructed after 1935, located on a non-navigable stream that Congress has jurisdiction over under the Commerce Clause, and affects interstate commerce. The FPA sites exclusive authority to license projects with FERC.

Under the FPA, FERC regulates "project works," which are defined as the "physical structures of the project,"[42] e.g., reservoir, water conduit, storage and primary transmission lines, and all water rights and lands used by the development. Together, the project works comprise the "project," which is defined as the "complete unit of development."[43] Projects most often, but do not always, include dams.

Projects seeking an initial license may involve construction of new project works. However, today it is common for projects to utilize existing infrastructure from retired hydropower projects or dams that serve other purposes. Projects also vary in their size and may include multiple dams.

Licensing and Exemptions

FERC's licensing authority is the foundation of its regulation of hydropower projects. The licensing process is the vehicle through which FERC, federal and state resource agencies, Tribes, and the public assess a project's benefits and impacts and develop conditions to mitigate project impacts. The structure of the licensing process, including what parties get to engage and when, is critical for developing licenses that meet the FPA's standard that projects be "best adapted for a comprehensive plan for improving or developing a waterway."[44]

Types of authorizations

In implementing the FPA, FERC issues preliminary permits,[45] exemptions,[46] and licenses.[47] Preliminary permits are issued before a project license and preserve the permit holder's priority to file a license application, allowing the permittee to explore the feasibility of developing the

[41] 16 U.S.C. § 796(8) (defining navigable waters).
[42] *Id.* § 796 (12) (project works).
[43] *Id.* § 796 (11) (project).
[44] *Id.* § 803.
[45] *Id.* § 798.
[46] *Id.* § 823.
[47] *Id.* § 797.

project without substantial financial risk that FERC will grant a development permit to another party.[48]

While the FPA generally requires all projects to obtain a license, Congress—with the goal of accelerating hydropower development—has exempted[49] or reduced licensing requirements for projects with smaller generating capacity or that are sited in a location or in a manner that reduces their environmental impacts.[50] Subject to one exception,[51] these projects must still apply to FERC to obtain an exemption, which operates like a license in prescribing the terms and conditions the project must operate under. Once issued exemptions are perpetual and must be affirmatively surrendered by the exemption holder.[52]

Smaller capacity projects that do not qualify for an exemption[53] may apply for a minor license, which allows FERC to waive FPA requirements except for license term.[54] All other projects must comply with FERC's standard licensing process and are subject to all provisions of the FPA.

Licensing processes

Subject to FERC approval, licensees may choose among three licensing processes. The default and newest is the Integrated Licensing Process (ILP).[55] Applicants may request to use the Traditional Licensing Process (TLP) or the Alternative Licensing Process (ALP).[56]

While the licensing processes are distinct, they share common elements.[57] Each process begins with a pre-application process that includes filing of a notice of intent, completion of a pre-application document (PAD), which outlines existing information about the project, and the development of additional project information and effects—termed study plans—to

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[48] Preliminary permits are issued for three-year terms, with a possible two-year extension, and subject to public notice and comment. 18 C.F.R. § 4(f). Because a preliminary permit does not confer rights or authorities beyond preserving a permittee's priority with respect to a license application, FERC's review of a preliminary permit application is generally limited to assessing a permittee's qualifications. *See, e.g.*, *Three Mile Falls Hydro, LLC*, 102 FERC ¶ 61,301 (2003) (Order Denying Rehearing). FERC will deny a preliminary permit when a federal land manager or Tribe objects to a project located on their land.

[49] Projects qualifying for exemption have (1) 40 MW of installed capacity or less or (2) 10 MW installed capacity and that rely either on an existing non-federally owned dam or on natural stream features. 16 U.S.C. § 823.

[50] Projects qualifying for an expedited licensing process are closed-loop pumped storage projects and projects developed at existing dams. *Id.* §§ 823f, 823e; 18 C.F.R. Part 7.

[51] Congress wholly exempts Qualifying Conduit Facilities—projects with under 40 MW installed capacity that use non-federal infrastructure—from compliance with the FPA. 16 U.S.C. § 823a.

[52] *See, e.g.*, 18 C.F.R. §§ 4.101-4.108 (small capacity hydropower projects).

[53] Existing or proposed projects with generating capacity of less than 1.5 megawatts, an existing or proposed project that would generate less than 10MW and use only an existing dam, and proposed projects with less than 10MW qualify for a Minor License. *Id.* § 4.60(a).

[54] 16 U.S.C. § 803(i). FERC administrative rules identify twelve sections of the FPA that it may waive in a Minor License. 18 C.F.R. § 4.60(c).

[55] *Id.* Part 5.

[56] *Id.* § 5.3(c).

[57] Licensing Process, Federal Energy Regulatory Commission, https://www.ferc.gov/industries-data/hydropower/licensing/licensing-processes (last visited June 20, 2024).

supplement the existing information disclosed in the PAD. Following the pre-application process, the applicant submits a license application, triggering FERC to complete any required environmental assessment under NEPA. Lastly, FERC issues a license with any prescribed conditions.

Within this general framework, the licensing processes are different in terms of the timing of public involvement and environmental review.[58] The ILP integrates FERC's environmental review as part of the pre-application process. This structure provides early opportunity for FERC and resource agencies with authority to condition licenses to cooperate in the development of study information and to resolve potential conflicts with proposed conditions.[59]

In contrast, the TLP is driven by the license applicant and provides limited opportunity for pre-application coordination between FERC and other resource agencies, or for feedback on study documents.[60] Finally, the ALP provides a more flexible approach to facilitate cooperation between stakeholders and the licensee in the development of pre-filing information and required environmental review materials.[61]

Relicensing

The FPA requires all licensed projects to be relicensed upon the expiration of their license terms—not to exceed 50 years.[62] Procedurally, licensees must file a notice of intent to seek a new license between five and five and one-half years prior to the expiration of the current license.[63] The application process and requirements for a new license generally track those used in original license proceedings.[64] And, as in original license proceedings, other parties may file applications for the project, though the existing licensee receives priority over other applicants in recognition of their investment in the project.[65]

At the expiration of the license term, if the project will continue to be operated for hydropower, FERC generally has two options: (1) FERC may issue a new license to the existing licensee or a new licensee or (2) Congress can approve the federal takeover of a project, paying the existing licensee its net investments in the project and damages from the licensee's loss of the project.[66] Congress has never exercised its authority to takeover a project.[67]

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[58] *See, e.g.*, Matrix Comparing Three Licensing Processes, Federal Energy Regulatory Commission, https://www.ferc.gov/industries-data/hydropower/licensing/licensing-processes-matrix-comparing-three-licensing-processes (last visited June 20, 2024).
[59] 18 C.F.R. Part 5.
[60] *Id.* § 4.38 (original licensing); *Id.* § 16.18 (relicensing).
[61] *Id.* § 4.34(i).
[62] 16 U.S.C. § 799.
[63] 18 C.F.R. § 16.6.
[64] *Id.* § 16.
[65] 16 U.S.C. § 808.
[66] The FPA does not authorize federal takeover of a state or municipally owned facility. *Id.* § 828.
[67] The federal government acquired the Elwha and Glines Canyon Dams for the purpose of removing the projects, but the acquisition was not through the federal takeover provisions of Section 14. Pub. L. No. 102-495 (Oct. 24, 1992).

If the project will no longer be operated for hydropower, there are three possibilities: (1) where FERC determines it cannot condition the project to be in the public interest, FERC can deny the license and order the licensee to decommission the project,[68] (2) where the project will retire its hydropower capacity, FERC can issue a nonpower license to fill the regulatory gap between the end of FERC's jurisdiction and the jurisdiction of another regulatory entity,[69] or (3) if no other party applies for a license, the licensee may surrender its license and decommission the project.[70]

Annual licenses

If at the expiration of an existing license the disposition of the project has not been determined, the FPA authorizes FERC to issue an annual license until FERC issues a new or nonpower license or there is a federal takeover.[71] As FERC describes, the annual license provides a mechanism to preserve the "option of making a careful, deliberate judgment concerning disposition of a project at the end of an initial license term."[72] FERC may issue an annual license to allow the licensee time to complete relicensing, to continue project operation while the licensee completes the surrender and decommissioning process or seeks a nonpower license or an exemption, or to transfer the project to the United States or a new licensee.[73]

Minor projects, which are not subject to FERC's relicensing provisions, continue operating under the terms of the expired license or under a separate FERC order pending issuance of a new license or other disposition of the project.[74]

Substantive Standards

The FPA prescribes the substantive conditions under which FERC may issue licenses. Congress's overarching charge to FERC was to ensure that projects are in the public interest, balancing both power and nonpower interests.[75]

In issuing licenses, the FPA directs FERC to ensure the project is best adapted to a "comprehensive plan for improving or developing a waterway or waterways," giving "equal consideration" to both power and nonpower interests, including navigation, power

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[68] *Project Decommissioning at Relicensing*, 60 Fed. Reg. at 339.
[69] 16 U.S.C. § 808.
[70] *Id.*; 18 C.F.R. § 16.25 and 16.26.
[71] 16 U.S.C. § 808. FERC regulations provide that FERC will issue an annual license to allow time to complete a relicensing application, to continue operation while the applicant files a surrender, nonpower license or an exemption, to remove a project, and to transfer the project to the United States or a new licensee. 18 C.F.R. § 16.18(b). When issued to existing licensees these licenses, the FPA provides license include the same conditions in the expired license. FERC considers the issuance of an annual license "ministerial" and "nondiscretionary." *See S. Cal. Edison Co.*, 106 FERC ¶ 61,212 (March 4, 2004) (Order Denying Rehearing).
[72] *See Id*.
[73] 18 C.F.R. § 16.18(b).
[74] *Id.* § 16.21. FERC waives the FPA's relicensing provisions for minor projects, which includes the authority to issue annual licenses at the expiration of a project term. *Id.* Part 7.
[75] 16 U.S.C. § 797(e).

development, protection, mitigation and enhancement of fish and wildlife, irrigation, flood control, water supply, recreation, and preserving environmental quality.[76]

To ensure a project is consistent with these substantive standards, Congress authorizes FERC to impose conditions on the issuance of licenses.[77] While FERC has primary authority for developing license conditions, the FPA uniquely authorizes other federal and state agencies and Tribes to require or recommend conditions to mitigate project impacts.[78] In addition, outside of the FPA, several federal statutes confer authority on state and federal agencies to impose conditions to ensure federal actions are consistent with the relevant statute's resource protection goals.[79]

Finally, the FPA imposes substantive requirements on licensees, including requiring the payment of annual charges,[80] prohibiting alterations of projects without prior authorization from FERC,[81] and requiring the maintenance and operation of licensed project works.[82]

Licenses

FERC may issue a license if it determines the project, as conditioned, is in the public interest.[83] The FPA authorizes FERC to issue original licenses for up to 50 years but does not prescribe a minimum term.[84] For new licenses (licenses issued after relicensing), the FPA requires license terms to be between 30 and 50 years.[85] FERC policy establishes a default license term of 40 years for both original and new licenses.[86] Three exceptions are: (1) to coordinate license terms to allow review of multiple projects within a river basin, (2) where a different license term is agreed to under a settlement agreement, and (3) to account for project investments made by the licensee.

Each project license includes special and standard articles that direct the construction, operation, and maintenance of the project, and describe FERC's authority with respect to

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[76] *Id.* §§ 797, 803, 810.
[77] FERC must consider factors related to the licensee's record related to energy conservation, compliance record, likelihood of future compliance, provision of reliable power, need for power, and public safety. 16 U.S.C. § 803.
[78] Mandatory conditions for small hydropower and non-exempt conduit projects are set in FERC regulations and include conditions imposed by USFWS, NMFS, and state resource agencies to "prevent loss of, or damage to, fish and wildlife resources." 18 C.F.R. § 823a(c).
[79] *See, e.g.*, 33 U.S.C. § 1341 (provisions for state water quality certifications).
[80] Annual charges are assessed to administer the FPA and to pay for project lands that federal lands and for use of federal dams. 16 U.S.C. § 803(e).
[81] *Id.* § 803(b).
[82] *Id.* § 803(c).
[83] FERC issues original licenses for projects receiving a first license, new licenses at relicensing, and subsequent licenses for minor projects at relicensing.
[84] 16 U.S.C. § 799.
[85] *Id.* § 808.
[86] *Establishing License Terms for Hydroelectric Projects*, 161 FERC ¶ 61,078 (Oct. 19, 2017); *Determination of Project Investments Under Section 36 of the Federal Power Act*, 168 FERC ¶ 61,083, (Aug. 9, 2019). The FPA requires FERC to provide a determination of whether a proposed investment would qualify the applicant for an extended license term during relicensing. 16 U.S.C. § 823(b).

oversight of the project. Special articles are specific to individual projects and include conditions by participating agencies, either through authority in the FPA or other statutory authority. Standard articles are a set of general terms and conditions that apply to certain categories of projects[87] and cover a range of requirements and reserved authorities.[88]

License Administration

Once issued, FERC must administer the license and the licensee must operate the project consistent with terms of the license. A licensee may amend the terms of a license only with FERC's approval.[89] The level of review required for an amendment varies based on the extent of the modification and, depending on the environmental impacts, may require compliance with NEPA and other environmental statutes.[90]

In addition, FERC is generally not permitted to modify the terms of a license without the consent of the licensee. FERC has retained limited authority to independently modify license terms through license articles that authorize FERC to revise license terms under certain conditions—termed "reopeners."[91] Participating agencies have also incorporated reopeners to allow them to modify conditions imposed as part of the agency's regulatory authority.[92] Given the length of license terms, these provisions allow FERC and participating agencies to respond to changed conditions or new information. [93]

A licensee may transfer its license to another entity only with approval from FERC.[94] FERC reviews the proposed transfer to ensure the transferee is qualified to manage the project and

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[87] FERC has 25 different forms of articles for different types of projects, for example, exempt and non-exempt projects, constructed and new construction projects, and based on whether the project is major or minor and the project's location.

[88] Examples include prohibiting a licensee from making substantial changes to the project works as approved by FERC, requiring the licensee to allow the public free access to project works for outdoor recreation except as needed to protect people and property, reserving FERC's right to access the project facilities for inspection, authorizing FERC to address safety violations as a violation of a license condition, and authorizing FERC to terminate the license and direct the disposition of property if the licensee abandons the project.

[89] 16 U.S.C. § 817(2). FERC's standard license terms permit temporary changes to project operations and minor modifications without FERC approval. Licensees must typically still obtain approval of any relevant resource agencies prior to implementing operational changes. 18 C.F.R. § 2.23.

[90] Capacity amendments follow the same process for an original license, including requiring compliance with NEPA and consultation with fish and wildlife agencies. *See, e.g.*, *Black Bear Hydro Partners, LLC*, 140 FERC ¶ 62,194 at 64,608 (Sept. 14, 2012) (Order Amending License and Revising Annual Charges); 18 C.F.R. § 4.200 (addressing non-capacity amendments).

[91] Administrative rules affirm FERC's authority to reserve authority in licenses to make modifications to license terms. 18 C.F.R. § 2.23. Courts have upheld FERC's authority to include reopeners (*Wis. Pub. Serv. Corp.* v. FERC, 32 F.3d 1165 (7th Cir. 1994)).

[92] *See, e.g.*, Letter from FERC to Pacific Gas and Electric Re: Request for plan and schedule for surrender application and response to National Marine Fisheries Service's March 17, 2022 filing, Accession No. 20220511-3004 (May 11, 2022).

[93] Common reopeners include authority to change license terms to require modifications to the project's construction or operation to address fish and wildlife conditions or for the benefit of recreation. Form L-3, Article 17, 18.

[94] 18 C.F.R. § 9. The licensee and transferee are required to jointly file the transfer application.

that the transfer is in the public interest.[95] If FERC approves the transfer, the transferee is required to obtain the property rights necessary to operate the project works covered under the license and accept all terms of the existing license.

In passing the FPA, Congress recognized there may be circumstances where a licensee no longer wishes to operate a project and authorized the licensee to surrender its license during the license term.[96] A licensee must have the mutual consent of FERC, satisfy conditions imposed by FERC on surrender, and restore federal lands occupied by the project to the condition required by the federal land management agency.[97]

FERC also oversees the safety of all licensed and exempt projects. FERC's dam safety regulations impose reporting requirements, periodic safety inspections, and development of an emergency action plan. [98]

Compliance

The FPA charges FERC with ensuring compliance with the terms of a permit, exemption or license, and provides FERC broad investigative and enforcement authority. FERC primarily monitors compliance through mandatory compliance filings by the licensee. Where FERC identifies a non-compliant project, FERC first attempts to achieve voluntary compliance.[99] If FERC cannot achieve voluntary compliance, it may issue a civil penalty[100] or revoke or terminate a license, exemption, or permit.[101]

Section II: Removal of Federal Energy Regulatory Commission Regulated Dams

Decisions to remove dams have been driven by a variety of factors including maintenance and regulatory compliance costs, public safety, environmental impacts, reduced profitability from changing power markets, and capacity and funding support for removal from public and private partners. Typically, several of these factors must coalesce before a dam is removed.

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[95] Compliance Handbook, Division of Hydropower Administration and Compliance, Federal Energy Regulatory Commission, 36 (2015) available at https://www.ferc.gov/sites/default/files/2020-04/ComplianceHandbook.pdf.
[96] 16 U.S.C. § 799.
[97] 18 C.F.R. § 6.2.
[98] *Id.* at Part 12 (FERC has authority to issue civil penalties and revoke licenses for failure to comply with orders or directives issued pursuant to its administration of its safety regulations.).
[99] Compliance Handbook, *supra* note 95 at 3 (FERC describes its approach to compliance as "a mix of reactive, preventative, and proactive" strategies).
[100] FERC regulations prescribe the factors FERC will consider in determining the amount of the penalty, which may not exceed $25,075 per day (accounting for inflation). 18 C.F.R. § 385.1505. The FPA requires FERC to provide an opportunity for a hearing prior to imposing penalties and after providing an opportunity for a hearing.
[101] 16 U.S.C. § 823(b) (revocation); *Id.* § 798(d) (cancellation of a preliminary permit); *Id.* § 806 (time limit for construction); 18 C.F.R. § 6.3 (termination for failing to commence construction); *Id.* § 6.4 (termination by implied surrender); *Id.* § 4.103 (revocation of exemption).

Regulatory requirements often play a key role in dam removals by catalyzing the consideration of removal as a management option. As the only federal statute that provides authority to comprehensively regulate dams, the FPA provides unique opportunities to identify and remove dams that no longer represent the best use of public waterways.[102]

Key components of the FPA's framework that provide opportunities to advance dam removal are: (1) authority to oversee project decommissioning at the end of a license, (2) licensing processes that require FERC to balance power and non-power benefits and periodic reassessment of project impacts, and (3) authority to condition licenses to mitigate environmental impacts.

While there is great potential to leverage FERC's regulation of hydropower projects to remove dams that are no longer in the public interest, significant obstacles exist both in the FPA and FERC's implementation of the FPA. These include obstacles to FERC's consideration of dam removal as a management option, regulatory approaches that incentivize retaining dams, and regulatory requirements that impede dam removal even when there is owner and stakeholder support.

This section first describes where FERC's regulation of hydropower projects intersects with opportunities to consider dam removal and describes how, in practice, dam removal decisions have been made as part of these regulatory processes. It then gives an overview of the history of the removal of FERC-regulated dams. Finally, it identifies obstacles to dam removal in the FPA and FERC's implementation of its regulatory authority and provides recommendations to remove identified obstacles. Throughout, case studies illustrate how FERC's regulatory processes influence decisions to remove dams.

2.1 Federal Energy Regulatory Commission Regulatory Processes and Dam Removal

FERC's regulation of hydropower projects impacts dam removal through its oversight of project decommissioning at the end of a license and through its administration of its licensing authority, which can induce licensees to remove dams as an alternative to compliance with regulatory requirements.

The most direct way FERC's regulation of hydropower projects impacts dam removal is through FERC's authority to oversee how projects that will no longer be licensed are decommissioned.[103]

[102] Adell Amos, Dam Removal and Hydropower Production in the United States—Ushering in a New Era, Journal of Environmental Law and Litigation, 29-1, 1-34 (2014).

[103] Decommissioning refers to activities that remove a project from FERC's jurisdiction; these activities can range from disabling power generation to removal of all project works. *Project Decommissioning at Relicensing*, 60 Fed. Reg. at fn1.

FERC licenses[104] generally end through three pathways: (1) FERC may decline to issue a new license upon the expiration of the license term, (2) licensees may decide not to maintain the hydropower project and surrender their license, or (3) FERC may terminate a license or exemption when a project fails to comply with the terms of the license.

These regulatory processes influence decisions to remove dams by providing a process to consider how project works will be decommissioned at the end of a license to ensure the disposition of project works is in the public interest. FERC evaluates the suitability of dam removal differently in each regulatory process.

While the regulatory processes that govern how projects leave FERC's jurisdiction are most directly linked to dam removal, in practice, the FPA's comprehensive licensing framework and particularly the relicensing process has been a primary driver of decisions to remove dams. The FPA's licensing process—which provides a framework to periodically reassess projects to ensure they remain in the public interest and impose conditions to mitigate impacts—forces licensees to factor external costs into their decision making around whether to maintain projects and provides a structure that facilitates voluntary settlements that may include dam removal.

2.1.1 Dam Removal and License Denial at Relicensing

At the expiration of a license,[105] the FPA requires licensees to apply for a new license, which includes reassessment of project benefits and impacts. Where FERC determines that a project as conditioned does not represent the best use of the waterway, FERC may deny a new licensee and require decommissioning. As part of decommissioning, FERC may require dam removal.[106]

Authority to Require Dam Removal In lieu of Relicensing

The FPA expressly identifies only three regulatory outcomes of relicensing: (1) issuance of a new license to the existing or new licensee, (2) federal takeover of the project and continued operation by the federal government, or (3) issuance of a nonpower license, either on a licensee's or FERC's motion when FERC finds that "all or a part of any licensed project should no longer be used . . . for power purposes."[107]

In the early 1990s, the first large wave of projects licensed prior to the 1986 EPCA amendments, which had required FERC for the first time to balance development and non-development

[104] Unless otherwise specified, the term "license" is used throughout Section II to encompass both licenses and exemptions. "Licensee" is used to encompass both licensees and exemptees.
[105] Exemptions are not subject to relicensing requirements.
[106] If a licensee does not file an application for a new license or a nonpower license and there is no alternative license filed for the project or federal takeover proposed, FERC regulations require that the licensee apply to surrender its license. As part of the surrender process, described below, the licensee may propose—or FERC may independently consider—dam removal as a decommissioning option.
[107] 16 U.S.C. § 808(f).

values in issuing licenses, were required to be relicensed.[108] Anticipating there may be circumstances where a project would not meet the FPA's new licensing standards, FERC sought to clarify its authority to decline to issue a new license and order decommissioning at the time of relicensing.[109]

The regulated industry broadly took the position that Congress intended to constrain FERC's authority at relicensing to one of the three outcomes expressly articulated in the FPA.[110] In contrast, many resource agencies, states, and NGOs argued that FERC had discretion to decline to issue a license when a project could not be mitigated to balance power and nonpower interests.[111]

Agreeing with the latter interpretation, FERC adopted a policy statement clarifying that, in addition to the three outcomes identified in the FPA, at relicensing FERC has the authority to decline to issue a new license and require that a project be decommissioned. [112] FERC found authority implicit—and inherent—in the FPA's charge that FERC equally consider development and non-development values in licensing decisions and requirement that FERC condition projects to ensure consistency with a comprehensive plan for the waterway.[113]

Drawing on these provisions, FERC determined that Congress could not have intended to require FERC to issue licenses that would not meet the FPA's development standards, noting that while Congress "contemplate[d] that normally the balancing between power and environmental interests can and will be accommodated through license conditions," in some instances it may not be possible for conditions to achieve that balance.[114] In those instances, compelling FERC to issue a license would require it to "ignore the strictures of" the FPA's licensing standards.[115]

FERC has only denied a new license and required decommissioning in one instance involving the Edwards Dam on the Kennebec River.

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[108] Donald H. Clarke, *Relicensing Hydropower: The Many Faces of Competition, Natural Resources & Environment*, Vol. 11, No. 2, 8-11 (Fall 1996).
[109] *Id.*
[110] *Project Decommissioning at Relicensing*, 60 Fed. Reg. at 343.
[111] *Id.* at 340-43.
[112] *Id.* at 343. The policy statement also confirmed FERC's authority to condition projects in a manner that could make the project uneconomical and therefore constitute a de facto license denial (discussed in Section 2.1.4) and addressed FERC's authority to impose financial assurances to address decommissioning costs at the end of a license (discussed in Section 3).
[113] *Id.* (quoting 16 U.S.C. § 803(a)).
[114] *Id*. at 342.
[115] *Id.*

Edwards Dam

In 1997 FERC declined to issue a new license to the Edwards Manufacturing Company for the Edwards Project—a 3.5 MW project that included the Edwards dam, which was the first fish passage barrier on the Kennebec River.[116]

In 1991 the licensee filed an application for a new license and proposed conditions to address the project's resource impacts. FERC developed an Environmental Impact Statement, assessing the project's impacts and studied dam removal as one of the alternatives to licensing. **As a result of that analysis, FERC found that project retirement and dam removal was the only alternative that would be consistent with the comprehensive development of the river.** Despite opposition from the licensee, FERC denied the license application and ordered removal of the dam.

In support of its decision, FERC noted that while some project impacts could be reduced through license mitigation and enhancement measures, removal would result in greater public benefits. It also found that with necessary mitigation and enhancement measures, the project would operate at a net loss and that other energy sources could replace the project's capacity for less cost.

The licensee and several hydropower interests appealed FERC's order; however, the parties ultimately withdrew their appeal after reaching an agreement with NGOs and the state to decommission the project. The agreement provided that the licensee would surrender its license and then transfer the dam to the state, which would remove the dam with funding from private sources, including the dam owner. The dam was removed in July 1999 and is widely considered a model for river restoration.

How FERC Considers Dam Removal at Relicensing

FERC considers dam removal in relicensing as part of its assessment of whether a project will be "best adapted to a comprehensive plan for improving and developing the waterway" for both power and nonpower benefits.[117]

Functionally, the consideration of dam removal in relicensing occurs as part of FERC's compliance with NEPA, which requires FERC to assess the environmental impacts of a proposed action and to consider reasonable alternatives.[118] In assessing the environmental effects of the project, FERC uses existing conditions as the baseline against which licensing decisions are assessed. This means that FERC only considers the incremental degradation from issuing a new

[116] *Edwards Mfg. Co., Inc., and City of Augusta Me.*, 81 FERC ¶ 61,255 (Nov. 25, 1997) (Order Denying New License and Requiring Dam Removal).
[117] 16 U.S.C. § 803(a)(1).
[118] For licensing decisions, FERC regulations require environmental analysis—either the preparation of an EA to determine if there is an environmental impact and, if there will be a significant impact, an (EIS), or FERC may elect to initially complete an EIS when it is clear there will be a significant environmental impact. 18 C.F.R. § 380.5 (10).

license and does not consider existing impacts (e.g., impacts from an existing dam) or pre-project conditions.[119] FERC considers continuing impacts from the project and other watershed activities in its cumulative impacts analysis.[120]

In developing "a reasonable range of alternatives" in relicensing, FERC will typically consider a "no action" alternative (which FERC defines as maintaining the project), the proposed action (the issuance of a license and mitigation measures proposed by the licensee), and any reasonable action alternatives (e.g., licensing with staff-imposed conditions).[121]

With respect to the consideration of decommissioning as a reasonable alternative to relicensing, FERC's policy is to not "speculate about possible decommissioning measures" unless proposed by the licensee or there are serious concerns about the project's impacts to natural resources.[122] FERC guidance identifies seventeen factors staff should consider in determining whether there is a serious resource concern warranting consideration of decommissioning, which can be categorized as environmental and resource effects and the potential to mitigate those effects through decommissioning; impacts to Tribal lands, resources, and interests; economic viability of the project; and public benefits of the project. [123] In the vast majority of relicensings, FERC has not studied decommissioning as a reasonable alternative and has relied on boilerplate language without providing project-specific findings.[124]

Opportunities

The FPA's relicensing authority presents a unique opportunity to reassess the public benefits of dams and to remove dams that are no longer in the public interest. Despite the potential of this authority to support the removal of dams, it remains largely unexercised.

As described above, in practice, FERC has generally declined to take a hard look at dam removal as an alternative to relicensing. FERC's use of the existing project baseline creates analytical bias which minimizes the environmental impacts of relicensing. Further, while in many cases dam removal is not the appropriate management option, FERC's almost reflexive dismissal of

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[119] *See American Rivers v. FERC*, 187 F.3d 1007, amended and reh'g denied, 201 F.3d 1186 (9th Cir. 1999).
[120] Interagency Task Force Report on NEPA Procedures in FERC Hydroelectric Licensing, 5-7 (May 22, 2000), available at https://www.ferc.gov/sites/default/files/2020-04/NationalEnvironmentalPolicyActProceduresinHydroelectricLicensing.pdf; *see American Rivers and Ala. Rivers All. v. FERC*, 895 F.3d 32, 54-55 (D.C. Cir. 2018) (holding that FERC must consider pre-project impacts in cumulative impacts analysis).
[121] Guidelines for Preparing Environmental Documents, Federal Energy Regulatory Commission (Sept. 2008), available at https://www.ferc.gov/sites/default/files/2020-04/PreparingEnvironmentalDocuments.pdf.
[122] *PE Hydro Generation, LLC*, 161 FERC ¶ 62,223 (Dec. 20, 2017) (Order Issuing a New License); *City of Tacoma, Wash.*, 110 FERC ¶ 61,140 (Feb. 14, 2005) (Order on Rehearing and Denying Motion for License Articles on Water Rights).
[123] Guidelines for Preparing Environmental Documents, *supra* note 121 at 35.
[124] *See, e.g.*, Environmental Assessment for Hydropower License, Kaukauna Hydro Project, Project No. 1510-018, Accession. No. 2018l0807-3001 (Aug. 2018), available at https://www.ferc.gov/sites/default/files/2020-06/P-1510-EA.pdf.

decommissioning as a reasonable alternative has meant it has not meaningfully considered dam removal even when a project has significant resource impacts.

A review of 90 environmental assessments of applications for new and subsequent licenses between 2017 and 2023 identified no cases where FERC identified removal as a reasonable alternative to relicensing. This includes cases where agencies or other stakeholders recommended FERC study dam removal.[125]

Further, this report identified only two cases in which staff identified dam removal as a preferred alternative to relicensing when not proposed by the licensee.[126] The first case was the Edwards project, discussed above, which resulted in a FERC order adopting the staff recommendation. The second instance involved the Clyde River Hydroelectric Project.

Clyde River Project/Newport Dam #11

The Clyde River Project, located on the Clyde River in Vermont, received an original license in 1963 with an expiration date of 1993.[127] At the time of relicensing, the project included three dams; however, during the relicensing process one of the project's dams, Newport No. 11 Dam, was breached in a high flow event. The applicant initially proposed to restore the dam.

The draft EIS considered maintaining the existing project, the licensee's proposal—which proposed maintaining existing project works with some operational and physical modifications—and two staff alternatives, one of which included removal of the breached dam.[128] **The draft EIS ultimately selected removal of Newport No. 11 Dam as the preferred alternative given the significant environmental benefits and only modest reduction in the project's net profits.**

Between the issuance of the draft EIS and final EIS, the licensee reached a settlement agreement with stakeholders that provided for the removal of Dam #11 and the relicensing of the remaining two project dams. The licensee subsequently amended its relicensing application

[125] *See, e.g.*, Final Environmental Assessment for Hydropower License, Pejepscot Hydroelectric Project, Project No. 4784-106, Appendix D, Accession No. 202210102-3003 (Nov. 2022); Final Environmental Assessment, Barker's Mill Hydroelectric Project, Project No. 2808-017, Accession No. 20190206-3006 (Feb. 2019) (National Marine Fisheries Service and NGO comment that dam removal warrants further evaluation).

[126] FERC also studied dam removal as a potential alternative in its draft Environmental Impact Statement for the relicensing of the Elwha Project; however, the draft did identify a preferred alternative. Draft Environmental Impact Statement, Glines Canyon (FERC No. 588) and Elwha (FERC No. 2683) (Feb. 1991). No final EIS was issued because congressional legislation subsequently authorized the Department of Interior to purchase the property, removing it from FERC jurisdiction. Elwha River Ecosystem and Fisheries Restoration Act, Pub. Law 102-495 (Oct. 24, 1992).

[127] *Citizens Util. Council*, 30 FPC ¶ 1,214 (Aug. 29, 1963) (Initial Decision of Presiding Examiner Upon Application for License Pursuant to Section 4(e) of the Federal Power Act).

[128] Draft Environmental Impact Statement, Federal Energy Regulatory Commission, Clyde River Hydroelectric Project, Project No. 2306, Accession No. 19960911-0237 (Feb. 1995).

to request FERC approval to removal of Newport No. 11 Dam. The dam removal was completed in October 1996.

2.1.2 Dam Removal and License Surrender

A licensee must obtain FERC's approval to surrender its license when it no longer wants to maintain a project. As part of license surrender, the licensee must decommission hydropower capacity and may propose to remove project works, including dams. FERC ensures that the surrender is conducted in a manner that is consistent with the public interest and, as part of that oversight, can independently require dam removal as a condition of surrender.[129]

Authority to Require Dam Removal at License Surrender

Once a licensee accepts a FERC license, the licensee must maintain the project consistent with the terms of the license and, more generally, in good repair for both power development and navigation.[130] A licensee that wishes to stop maintaining a project must affirmatively apply to surrender its license. Independent actions by the licensee to abandon the project are a violation of the project license and not sufficient to terminate a license or FERC's jurisdiction.[131]

FERC extends affirmative license surrender requirements to licensees with an expiring license, including an annual license—a licensee may not simply wait until the end of its license term and abandon the project but, instead, must affirmatively request FERC's approval to surrender its license.[132]

While not express in the FPA, FERC interprets the FPA's requirement that FERC approve license surrenders to include the authority to direct project decommissioning to "satisfactorily protect the public interests involved[,]"[133] noting that the approval requirement demonstrates a congressional intent that "a licensee [should not] simply be able to walk away from a Commission-licensed project without any Commission consideration of the various public interests that might be implicated by that step."[134]

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[129] 16 U.S.C. § 799; 18 C.F.R. § 4.102. FERC must condition the surrender to restore federal lands as required by federal land managers. 16 U.S.C. § 799.
[130] 16 U.S.C. § 803(c).
[131] *See Id.* § 803(c); *S. Cal. Edison Co.*, 106 FERC at 61,711 (Order Denying Rehearing); *Pub. Util. Dist. No. 1 of Pend Oreille Cnty., Wash.,* 122 FERC ¶ 61,249 at 62,424 (March 20, 2008) (Order Granting Rehearing in Part, Denying Rehearing in Part, Affirming that Existing License is Valid, and Finding that License is Required); *see contra Cent. Me. Power Co.*, 81 FERC ¶ 61,087 (Oct. 22, 1997) (FERC declined require a surrender proceeding where the project was no longer generating power and transferred the project facilities to a town.) (Order Denying Rehearing).
[132] FERC regulations require a licensee that does not seek a new license to surrender a license if another party has not applied for a new license. 18 C.F.R. §§ 16.25 and 16.26. If a license expires without another ongoing process that will determine the disposition of the project—e.g., a surrender application or an application for a nonpower license—FERC must issue, and the licensee must accept, an annual license. 16 U.S.C. § 799.
[133] *Project Decommissioning at Relicensing*, 60 Fed. Reg. at 344-45
[134] *Id.* at 344.

FERC regulations, adopted shortly after the passage of the FPA, codify this interpretation, providing that FERC may condition the approval of a license surrender "upon such conditions with respect to the disposition of such works as may be determined by the Commission."[135] Similarly, regulations governing the surrender of an exemption provide authority to FERC to prescribe project decommissioning as a condition of its approval.[136] In addition, regulations governing exempt projects provide that where project construction has begun federal and state fish and wildlife agencies may also prescribe conditions for surrender.[137]

FERC has interpreted the scope of its authority to be limited to removal of project works, finding that FERC lacks "the authority to require the existing licensee to install new facilities, such as a fish passage facility" at the time of surrender.[138] Importantly, this limits the range of interventions available to FERC to protect public resources when a project will no longer be operated but will not be removed. While FERC states that successor agencies can address these impacts, in many cases state regulatory frameworks do not provide the same authority or opportunity to require mitigation actions.

How FERC Considers Dam Removal at License Surrender

In the license surrender process, FERC considers dam removal as part of its assessment of appropriate project decommissioning. An application for surrender should describe the proposed decommissioning activities and anticipated resource impacts and safety considerations.[139] The decommissioning plan may range from simply disconnecting generating equipment to partial or full removal of project works. The vast majority of surrenders reviewed for this report proposed to disable hydropower generation and secure project works without additional site restoration.

The FPA does not provide a standard for assessing proposed license surrenders and therefore FERC adopts a broad public interest standard.[140] FERC has provided little formal clarification on how it will assess the public interest in surrender proceedings.[141] However, in assessing what

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[135] 18 C.F.R. § 6.2.
[136] *Id.* § 4.95 (conduit); *Id.* § 4.102 (small hydropower exemption).
[137] *Id.* § 4.102(e).
[138] Project Decommissioning at Relicensing, 60 Fed. Reg. at 346; *Rivanna Water and Sewer Auth.*, 173 FERC ¶ 62,005 (Oct. 2, 2020) (Order Approving Surrender of Exemption) (declining to evaluate the need for fish passage as part of a surrender application as requested by state resource agencies).
[139] FERC, How to Surrender a License or Exemption, https://www.ferc.gov/administration-and-compliance/how-surrender-license-or-exemption (last visited June 20, 2024).
[140] As FERC noted, "this situation is thus distinct from the obligation of a public utility, under Section 205(d) of the FPA or Section 7(b) of the Natural Gas Act, to continue providing service unless and until the Commission makes appropriate public interest findings and approves the abandonment of service." *Niagara Mohawk Power Corp. and Forth Branch Assoc.*, 83 FERC ¶ 61,226 (May 29, 1998) (Order Accepting Surrender of License); *Duke Energy Carolinas, LLC*, 120 FERC ¶ 61,054 (July 19, 2007) (Order Accepting Surrender and Dismissing Application for Subsequent License); *Ariz. Pub. Serv. Co.*, 109 FERC ¶ 61,036 at 61,039, fn. 34 (Oct. 8, 2004) (Order Approving Surrender of License and Removal of Project Works, and Dismissing Application for New License); *Wellesley Rosewood Maynard Mills, L.P.*, 108 FERC ¶ 61,048 (July 13, 2004) (Order Accepting Surrender of Exemption).
[141] FERC has distinguished the public interest standard in surrender proceedings from the comprehensive development standard used in licensing proceedings. *See Niagara Mohawk Power Corp. and Forth Branch Assoc.*,

decommissioning is required to meet the public interest standard, FERC has considered factors such as impact on historic resources, other uses of the project (e.g., public water supply, flood control), impact on recreation, environmental impacts, and safety.[142] In practice, FERC has found that the public interest will rarely require removal.[143]

As with relicensing, FERC's assessment of whether the public interest supports dam removal generally occurs as part of its assessment of environmental impacts. FERC regulations provide that in most cases FERC will need to assess a license surrender to determine if it will cause "significant environmental effects."[144]

As with other regulatory decisions, FERC adopts the existing project as the baseline for assessing the environmental impacts of a proposed surrender. Therefore, FERC considers only environmental impacts from the activities taken under the surrender order and does not consider the current and ongoing impacts of the existing project works. As a result, when the licensee proposes only to disable power generation, which involves no ground disturbance, FERC has generally found there will be no environmental impacts from license surrender.[145]

This reasoning has allowed FERC to dismiss resource agency and stakeholder concerns around the continuing environmental impacts of project works, including dams, remaining on the landscape—such as, impacts to fish passage, water quality and recreation—and to dismiss requests for FERC to study dam removal as a decommissioning requirement.[146]

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100 FERC ¶ 61,185 (Aug. 12, 2002) (Order Denying Rehearing and Dismissing Motion for Stay as Moot) ("We have explained that, in the absence of any further statutory standard, we apply a broad 'public interest' standard. That standard could hardly be the same as the Section 4(e)/10(a) standard applicable to license applications, inasmuch as a license surrender is a very different proposal.").

[142] *See, e.g.*, Environmental Assessment of Application for Surrender of Exemption, Branch River Mill Project, Project No. 3615-002, 14 Accession No. 2002090-0289 (August 2002) (finding dam removal was not in the public interest because of the dam's eligibility as an historic property, lack of anadromous fish, and source of water for fire protection).

[143] Project Decommissioning at Relicensing, 60 Fed. Reg. at 340; *see Aclara Meters*, 184 FERC ¶ 61,183 (Sept. 21, 2023) (Order Addressing Arguments Raised on Rehearing) (In rejecting a request for rehearing of its approval surrender, noting that FERC has rarely required dam removal when not proposed by the licensee.).

[144] FERC regulations provide that in most cases FERC will need to assess a proposed license surrender to determine if it has the potential to cause "significant environmental effects" and require formal review under NEPA. 18 C.F.R. § 380.5(13) (requiring assessment "where project works exist or ground disturbing activity has occurred"); *see also Pub. Util. Dist. No. 1 of Pend Oreille Cnty, Wash.* 122 FERC at ¶ 61,249.

[145] *See, e.g.*, *Aclara Meters*, LLC, 183 FERC ¶ 62,095 (May 22, 2023) (Order Approving Surrender of License); *City of Lansing, Mich.*, 179 FERC ¶ 62,117 (June 1, 2022) (Order Approving Surrender of License).

[146] *See, e.g.*, *Aclara Meters*, LLC, 183 FERC at 62,095 (resource agencies and NGOs recommend consideration of removal to address environmental impacts); *Va. Hydrogeneration and Historical Ass'n*, 113 FERC ¶ 62,153 (Nov. 23, 2004) (Order Accepting Final Surrender of License) (dismissing resource agency concerns regarding fish passage noting the absence of anadromous fish and the lack of impact from surrender because the dam is already constructed); *Drew River Mill Inc.*, 100 FERC ¶ 62,150 (August 30, 2002) (Order Accepting Surrender of Exemption) (dismissing recommendations by resource agencies to consider dam removal, finding that removal was not warranted because there were no anadromous fish and surrender without ground disturbance does not have significant environmental impacts); *Cascade Power Co.*, 98 FERC ¶ 62,198 (March 21, 2002) (Order Accepting Surrender of Exemption); *J &T Hydro Co. W. Dean Brooks and H. Bruce Cox*, 135 FERC ¶ 62,061 (April 19, 2021)

Opportunities

FERC's authority to oversee the surrender of project licenses provides significant opportunity to remove dams that are no longer in the public interest. FERC has authority to direct how project works are decommissioned to protect the public interest. Further, the regulatory process for license surrender provides a forum to consider the environmental impacts of the project and decommissioning alternatives, and for resource agencies, Tribes and stakeholders to engage with the licensee and FERC in determining the appropriate disposition of the project.

In all cases where dams were removed as part of license surrender, the licensee proposed dam removal. And in all cases where the licensee proposed dam removal, FERC has approved the proposed decommissioning plan. This report identified 83 surrender orders issued since 2001, 17 authorized dam removal as proposed by the licensee.

However, when not proposed by the licensee, FERC has never imposed dam removal as a condition of voluntary license surrender.[147] As described above, FERC has consistently dismissed the environmental impacts of license surrender to find that the public interest does not require dam removal.[148] Practically, FERC's approach to dam removal at surrender, coupled with FERC's position that it cannot require installation of physical infrastructure to address ongoing project impacts, has meant that even in cases where dams have significant environmental impacts, FERC has not conditioned surrender to address those impacts.

More recently the surrender process is being used by licensees and partners to remove a project from FERC jurisdiction and proceed with dam removal under a state regulatory framework—which often has fewer regulatory requirements.[149]

Somersworth Hydroelectric Project

The Somersworth Hydroelectric Project is located on the Salmon Falls River in New Hampshire and Maine and includes two almost twenty-foot dams.[150] Licensed in 1981, the project generated power until a 2011 infrastructure failure. In 2016 the licensee, Aclara Meters, submitted a notice of intent to relicense the project. Natural resource agencies submitted comments expressing concern about fish passage and other environmental impacts.

(Order Denying Transfer and Accepting Surrender of License) (state and federal resource agencies requested FERC require dam removal or dam breaching to address environmental impacts).

[147] FERC has required a licensee to remove a dam as part of an implied surrender proceeding but that condition was subsequently removed. *Larry Hensley Eugene Mark Souza*, 122 FERC ¶ 62,201 (Feb. 29, 2008) (Order Terminating License by Implied Surrender).

[148] *See, e.g.*, *VC Porterdale Hydroelectric, LLC*, 153 FERC ¶ 62,261 (Dec. 30, 2015) (Order Accepting Surrender of License) (declining to order dam removal where the dam was important historically and aesthetically).

[149] *See, e.g.*, *Great Bear Hydro*, 156 FERC ¶ 62,113 (Aug. 10, 2016) (Order Accepting Surrender); *Ray F. Ward*, 162 FERC ¶ 62,061 (Jan. 26, 2018) (Order Approving Surrender of License).

[150] *See Aclara Meters, Inc.*, 183 FERC at 62,095.

The licensee subsequently filed an application to surrender the project anticipating that conditions required as part of relicensing, particularly to mitigate resource impacts, would make the project uneconomical. As part of the surrender application, the licensee proposed only to disable hydroelectric capacity and secure project works, functionally, allowing it to avoid costs associated with installing fish passage.

Reiterating concerns raised in the relicensing process, resource agencies—including U.S. Fish and Wildlife Service, National Marine Fisheries Service, New Hampshire Fish and Game Department, New Hampshire Department of Environmental Services and Maine Department of Marine Resources—and NGOs raised concerns about the impact of maintaining the dams on fisheries and requested that FERC require dam removal or construction of fish passage as an alternative to the licensee's decommissioning plan.[151]

Despite almost unanimous calls by resource agencies, FERC declined to condition surrender on the construction of fish passage or dam removal. FERC noted, that "no environmental impacts are expected from surrender of the project as proposed . . . The project dams would continue to block passage for both anadromous and resident fish and eels and would continue to be obstructions to any canoeing or kayaking. No modifications to these structures are proposed, and they would remain as they are now."[152]

Further, while FERC recognized potential connectivity benefits from removal, it found that there were uncertainties with how lower dams, which were currently undergoing relicensing, would provide fish passage. It also noted impacts to the community water supply, although it declined to consider water supply alternatives. FERC noted that due to its policy not to require installation of new facilities at surrender, "it would be for any 'successor agency'" to address fish passage.[153]

American Whitewater requested that FERC reconsider its surrender order and subsequently appealed FERC's affirmation of the surrender order on rehearing.[154] As of this report, the case is pending in the D.C. Circuit.

[151] *See, e.g.*, U.S. Fish and Wildlife Service, Comments on Surrender Aclara Meters, LLC, Somersworth Hydroelectric Project No. 3820, Accession No. 20191010-5019 (Oct. 9, 2019); *see also* American Whitewater's Comments on Environmental Assessment for Surrender of License for the Somersworth Hydroelectric Project, FERC Project No. 3820, Accession No. 20210208-5027 (Feb. 8, 2021).
[152] *See Aclara Meters, Inc.*, 183 FERC at 62,095
[153] *Id.*
[154] *Aclara Meters, Inc.*, 184 FERC at 61,183. American Whitewater v. Federal Energy Regulatory Commission, Petition for Review, Case #23-1291 (Oct. 23, 2023).

2.1.3 Dam Removal and Compliance Actions

Administrative actions to address project noncompliance, which includes the authority to cancel a license, also impact decisions to remove dams.[155] Because these regulatory processes end a project's authorization to operate, they raise considerations of how a project should be decommissioned, including whether a licensee should be required to remove project dams.

The FPA expressly authorizes FERC to terminate a license without a licensee's consent in two instances—for failing to comply with a FERC order enforcing compliance with license terms (termed revocation) or for failing to commence construction within the statutory time (termed termination).[156] In addition to these express authorities in the FPA, FERC has identified implied authority to terminate a license as part of its license surrender authority when a licensee's failure to maintain a project demonstrates an intent to surrender a license (termed termination by implied surrender).[157] Finally, FERC includes standard conditions in both licenses and exemptions that provide independent authority to terminate or revoke a license in certain circumstances.[158]

How FERC Considers Dam Removal in Revocation Orders

The FPA authorizes FERC to revoke a license for failing to comply with a final order addressing a licensee's noncompliance with the terms and conditions of a license.[159] The formal license revocation process is initiated when FERC issues an order proposing revocation outlining a project's history of noncompliance and analyzing whether the seriousness of the violation and licensee's response to the noncompliance warrants revocation.[160] The licensee may request an evidentiary hearing on the proposed revocation. In addition, FERC provides public notice of the proposed revocation, and any interested party may intervene in the action or provide comment.[161]

While the FPA is silent with respect to FERC's authority to impose conditions on a licensee as part of a revocation, FERC has recognized "broad authority to fashion appropriate remedies to

[155] Appendix B: Implied Surrender Orders and Revocations provides a list of implied surrenders and revocations issued by FERC.
[156] *Id.* § 823(b) (revocation); *Id.* § 806 (time limit for construction).
[157] 18 C.F.R. § 6.4. While FERC grounds Termination By Implied Surrender in its license surrender authority, this report includes it as a compliance action because FERC uses Termination By Implied Surrender to address noncompliance with license terms and terminates licensees even over licensee objections.
[158] Terms and Conditions License for Constructed Major Project Affecting Navigable Waters of the United States, Article 26, https://www.ferc.gov/industries-data/hydropower/administration-and-compliance/standard-l-e-p-form-articles.
[159] 16 U.S.C. § 823(b).
[160] FERC developed several factors to determine whether this criteria is met: has the licensee knowingly violated the compliance order, did the licensee have time to comply with the order, the licensee's history of violations, whether the violation caused the loss of any life or injury to persons, endangered persons, property or the environment or damage to property or the environment, and if the licensee derived any economic benefits from the violations.
[161] 18 C.F.R. § 385.214 (intervention).

further the goals of the FPA in a manner 'necessary and appropriate to carry out' the revocation of a license."[162] FERC grounds this authority in the FPA's general grant of power to preform acts and impose remedies to carry out the provisions of the FPA.[163]

With respect to decommissioning, FERC has not defined the precise scope of its conditioning authority but, at a minimum, found it includes the authority to require a licensee to disable the generating capacity of a project.[164] In addition, FERC's standard license provides authority to direct decommissioning of projects.[165] In assessing environmental impacts of license revocation, FERC has studied the alternative of requiring dam removal as part of a revocation order.[166]

Despite this authority, FERC has generally declined to impose additional decommissioning requirements on a licensee, describing its "general rule" as to not impose additional conditions as part of a license revocation because "doing so would be impractical—a licensee that has failed to comply with license requirements would be unlikely to comply with those requirements when made part of a license revocation that it opposes."[167] FERC has required dam removal in one revocation proceeding based on requirements imposed in the exemption by the state; however, it is unclear whether the exemptee complied with the order.[168]

FERC regulations categorically exclude revocations from NEPA requirements as a compliance action that only has legal effect—in the revocation context, removing authorization to operate a project—and therefore not impacting the environment.[169] However, FERC may still prepare an environmental assessment where the action may have an environmental impact.[170] In most cases, FERC has declined to complete an environmental assessment of license revocations. As with other regulatory decisions, FERC has not considered the environmental impacts of the project works remaining on the landscape, instead treating the maintenance of the project as having no environmental impact because there would be no change to the status quo.[171]

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[162] *The E. Hydroelectric Corp.*, 149 FERC ¶ 61,036 (Oct. 16, 2014) (Order Revoking License) (aff. *Eastern Hydroelectric Corporation v. Federal Energy Regulatory Commission*, 887 F.3d 1197 (April. 18, 2018)).
[163] 16 U.S.C. § 309; *Centreville Hydro, Inc.*, 66 FERC ¶ 61,278 at 61,784 (March 2, 1994) (Order Revoking Exemption).
[164] *Centreville Hydro, Inc.*, 66 FERC at 61,784.
[165] *See, e.g.*, Terms and Conditions License for Constructed Major Project Affecting Navigable Waters of the United States, *supra* note 158.
[166] *See, e.g.*, Final Environmental Assessment for Proposed Revocation of License, Harvell Dam, Project No. 8657, Accession No. 20040616-3024 (June 2004).
[167] *E. Hydroelectric Corp.,* 149 FERC at 61,146.
[168] *H.E.E.D. Co., Inc.*, 91 FERC ¶ 62,063 (April 26, 2000) (Order Revoking Exemption from License).
[169] 18 C.F.R. § 380.4(a)(3); *see, e.g.*, *E. Hydroelectric Corp.*, 149 FERC at fn. 28. FERC does consider environmental impacts as part of its assessment of the seriousness of the noncompliance but generally does not consider ongoing environmental impacts that would result from revocation.
[170] 18 C.F.R. § 380.4(b); *see, e.g.*, *Va. Hydrogeneration and Historical Soc'y, L.C.*, 104 FERC ¶ 61,282 (Sept. 5, 2003) (Order Proposing Revocation of License).
[171] *See E. Hydroelectric Corp.*, 149 FERC at 61,146 (declining requests from conservation groups to complete an environmental assessment and consider a dam removal).

Harvell Dam

In 2003 FERC issued an Order Proposing Revocation of License for the Harvell Dam Project, located on the Appomattox River in the Chesapeake Bay, alleging several decades-long violations of license terms, including failure to operate and maintain fish passage and release minimum required flows.[172] The dam was the first barrier on the Appomattox River, blocking passage to over 130 miles of fish habitat.

FERC prepared an environmental assessment evaluating the impacts of proposed revocation and the proposed action alternatives of no revocation, revocation with no required mitigation, and revocation with partial or full removal of project works.[173] Comments from state and federal resource agencies and NGOs recommended removal as the only alternative that would remediate the ecological impacts of the dam**. As the U.S. Fish and Wildlife Service noted, revocation without dam removal would be "inadequate to mitigate the damages of the past 16 years and will thwart the efforts of the natural resource agencies to restore these fisheries to the public."**[174]

FERC and the licensee subsequently began settlement discussions. In 2005 FERC provided notice of a proposed settlement agreement, in which the licensee would not contest FERC's revocation proceedings but face no other penalty.[175]

Several resource agencies and stakeholders opposed the settlement agreement noting that it did not address the significant environmental issues with the project and did not penalize the licensee for its noncompliance despite having received over ten years of profit from the project. **As the U.S. Fish and Wildlife Service noted, "[w]hile it may be in the interests of the licensee and enforcement staff to no longer have to worry about the ongoing environmental effects of the project, it is not in the interest of the public."**[176] The National Marine Fisheries Agency noted, by allowing the licensee to "simply walk away from any and all accountability[,]" FERC is "encouraging other bad actors to defy the Commission's authority profitably, while knowing that in the end they will not be held accountable."[177]

FERC defended the settlement agreement, noting that "[a]s a practical matter, making additional demands on a Licensee which has failed to comply with many of its obligations over

[172] *Va. Hydrogeneration and Historical Soc'y, L.C.*, 104 FERC at 61,282.
[173] Final Environmental Assessment for Proposed Revocation of License, Harvell Dam, *supra* note 166.
[174] U.S. Fish and Wildlife Service, Harvell Dam Project FERC No. 8657-064, Notice of Availability of Draft Environmental Assessment, ER 03/951, Accession No. 20040109-5004 (Jan. 8, 2004).
[175] Virginia Hydrogeneration and Historical Society, LLC, Joint Offer of Settlement, Accession No. 2005072-0074 (July 22, 2005).
[176] U.S. Fish and Wildlife Service Letter RE: Virginia Hydrogeneration and Historical Society, L.C. Project No. 8657, Joint Offer of Settlement, Accession No. 20050811-5013 (Aug. 10, 2005).
[177] National Oceanic and Atmospheric Administration, Virginia Hydrogeneration and Historical Society, L.C., Docket No. 8657, Accession No. 20050811-5032 (Aug. 11, 2005).

the last 15 years makes little sense."[178] Further, FERC found "the penalty paid by the Licensee is in effect the money paid for what has become a non-productive asset, and the future economic loss suffered as a result of the revocation."[179] Finally, FERC noted it was in the public interest to terminate FERC's involvement with the project to stop the expenditure of agency resources on the matter.

The settlement agreement was never finalized, and in 2013 FERC terminated the project's license by implied surrender without conditions.[180] The Harvell Dam was subsequently removed in 2014 through a partnership of the state and NGOs. Funding for removal was provided through federal grants.[181]

How FERC Considers Dam Removal in Termination by Implied Surrender Orders

FERC may terminate a license by implied surrender when a licensee demonstrates an intent to surrender a license either by abandoning or failing to maintain or operate the project, or otherwise failing to comply with its license or a FERC order.[182] While the FPA does not expressly authorize implied surrender, FERC has found authority implicit in the FPA's requirement that a licensee obtain FERC's approval before surrendering a license.[183] FERC's implied surrender authority is codified in regulations[184] and incorporated in licenses as a standard article.[185]

While termination by implied surrender can address similar noncompliance issues as FERC's revocation authority, termination by implied surrender does not require the same procedural hurdles—i.e., issuing compliance orders and providing an opportunity for an evidentiary hearing.[186] Perhaps as a result, FERC more frequently uses termination by implied surrender to address a licensee's failure to comply with license conditions.[187]

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[178] Virginia Hydrogeneration and Historical Society, LLC, Enforcement Staff Comments with Respect to Joint Offer of Settlement, 6, Accession No. 20050822-018 (Aug. 19, 2005).
[179] *Id.* at 8.
[180] *Va. Hydrogeneration and Historical Soc'y, L.C.*, 142 FERC ¶ 62,212 (March 14, 2013) (Order Terminating License by Implied Surrender); U.S. Fish and Wildlife Service Letter RE: Virginia Hydrogeneration and Historical Society, L.C. Project No. 8657, Joint Offer of Settlement, Accession No. 20050811-5013 (Aug. 10, 2005).
[181] Removal of Dam on Appomattox River to Benefit Native Fish in Virginia, American Rivers (June 11, 2014), https://www.americanrivers.org/media-item/removal-dam-appomattox-river-benefit-native-fish-virginia/ (last visited June 16, 2024).
[182] 18 C.F.R. § 6.4; *John C. Jones,* 123 FERC ¶ 61,053 (Jan. 23, 2008) (Order Denying Rehearing); *Puget Sound Power & Light Co,* 54 FPC ¶ 599, 599–600 (1975) (Order on Rehearing Modifying License) (finding its standard article consistent with the FPA's surrender provisions); *see also Reeves Bro., Inc.*, 54 FPC ¶ 512 (1975) (Order on Rehearing Modifying License) (finding same proposition).
[183] *Pinedale Power and Light Co.*, 38 FERC ¶ 61,036 (Jan. 27, 1987) (Order Accepting Surrender of License).
[184] 18 C.F.R. § 6.4.
[185] 16 U.S.C. § 799; *see, e.g.*, Terms and Conditions License for Constructed Major Project Affecting Navigable Waters of the United States, *supra* note 158.
[186] Functionally, FERC initiates a license termination by issuing a notice of the proposed license termination to the licensee and public. The licensee and any interested party then have 30 days to protest, intervene in, or provide comment on the proposed termination.
[187] FERC's Compliance Handbook notes that FERC will use implied surrender to address noncompliance with license conditions. Compliance Handbook, *supra* note 95 at 51.

As authorized in standard license articles, which permits FERC to "require [a] Licensee to remove any or all structures [and] equipment . . . within the project boundary," and consistent with FERC's authority to approve license surrenders, FERC may impose requirements related to decommissioning as part of an order terminating a license by implied surrender.[188]

FERC has not clearly addressed the scope of its authority with respect to decommissioning, including whether it could require dam removal. However, FERC has generally declined to impose decommissioning requirements beyond disabling hydropower capacity, citing difficulty enforcing decommissioning requirements when a project is already non-compliant or when the project owner no longer has control over the project infrastructure.[189]

This report identified only one instance in which FERC required a licensee to remove a dam as part of an order terminating a license by implied surrender.[190] FERC based the requirement on a condition in a U.S. Forest Service permit authorizing the project's use of federal lands, which required the permittee to remove any project works upon the surrender of its FERC license. Ultimately, the licensee failed to remove the dam and FERC eliminated the dam removal requirement from the termination order.

As with revocations, FERC classifies termination by implied surrender as a compliance action that does not require environmental analysis under NEPA, noting "terminating the license by implied surrender and leaving the project facilities in place will not authorize any action or alter the current condition of the project or surrounding environment."[191] This report identified 33 implied surrender orders issued by FERC. FERC assessed the environmental impacts of license termination in only three of those cases[192] and in only two cases did FERC consider whether dam removal was an appropriate decommissioning requirement.[193]

[188] *See, e.g.*, Terms and Conditions License for Constructed Major Project Affecting Navigable Waters of the United States, *supra* note 158.
[189] FERC's standard articles require the licensee retain all necessary property interests for the project; therefore, failure to maintain necessary property interests is a technical violation of the license. Standard Article 5, Form L1, https://www.ferc.gov/industries-data/hydropower/administration-and-compliance/standard-l-e-p-form-articles.
[190] *Larry Hensley Eugene Mark Souza*, 122 FERC at 62,201.
[191] *Goose River Hydro, Inc.*, 183 FERC ¶ 62044 (April 2023) (Order Terminating License by Implied Surrender); *Iman Mills*, 153 FERC ¶ 62,231 (Dec. 22, 2015) (Order Terminating License by Implied Surrender).
[192] *James Lichoulas, Jr.*, 125 FERC ¶ 61,255 (Sept. 18, 2008) (Order Terminating License by Implied Surrender); *Larry Hensley Eugene Mark Souza*, 122 FERC at 62,201; *Starr Mill Inc.*, 128 FERC ¶ 62,164 (Sept. 3, 2009) (Order Conditionally Terminating License by Implied Surrender).
[193] *Larry Hensley Eugene Mark Souza*, 122 FERC at 62,201 (EA completed and dam removal considered); *Starr Mill Inc.*, 128 FERC at 62,164 (final EA considers dam removal alternative based on comments from resource agencies).

Jim Boyd Hydroelectric Project

The Jim Boyd Hydroelectric Project was licensed in 1984 and operated until 2002, when it ceased generating power following the expiration of its power purchase agreement and the death of one of the licensees.[194] The project was subsequently sold but FERC would not approve a license transfer due to the failure of the licensee and new owner to maintain the project. The county subsequently acquired the project due to unpaid taxes. In 2009 FERC filed a notice of intent to terminate the license citing the licensee's failure to maintain the project for over nine years.[195]

In response to the notice, several parties, including the Oregon Department of Fish and Wildlife (ODFW), Department of Interior and National Marine Fisheries Service, commented that leaving the existing project in place would harm the environment and recommended that FERC require the licensee to remove project works. **As ODFW noted, "if left in place, project features will continue to impact important habitats with impacts potentially exacerbated by project features becoming damaged or destroyed in high flow events."**[196] The Confederated Tribes of the Umatilla Indian Reservation urged FERC to consider the project's impact on culturally significant anadromous fisheries.[197]

FERC declined to require removal or mitigation, arguing that because the licensee no longer owned the project FERC did not have authority to require removal. FERC terminated the license by implied surrender in 2011 and the dam remains a fish passage barrier on the Umatilla River.

How FERC Considers Dam Removal in Termination Orders

The FPA authorizes FERC to terminate a license if the licensee fails to commence construction within the time prescribed in the license.[198] Because many projects utilize existing infrastructure, even the termination of a license for failing to begin or complete construction can raise issues with the disposition of a dam.

FERC has not expressly addressed whether it has authority to require project decommissioning as part of a termination order. However, FERC's practice is to not require the licensee to take

[194] *James B. Boyd and Janet A. Boyd, Boyd Hydro, LLC*, 136 FERC ¶ 62,119 (August 8, 2011) (Order Terminating License by Implied Surrender and Denying License Transfer Application).
[195] *James By. Boyd and Janet A. Boyd*, 126 FERC ¶ 62,192 (March 13, 2009) (Order Dismissing Application to Transfer License and Implied Surrender Proceeding).
[196] Oregon Department of Fish and Wildlife, Comments on Notice of Termination of License by Implied Surrender and Soliciting Comments, Protests, or Motion to Intervene, Accession No. 200990528-5136 (May 28, 2009).
[197] The Confederated Tribes of the Umatilla Indian Reservation, Letter RE Jim Boyd Hydroelectric Project, Project No. 7269, Accession No. 20100301-0005 (Feb. 25, 2010).
[198] 16 U.S.C. § 806 (limited to two years plus possible extensions up to eight years). Exemptions include a license condition that requires construction to begin within a prescribed period and authorizes FERC to revoke the exemption if the exemptee violates the term. 18 C.F.R. § 4.106 (FERC's standard exemption articles also authorize FERC to revoke an exemption for failing to violation of any term of the exemption or if the exemptee made any false statements in its exemption application).

steps to "remove or modify structures," finding that imposing those requirements on a licensee when it did not build the structure "would be inappropriate and . . . represent bad policy."[199]

Consistent with FERC's position that it will not require decommissioning activities, FERC treats terminations as an administrative action that does not require analysis of the termination's environmental impacts or consideration of alternative management options—e.g., dam removal. Unlike other compliance proceedings, FERC does not provide public notice of the proposed termination and does not permit intervention in the proceeding.[200] As a result, there are generally no opportunities for either state or federal agencies or the public to provide input as to the resource issues implicated by the termination or to recommend potential mitigation measures to address those resource impacts.

Enloe Dam

The Enloe Hydroelectric Project is located on the Similkameen River in Washington and includes the Enloe dam, the 19th oldest dam in the state. The Okanogan Public Utility District (PUD) has owned the dam since 1945[201] and operated the dam for power until 1958. Since stopping power production, the PUD has pursued reestablishing power at the dam three times—each time unsuccessfully.

In 2013, FERC issued an original license to the PUD to reestablish power at the Enloe Hydroelectric Project.[202] The license required the licensee to commence work to reestablish power operations at the existing facility within two years and to complete work within five years. As permitted by the FPA, the licensee subsequently requested, and FERC granted, two extensions.

When the licensee failed to commence construction in 2019, FERC terminated the license.[203] FERC did not require the licensee to undertake any actions to decommission the project.

Following the termination order, several NGOs sought to intervene in the case and requested rehearing. The NGOs argued that FERC failed to provide public notice of the proposed termination order and failed to ensure that disposition of project works protected the public interest.[204]

[199] *See, e.g.*, *Pub. Util. Dist. No. 1 of Okanogan Cnty, Wash.*, 169 FERC ¶ 61,215 at 62533 (Dec. 19, 2019) (Order Denying Motions to Intervene, Rejecting Request for Rehearing, and Dismissing Request for Stay).
[200] *Id.* at 62,534.
[201] March Stamper State funds research on Enloe Dam removal, Methow Valley News (April 6, 2022), https://methowvalleynews.com/2022/04/06/state-funds-research-on-enloe-dam-removal/.
[202] *Pub. Util. Dist. No. 1 of Okanogan Cnty, Wash.*, 144 FERC ¶ 61,183 (Sept. 4, 2013) (Notice of Request for Rehearing).
[203] *Pub. Util. Dist. No. 1 of Okanogan Cnty, Wash.*, 168 FERC ¶ 62,084 (Aug. 13, 2019) (Order Terminating License).
[204] Motion to Intervene and Request for Rehearing, Further Procedures, and Stay by American Whitewater, Center for Environmental Law and Policy, Columbiana, and Sierra Club of the Order Terminating License for the Enloe Hydroelectric Project, Accession No. 20190909-5165 (Sept. 9, 2019).

FERC denied the motion to intervene, finding that FERC does not permit intervention in a termination proceeding because it is a "ministerial act" that is "solely between the Commission and the licensee."[205] FERC also found that the FPA only requires notice to the licensee. **With respect to the disposition of existing project works, FERC found it "would be inappropriate and . . . represent bad policy" to require a licensee that takes no action under a license to take steps to address project works.**

Following the termination order, jurisdiction over the Enloe dam fell to the Washington Department of Ecology's Division of Dam Safety, which regulates dams to ensure public safety. Under this framework the PUD's compliance obligations are limited to maintaining the dam to meet safety standards. The dam continues to block access to at least 340 miles of potential salmon and steelhead habitat.[206]

Opportunities

As an increasing number of projects are nonoperational and out of compliance with license conditions, how FERC implements its compliance authority has a significant effect on the continuing impact of project infrastructure. While FERC has not clearly defined the scope of its authority to require dam removal in compliance actions, its policy has been to not impose decommissioning requirements as part of license cancelations. In adopting a baseline of the existing project, FERC has avoided finding environmental impacts from license cancelations. In addition, FERC has cited the impracticability of imposing additional requirements on already noncompliant projects. FERC has never independently required dam removal as part of a compliance action.

The practical effect of this approach—particularly when coupled with the lack of any financial assurance requirements in licensing to address project impacts at decommissioning—is to provide a pathway for licensees to divest themselves of projects without addressing a project's continuing public impacts. While FERC suggests that resource impacts can be addressed by state regulators, in many instances state regulatory frameworks do not provide the same authority to mitigate impacts.

Oakland Dam

In 2013 FERC terminated by implied surrender the exemption for the Oakland Hydroelectric Project, which included a 16-foot dam, on the Susquehanna River in Pennsylvania.[207] The project, which was constructed in 1982, ceased generating power in 2002, when the exemptee lost its power purchase agreement. Over the subsequent decade, the exemptee failed to restore the project and address safety and environmental concerns, including inoperable fish passage infrastructure and inability to pass minimum stream flows.

[205] *Pub. Util. Dist. No. 1 of Okanogan Cnty, Wash.*, 169 FERC at 61,215.
[206] Focus on: Future of the Enloe Dam, Washington Department of Ecology, Publication 21-11-004 (March 2021), available at https://apps.ecology.wa.gov/publications/documents/2111004.pdf.
[207] *River Bounty, Inc.*, 142 FERC ¶ 61,126 (Feb. 12, 2013) (Order Terminating Exemption by Implied Surrender).

In 2012 the U.S. Fish and Wildlife Service filed comments on behalf of the Susquehanna River Restoration Cooperative, a multi-jurisdictional cooperative of federal and state natural resource agencies and NGOs, urging FERC to revoke the project's exemption and require removal to address safety and fish passage.[208] As the letter noted, the dam is a "significant barrier to fish migration."

FERC issued a compliance order for failing to comply with the terms of the exemption.[209] In 2013 FERC terminated the license by implied surrender without conditions apart from decommissioning hydropower capacity.

Over a decade after FERC terminated the exemption, the Oakland Dam was removed opening 250 miles of river as habitat and for recreational use, marking the largest dam removal to date in Pennsylvania.[210] The removal was predominantly funded by state and federal grants, with contributions from the owner.

2.1.4 Dam Removal and Licensing Processes

While the above regulatory processes serve as the framework through which FERC approves or requires dam removal, most decisions to remove FERC regulated dams have been driven by regulatory requirements imposed through FERC's administration of its licensing authority. Key components of FERC's licensing authority that influence decisions to remove dams are (1) comprehensive relicensing requirements, (2) conditioning authority, and (3) support for settlements.

Relicensing

The FPA's relicensing requirement creates the structure in which the key drivers of dam removal decisions occur—including reconsideration of development and non-development values, opportunities for stakeholder input and engagement, and the imposition of mitigation conditions.

The FPA requires licensed hydropower projects to apply for a new license at least every 50 years.[211] Relicensing has been described as not a "mere continuation of the status quo," but rather involving a "new commitment of resources,"[212] requiring a reassessment of the project

[208] U.S. Fish and Wildlife Service, Letter RE Oakland Dam, Accession No. 20120507-008 (April 26, 2012).
[209] *River Bounty, Inc.*, 141 FERC ¶ 62,111 (Nov. 15, 2012) (Compliance Order).
[210] Abigail Denhart, The largest dam removal in Pennsylvania, U.S. Fish and Wildlife Service (Oct. 5, 2023), https://www.fws.gov/story/2023-10/largest-dam-removal-pennsylvania (last visited June 17, 2024).
[211] 16 U.S.C. § 808(e).
[212] *Confederated Tribes and Bands of the Yakima Nation v. FERC*, 746 F.2d 466 (9th Cir. 1984).

to determine whether licensing is consistent with the FPA's unique charge that FERC give "*equal* consideration" to both development and non-development values.[213]

The licensing and relicensing processes provide significant opportunity for engagement with stakeholders. A recent study found that hydropower licensing involved consultation with up to eleven separate agencies, in addition to required engagement with Tribes, municipalities, NGOs, and the public.[214] Further, the relicensing process triggers the same environmental review, including NEPA, ESA consultation, and Section 401 water quality certification. FERC and other regulatory agencies also have the same obligations and opportunities to condition projects to mitigate impacts.

The significant capacity and financial investments required to relicense a project coupled with the likelihood of increased compliance costs induces licensees to assess whether the project's anticipated revenue will support the costs of relicensing and, where projects will be uneconomical, to retire projects.

Elwha and Glines Canyon Dams

Located on the Elwha River in Washington, the Elwha Project was comprised of two dams—the Elwha and Glines Canyon. In 1973 the licensee filed an application to relicense the project.

As part of the relicensing process, the Lower Elwha Klallam Tribe, resource agencies, and NGOs, intervened in the relicensing process, urging consideration of dam removal and restoration in lieu of relicensing.[215] In 1991 FERC released a draft environmental impact statement, which considered relicensing with conditions as well as license denial and full and partial dam removal.[216] While the assessment did not identify a preferred alternative, it did find that removal was the option that would restore the river ecosystem and anadromous fish species. The draft EIS also noted that conditioning the project to adequately mitigate impacts would likely make the project uneconomical.

In 1992 Congress passed the Elwha River Ecosystem and Fisheries Restoration Act authorizing the Secretary of Interior to acquire and implement necessary actions to restore the

[213] 18 U.S.C. § 799(e) (emphasis added). A recent report by the National Renewable Energy Laboratory comparing the FPA hydropower relicensing requirements with other federally permitted energy projects found that the FPA's balancing of development and non-development interests was unique among infrastructure permitting frameworks. Levine, Aaron, Brenda Pracheil, Taylor Curtis, Ligia Smith, Jesse Cruce, Matt Aldrovandi, Christa Brelsford, Heather Buchanan, Emily Fekete, Esther Parish, Rocio Uria-Martinez, Megan Johnson, and Debjani Singh, *An Examination of the Hydropower Licensing and Federal Authorization Process*, National Renewable Energy Laboratory, 34 (Oct. 2021), available at https://www.nrel.gov/docs/fy22osti/79242.pdf.

[214] *Id.*

[215] Following project construction, the Olympic National Park boundary was expanded to include both dams. As part of surrender, parties challenged FERC's jurisdiction over the project because they were in a national park. FERC's jurisdiction was ultimately affirmed.

[216] Draft Environmental Impact Statement, Glines Canyon (FERC No. 588) and Elwha (FERC No. 2683) Hydroelectric Projects, Washington (Feb. 1991).

watershed.[217] The Secretary of Interior found that dam removal was necessary to restore the river. Congress appropriated $360 million for dam removal, which was completed in 2016. Removal reopened over 70 miles of salmon habitat, which supported the return of the functionally extinct wild summer-run steelhead.[218]

While dam removal was accomplished outside of FERC's jurisdiction, the relicensing process served as the forum to examine project impacts and raise dam removal as a management alternative.

While relicensing presents the most common framework through which FERC reassesses project impacts, license amendments that involve increased project capacity or certain structural modifications can trigger similar reassessments.[219] As with relicensing, these processes can result in new compliance costs that may incentivize dam removal in lieu of continued operation. In addition, because FERC is directed to consider investments in the project during the license term,[220] where license amendments authorize significant investments in project infrastructure, they may impact later relicensing decisions.[221]

Columbia Falls Dam

In 1986 the Bangor Hydro-Electric Company filed an application to amend its license to add capacity to the West Enfield project, located on the Penobscot River in Maine.[222] In approving the amendment, new conditions were imposed to address impacts to fish, including requiring the release of minimum flows and the study of habitat impacts.

Subsequently, the Bangor-Hydro-Electric Company filed a second application to amend its license, requesting FERC remove license conditions addressing fish resources. In lieu of those conditions, Bangor Hydro-Electric Company proposed to acquire and remove the Columbia Falls dam, located on the Pleasant River, a tributary to the Presumpscot River.[223] FERC approved the license amendment and surrender of the Columbia Falls Project exemption and in 1990 Bangor-Hydro-Electric Company removed the Columbia Falls dam restoring 13 miles of habitat for Atlantic salmon populations.[224]

[217] Elwha River Ecosystem and Fisheries Restoration Act, Public Law Number 102-496 (Oct. 1992).
[218] Sam Davidson, On the Elwha, dams came down, steelhead came back, Trout Unlimited (Jan. 19, 2022), https://www.tu.org/magazine/conservation/barriers/dam-removal/after-dam-removal-on-the-elwha-steelhead-return/ (last visited June 20, 2024).
[219] 18 C.F.R. §§ 4.102(b), 4.38(a)(6)(iv)-(v); *see, e.g., Black Bear Hydro Partners, LLC*, 140 FERC at 62,194.
[220] 16 U.S.C. § 823g(b)(2).
[221] *See* FERC, Preparing Environmental Documents 35 (2008), available at https://www.ferc.gov/sites/default/files/2020-04/PreparingEnvironmentalDocuments.pdf.
[222] *Bangor Hydro-Electric Co.*, 36 FERC ¶ 62,035 (July 15, 1986) (Order Amending License).
[223] *See Bangor Hydro-Electric Co*., 46 FERC ¶ 62,055 (Jan. 23, 1989) (Order Amending License).
[224] *See* Bangor Hydro-Electric Company, Notice of Surrender (Feb. 6, 1990); Brennan Sang, Dam Removal Success Stories Trout Unlimited (Dec. 12, 1999), https://www.tu.org/press-releases/dam-removal-success-stories-executive-summary/

Tugalo Dam

Located on the Chattooga River, Tugalo Dam, part of the North Georgia Hydroelectric Project, is only barrier on the national wild and scenic Chattooga River. In 2021 Georgia Power Company sought a license amendment to replace four generating units at its Tugalo Project. The proposed upgrades would increase power capacity by 42% at a cost of $115 million.

Several NGOs filed comments arguing that FERC should consider dam removal as an alternative to modifying the facility. The NGOs noted that the substantial investment in the project would serve to prolong its life and could influence relicensing decisions, which would occur in 2036.[225]

FERC declined to consider dam removal in its environmental assessment, noting that it was outside the scope of the amendment proceeding and would not prejudice a subsequent relicensing decision.[226] In 2023 FERC approved the license amendment.[227]

Conditioning Authority

The authority to require licensees to mitigate project impacts as a condition of licensing has been a primary driver of dam removal decisions. The FPA directs FERC to condition licenses to ensure they are best adapted for the development of the waterway and to mitigate impacts to non-development values.[228]

In addition, the FPA provides state and federal agencies a role in prescribing and recommending conditions to protect non-development values and bounds FERC's authority to accept or reject these conditions. Unlike FERC who is directed to give equal consideration to development and non-development values, resource agencies may focus solely on remediating impacts to the public resources they regulate.

FERC must include conditions imposed:[229]

- By the federal agency that manages federal lands where a project is located to ensure consistency with the purposes of the federal lands.[230]

[225] Motion to Intervene and Comments by American Rivers, American Whitewater, Chattooga Conservancy, Georgia Canoeing Association, and Upstate Forever, Georgia Power Company, North Georgia Hydroelectric Project, Project No. 2354-152, Accession No. 20211126-5038 (Nov. 26, 2021).
[226] Environmental Assessment for Non-Capacity Amendment of License, North Georgia Hydroelectric Project, FERC No. 2354-152, 15 (Dec 1, 2022).
[227] *Georgia Power Company*, 182 FERC ¶ 61,087 (Feb. 16, 2023).
[228] 16 U.S.C. § 803.
[229] Courts have required that conditions be "reasonably related" to the project effects on the reservation. *Escondido Mut. Water Co. et. al. v. La Jolla Band of Mission Indians et. al.*, 466 U.S. at 772-77 (FERC must accept license conditions under Section 4(e)); *see also Bangor Hydro-Electric Co. v. FERC et. al.*, 78 F.3d 659 (1996) (requiring agencies to support prescribed conditions with a record filed with FERC).
[230] 16 U.S.C. § 799(e). FPA refers to federal lands as federal reservations.

- By the Secretary of Commerce to provide fish passage—e.g., fish ladders or minimum flow releases—for fish species impacted by the project.[231]
- By state and federal resource agencies "to prevent loss of or damage to" fish and wildlife resources by exempt projects.[232]

In addition to mandatory conditioning authority, the FPA requires FERC to consider conditions:

- By state and federal fish and wildlife agencies to "protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat) affected by the development, operation and maintenance of the project."[233] While FERC must defer to the agency's recommended conditions,[234] it may decline to include them if it publishes a determination that (1) the conditions are not consistent with the FPA or other applicable law or (2) other conditions will address the agency's resource concerns.
- By state and federal agencies and affected Tribes to ensure the project is "best adapted for a comprehensive plan" for the development and non-development uses of the waterway.[235] While FERC must consider these conditions, it has broad discretion to accept, modify, or reject the conditions.[236]

The FPA's conditioning framework influences dam removal decisions by imposing costs that shift the economics of projects. Conditions impose direct costs to implement mitigation requirements—e.g., by requiring construction of fish passage facilities. They can also lower a project's potential power capacity—e.g., by requiring minimum instream flows that reduce the amount of water available for power generation—resulting in reduced profit potential.

FERC has interpreted the FPA's requirement that FERC give equal consideration in licensing to development and non-development values to allow it to impose conditions that would make a project uneconomical.[237] While FERC assesses the reasonableness of conditions—considering implementation costs and benefits—depending on a project's impacts, reasonable conditions may be ones that result in a project being uneconomical. As FERC reasoned, dismissing conditions solely because they would impact the economic viability of a project would prioritize development interests over non-development interests in contravention of the FPA's

[231] *Id.* § 811. Secretary of Commerce may impose fishway conditions. Congress has defined the range of activities that constitute fishways for purposes of Section 18. Section 1701(b) of the NEPA of 1992, Pub. L. No. 102-486 ("The items which may constitute a 'fishway' under Section 18 for the safe and timely upstream and downstream passage of fish must be limited to physical structures, facilities, or devices necessary to maintain all life stages of such fish, and Project operations and measures related to such structures, facilities, or devices which are necessary to ensure the effectiveness of such structures, facilities, or devices for such fish.").
[232] 16 U.S.C. § 823e(c).
[233] *Id.* § 811(j).
[234] *American Rivers v. FERC*, 201 F.3d at 1210.
[235] 16 U.S.C. § 803(a) (these conditions may address a range of impacts).
[236] In contrast to 16 U.S.C. § 808(10)(c), FERC does not need to demonstrate that the conditions are outside the scope of the agency's conditioning authority or inconsistent with the FPA's purposes and requirements.
[237] *See* Project Decommissioning at Relicensing, 60 Fed. Reg. at 341.

requirements. FERC's authority to issue license conditions that make a project uneconomical has been upheld.[238]

Cushman Hydro Project

In 1998 FERC issued a relicense order, proposing the terms and conditions upon which to issue a new license to Tacoma Power to operate the Cushman Project located on the North Fork of the Skokomish River in Washington.[239] The project included two dams with reservoirs and three powerhouses.

FERC's order was broadly appealed, including by Tacoma Power which asserted that FERC had exceeded its jurisdiction by including license conditions that would make the project uneconomical.[240] Tacoma Power argued that in imposing these conditions FERC had de facto denied the project a new license, which exceeded its authority under the FPA.

On appeal, the court held that FERC acted within the scope of its authority in prescribing license conditions that could make a project uneconomical for a licensee.[241] **It found that "Congress implicitly extended to FERC the power to shut down projects either directly, by denying a new license, or indirectly, by imposing reasonable and necessary conditions that cause the licensee to reject the new license."**[242] The court noted that in creating the relicensing scheme, Congress intended to provide an opportunity to reassess projects in light of current laws and understanding, and that this provision would be diluted if FERC were required to issue a new license even when the project was not best suited for development of the waterway.

Subsequently, a settlement was reached between the Tribe and Tacoma Power that provided for the transfer of lands to the Tribe, construction of a hatchery, and monetary payments to the Tribe for past damages, ongoing use of tribal lands, and a share of the electrical production profits from the project.[243]

Settlements

The settlement process provides a framework to develop collaborative solutions to resolve licensing disputes. FERC's policy is to support and give effect to settlement agreements.[244] In

[238] *See City of Tacoma, Wash. v. FERC*, 460 F.3d 53 (D.C. Cir. 2006) (affirming FERC's authority to impose license condition that make a project uneconomical).
[239] *City of Tacoma, Wash.*, 84 FERC ¶ 61,107 (July 30, 1998) (Order Issuing Subsequent Major License, Dismissing Complaint as Moot, and Rejecting Motion to Intervene).
[240] *See, e.g.*, *City of Tacoma, Wash*, 85 FERC ¶ 61,130 (Oct. 28, 1998) (Order Denying Motion for Clarification and Granting Partial Stay Pending Rehearing).
[241] *City of Tacoma, Wash.*, 460 F.3d at 53.
[242] *Id.*
[243] Settlement Agreement for the Cushman Project (Jan. 12, 2009).
[244] Settlements in Hydropower Licensing Proceedings Under Part I of the Federal Power Act, Policy Statement on Hydropower Licensing Settlements, PL-06-5-000 (Sept. 21, 2006).

practice, FERC may incorporate a settlement provision as a license condition if it meets the FPA's comprehensive development standard and FERC has jurisdiction to enforce the provision.[245] FERC's policy statement on settlements and its prior practice provide details on how FERC assesses particular types of settlement provisions. Where provisions are not integrated into the license, they continue to bind settlement parties as off-license provisions.[246]

Most dam removals are the result of collaboration between dam owners, government entities, and NGOs. The settlement process provides a pathway to elevate dam removal as a management option to address project impacts and as a decommissioning alternative when a licensee no longer wishes to maintain a project.

Because settlement agreements are made outside the regulatory framework, they can integrate a broader range of activities to mitigate project impacts. For example, in a negotiated settlement, authority to prescribe fish passage conditions can incentivize alternative approaches to address resource impacts, such as the removal of dams that are high priority fish passage barriers as mitigation for more profitable or strategically important projects. These solutions can be a win-win for the licensee, stakeholders, agencies, and ecosystems.

Settlements may also address stakeholder concerns and resolve regulatory issues that can arise with a proposed dam removal. For example, settlement agreements have been used to resolve permitting issues with environmental impacts of removal (e.g., sediment release or the loss of constructed habitat), address public opposition to removal, and build support for removal timelines (e.g., allowing for continued operation for a period of years to generate funds to defray the costs of decommissioning).

Lastly, while FERC will not adopt license conditions that require future decommissioning, settlement provisions have directed licensees to study and develop funding to support potential future project retirement.[247]

Mill Pond Dam

In 2003 the Pend Oreille Public Utility filed a notice of intent that it did not intend to seek a new license for its Sullivan Creek Project, consisting of two dams—Mill Pond and Sullivan Creek—located on Sullivan Creek in Washington.[248] When no other parties filed an application for the

[245] *Id.* at 2.
[246] *Id.* at 2.
[247] *See New England Power Co.*, 79 FERC ¶ 61,006 at 61,026 (April 4, 1997) (Order Approving Offer of Settlement and Issuing New License) (accepting as license condition requirement that licensee study retirement options); *Consumer Power Co.*, 68 FERC ¶ 61,077 at 61,380-81 (July 15, 1994) (Order on Offer of Settlement) (accepting as license condition requirement that licensee establish trust fund to pay for potential future decommissioning costs).
[248] Notice of Intent not to File an Application for New License of Public Utility District 1 Pend Oreille County's Sullivan Creek Project-2225, Accession No. 20031022-3048 (Oct. 31, 2003).

project, the licensee prepared a surrender application and engaged resource agencies, Tribes, and stakeholders to develop a plan for decommissioning.[249]

Simultaneously, Seattle City Light was relicensing its Boundary Project, located on the Pend Oreille River, downstream of the Sullivan Creek Project.[250] As part of that licensing process, Seattle City of Light collaborated with resource agencies and stakeholders to address project impacts while still maintaining the power capacity and economic viability of the project.

As a result of the collaborative process, Seattle City of Light agreed to perform a variety of mitigation measures in exchange for support of its application to license the Boundary Project, including to fund the Mill Pond dam removal and provide financial and capacity support to modify operations of the Sullivan Creek Dam to provide cold water releases to improve downstream habitat.[251]

Consistent with the settlement agreement, the licensee for the Sullivan Creek Project surrendered its license and proposed removal of the Mill Pond Dam. FERC approved the license surrender[252] and the dam was removed in 2017, restoring 46 river miles of habitat.[253]

Opportunities

The FPA's licensing framework has been a primary driver of decisions to remove FERC-licensed dams. The relicensing process has been a contributing factor in over half of all dam removals under FERC jurisdiction. Of these dam removals, environmental mitigation requirements coupled with project economics were the most common reason cited for decommissioning a project.[254] Settlement agreements played a role in almost 70% of these dam removals.

Between 2020 and 2029, 281 projects will be up for relicensing, representing about 12% of the total generating capacity of FERC-licensed projects.[255] A survey of dam owners identified the economics of relicensing and environmental considerations as key drivers of their consideration of decommissioning.[256] FERC's implementation of and agency and stakeholder engagement in

[249] Notice of Application for Surrender of License Accepted for Filing, Soliciting Comments, Motions to Intervene and Protests, and Ready for Environmental Analysis (July 6, 2010), 75 Fed. Reg. 40800 (July 14, 2010).
[250] *See, e.g.*, *City of Seattle, Wash.*, 142 FERC ¶ 62,231 (March 20, 2013) (Order Issuing a New License).
[251] Notice of Settlement Agreement and Soliciting Public Comments (April 1, 2010), 75 Fed. Reg. 18203 (April 9, 2010).
[252] *Pub. Util. Dist. No. 1 Pend Oreille Cnty, Wash.*, 142 FERC ¶ 62,232 (March 20, 2013) (Order Accepting Surrender of License and Authorizing Disposition of Project Works).
[253] Nathan MacDonald, Removing Mill Pond Dam: How Seattle City Light Restored Sullivan Creek (Aug. 3, 2020) https://powerlines.seattle.gov/2020/08/03/removing-mill-pond-dam-how-seattle-city-light-restored-sullivan-creek/ (last visited June 20, 2024).
[254] *See* Appendix A: Table of Dams Removed Under FERC Jurisdiction.
[255] Licenses, Federal Energy Regulatory Commission, https://www.ferc.gov/sites/default/files/2020-06/exemptions.xls (last visited April 10, 2023).
[256] Ear to the River, Hydropower Industry Research of Owners for Owners, 20-21 (March 2022), available at https://www.kleinschmidtgroup.com/wp-content/uploads/2023/09/EarToTheRiver_FINALMar2022-email-

these relicensing processes will play an important role in whether and how projects are retired and dams are removed.

2.2 History of Dams Removed While Under Federal Energy Regulatory Commission Jurisdiction

This report identified 39 dams removed under FERC's jurisdiction.[257] The first two removals of FERC-regulated dams occurred in 1973. In 1972 the Washington Water Power Company applied to surrender its license to allow for the removal of the Lewiston Dam on the Clearwater River in Idaho in advance of the construction of two U.S. Army Corps of Engineers (USACE) dams that would inundate the area.[258] The dam was removed in 1973. Also in 1973, FERC approved the license surrender and removal of the Fort Edwards Dam on the Hudson River in New York.[259] The licensee proposed removal due to concerns around the potential for a dam failure. The dam was removed that same year but became a cautionary tale when the removal released PCB-contaminated sediment downstream.[260] Another FERC regulated dam was not removed until 1988 when the Columbia Falls dam on the Pleasant River in Maine was removed as habitat mitigation for impacts from a separate project.[261]

In almost all cases, dam removals have been voluntarily proposed by the licensee. Most dam removal decisions have occurred at the expiration of the project's license. Voluntary surrenders during the term of a license accounted for the second highest number of dam removals.

This report identified only three instances where FERC imposed dam removal requirements on a licensee. The first instance was in the Edwards Dam relicensing, where FERC affirmatively denied a new license and ordered the licensee to remove the project's dam.[262] Since the Edwards Dam, FERC has not proactively required the removal of a dam in relicensing.

FERC has required the removal of project dams in two other instances, as part of a license revocation order and a termination by implied surrender order. However, in both cases, removal of project works was ordered based on requirements imposed by other resource agencies. In one case, the U.S. Forest Service imposed removal as a condition of permitting the project to use federal lands.[263] The decommissioning requirement was removed after licensee noncompliance. In the second, the Idaho Fish and Game Commission required restoration as a

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version.pdf (all dam owners surveyed identified project economics as a reason for decommissioning and 62.5% of identified environmental considerations as a reason for decommissioning).

[257] A list of dams removed is provided in Appendix A: Table of Dams Removed Under FERC Jurisdiction.

[258] *The Wash. Water Power Co.*, 48 FPC ¶ 1,134 (Nov. 22, 1972) (Order Accepting Surrender of License)

[259] *Niagara Mohawk Power Corp.*, 49 FPC ¶ 1,352 (June 14, 1973) (Order Approving Proposed Amendment of License).

[260] Hudson River PCBs Superfund Site, Actions Prior to EPA's February 2002 Record of Decision, Environmental Protection Agency, https://www.epa.gov/hudsonriverpcbs/actions-prior-epas-february-2002-record-decision-rod

[261] *See supra* pages 40-1 for discussion.

[262] *Edwards Mfg. Co.*, 81 FERC at 61,255; *see supra* pages 22 for discussion.

[263] *Larry Hensley Eugene Mark Souza*, 122 FERC at 62,201.

condition of the FERC exemption.[264] This report could not determine whether the project works were ultimately removed.

The Department of Energy's 2023 Hydropower Market Report identified 68 FERC orders ending hydropower licenses issued between 2010 and 2022.[265] During that same time, FERC relicensed 121 projects. Sixteen FERC-regulated dams were voluntarily removed during this period. Between the same period 1,067 dams were removed in the United States.[266]

While this report focuses on the removal of FERC-regulated dams, FERC's regulatory oversight has also influenced the removal of non-regulated dams and dams that were previously regulated by FERC. For example, the removal of non-regulated dams has been incorporated as part of settlement agreements that resolve resource issues in relicensing.[267] In other instances, decisions to remove a dam have been made while the dam was licensed by FERC, but the parties elected to have the licensee surrender its license without removing project works and pursue dam removal once the project was no longer regulated by FERC.[268]

Ela Dam

The Ela Dam, part of the Bryson Hydropower Project, is the only dam on the Oconaluftee River in North Carolina.[269] Following a dam breach and accidental sediment release, a coalition of the Eastern Band of Cherokee Indians, state and federal agencies, nonprofits, and local communities formed to explore dam removal.

In lieu of repairing the dam, the coalition proposed that the licensee surrender its FERC license and then transfer the dam to the coalition for removal. In 2023 the licensee filed its application to surrender its license.[270] The application, which was supported by coalition

[264] *H.E.E.D. Co., Inc.*, 91 FERC at 62,063.

[265] Erick H. Schmidt, Gbadebo Oladosu, Colin Sasthav, Kyle Desomber, Kenneth D. Ham, Corey Vezina, U.S. Hydropower Market Report, 2023 Edition, Department of Energy, Office of Energy Efficiency and Renewable Energy, 3 (2023), available at https://www.energy.gov/sites/default/files/2023-09/U.S.%20Hydropower%20Market%20Report%202023%20Edition.pdf.

[266] American Rivers, Map of U.S. Dams Removed Since 1912, https://www.americanrivers.org/threats-solutions/restoring-damaged-rivers/dam-removal-map/ (last visited June 24, 2024).

[267] *See, e.g.*, Wilderness Shores Settlement Agreement (Feb. 10, 1997) (providing for the removal of the state regulated Woods Creek Dam as one part of a settlement to relicense the eight FERC licensed projects in the Menominee River Basin).

[268] Examples include *City of River Falls, Wis.*, 178 FERC ¶ 62,056 (Jan. 28, 2022) (Powell Dam) (Order Amending License to Remove the Powell Falls Development, Revising Annual Charges, and Revising Project Description); *Ray F. Ward*, 162 FERC at 62,061 (Ward Mill Dam); *Eagle and Phenix Hydro Co., Inc., UPtown Columbus, Inc.*, 135 FERC ¶ 62,201 (June 8, 2011) (Eagle and Phenix Mill) (Order Accepting Surrender of License and Exemption); *Great Bear Hydropower, Inc.*, 156 FERC at 113 (Columbia Dam).

[269] Ela Dam Removal, Oconaluftee River, Swain County, North Carolina, U.S. Fish and Wildlife Service, https://www.fws.gov/project/ela-dam-removal-oconaluftee-river-swain-county-north-carolina (last visited June 18, 2024).

[270] Northbrook Carolina Hydro II, LLC, Submission of Application for License Surrender, Byson Hydroelectric Project, P-2601, Accession No. 20231116-5183 (Nov. 16, 2023).

members, noted that the licensee planned to transfer the site to a local nonprofit for restoration following surrender.[271] The removal will restore 549 miles of habitat, which will support endangered and threatened species and the site will eventually be returned to the Tribe.[272]

2.3 Regulatory Obstacles and Recommended Policy Changes

While the FPA and FERC's implementation of its regulatory authority provides unique opportunities to advance dam removals—through comprehensive licensing processes and the authority to approve project retirement—they also impose obstacles.

Unclear authority, processes, and criteria to direct decommissioning has resulted in a failure to meaningfully consider dam removal in licensing, license surrender, and compliance proceedings. In addition, FERC's implementation of its regulatory processes minimizes the environmental impacts of licensing and compliance actions and creates pathways for licensees to retire projects without accounting for or mitigating ongoing project impacts. Lastly, regulatory requirements hinder the removal of dams even when proposed by the dam owner.

The cumulative result of these obstacles is a failure to capitalize on opportunities to remove dams that are not in the public interest. The end of FERC's regulatory authority may present the last time a dam owner will be required to comprehensively assess and mitigate a dam's impacts. As a result, once a project is no longer licensed, dam owners frequently have less incentive to consider dam removal, meaning dams often remain on the landscape and the public has less recourse to address their impacts.

This section describes eight regulatory obstacles to the removal of FERC-licensed dams and identifies policy solutions to address each obstacle. Barriers are discussed in order of greatest to least impact on dam removal:

- Approach to assessing environmental impacts biases against dam removal.
- Unclear license surrender process.
- Inadequate financial assurance measures to ensure compliance with license conditions and ability to decommission project.
- Uncodified authority to order project retirement and dam removal.
- Approach to compliance violations incentivizes abandonment of noncompliant and obsolete projects.
- Transfer practices allow licensees to avoid liability and impede dam removal.
- Perpetual licenses for exempt projects.

[271] *See, e.g.*, American Rivers, Motion to Intervene and Comments of American Rivers Under the Bryson Dam Hydroelectric Project (P-2601), Accession No. 20240311-5117 (March 11, 2024).
[272] Ela Dam Removal Project, American Rivers, https://www.americanrivers.org/ela-dam-removal-project/ (last visited June 22, 2024).

- Settlement policy requiring close nexus between mitigation measures and project impacts and boundaries hampers use of settlement agreements to advance dam removal.

There are often several possible pathways to implement a policy solution and the pathway can influence the likelihood of success in achieving the change and its durability and impact. In general, implementation pathways follow a sliding scale of most to least political and procedural obstacles—statutory amendments, rulemaking, and changes in agency policy or practice.[273] The durability of the solution follows a similar sliding scale, with statutory amendments being more durable and administrative changes being easier to undo and more vulnerable to legal challenge (particularly when made without express statutory authority). This report generally identifies the easiest pathway to implement the policy solution, but other approaches may be preferable based on the importance of durability and the political and legal context.

Barrier: Approach to assessing environmental impacts biases against dam removal.

FERC uses the existing project, with existing impacts, as the baseline against which it assesses the environmental impacts of administrative actions.[274] This approach diminishes project impacts and results in a process that is weighted towards the status quo.

Functionally, the use of the existing project baseline means FERC finds there will be no environmental impact from administrative actions unless the action authorizes ground disturbance. Because most license surrenders and compliance actions only involve disabling power generation, FERC has usually found that these actions will have no significant environmental impact. FERC is then able to ignore and, therefore, also fails to address, the often-significant environmental impacts of a project continuing to remain on the landscape.[275] Relying on this reasoning, FERC regulations categorically exclude compliance actions—implied surrenders,[276] revocations, and terminations[277]—from NEPA analysis.

This approach also biases FERC's assessment of reasonable action alternatives. FERC's practice is not to consider decommissioning a reasonable alternative in most licensing decisions, and, in practice FERC has eliminated dam removal as a reasonable alternative in almost every environmental review of new and subsequent licenses in the last decade. The process of identifying and analyzing reasonable alternatives is critical to understanding whether and how

[273] In some cases entrenched agency policies may be more difficult to change without congressional or judicial intervention.
[274] *See City of Tacoma*, 67 FERC ¶ 61,152 (1994).
[275] *See, e.g.*, Comments of State of Maine Department of Marine Resources on Notice of Application for Surrender of License for the Lower Mousam Hydroelectric Project (May 19, 2021) (noting that surrender without dam removal will have environmental impacts because the project will continue to block fish passage and have water quality impacts).
[276] *See, e.g.*, *James B. Boyd and Janet A. Boyd*, 136 FERC at 62,119 (classifying its order terminating the license by implied surrender an administrative action categorically excluded from NEPA analysis under 18 C.F.R. § 380.4(a)(1), because all project facilities were left in place).
[277] 18 C.F.R. § 380.4 (excluding compliance actions from NEPA requirements).

different management options will affect the environment and meet the FPA's charge that FERC give equal consideration to development and non-development interests in the waterway. If FERC does not study decommissioning as a reasonable alternative in its environmental analysis, FERC will not meaningfully consider dam removal as a management option in its regulatory decision making.[278]

Policy solutions:

- Amend regulations to remove license revocations and terminations from regulatory actions categorically excluded from NEPA analysis.[279]
- Revise policy on assessment of project impacts and alternatives analysis to (1) use an environmental baseline of the environment without the project,[280] (2) remove presumption that retirement and decommissioning will only be considered in "rare instances," and (3) for dams serving multiple purposes, assess whether other purposes may be met through other means.

Barrier: Unclear license surrender process.

The license surrender process and criteria FERC applies to determine the appropriate decommissioning of project works at surrender is not clearly defined in the FPA or FERC's regulations. License surrender may present the last time a dam's impacts are comprehensively assessed and mitigated and, therefore, presents an important opportunity to remove dams that are no longer in the public interest.

To improve consistency in FERC's processes and provide clarity for licensees, government entities and the public, this report recommends the following policy changes.

- **Amend regulations to clarify requirement to file decommissioning plan for all surrender applications.**

FERC's regulations provide limited information on the requirement to develop decommissioning plans for license surrenders. Substantively, regulations require that the application identify the reason for surrender[281] and for projects that are surrendered at the end of a license term, the filing of a decommissioning plan.[282] For exemptions, the exemptee must file a decommissioning plan.[283]

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[278] The licensee may still decline a license issued by FERC and elect to surrender its license and remove the project. 16 U.S.C. § 803.

[279] 18 C.F.R. § 380.4.

[280] While FERC's use of the existing project as the baseline or "no action" alternative has been affirmed by courts, FERC is not precluded from revising its policy for how it considers pre-project conditions and ongoing impacts. *American Rivers v. FERC,* 201 F.3d at 1195-96 (affirming FERC's use of baseline with existing project infrastructure and effects).

[281] *Id.* § 6.1.

[282] *Id.* §§ 16.26, .25.

[283] *Id.* § 4.102(b).

While FERC has in practice required the submission of a decommissioning plan for all surrender applications, FERC should amend its regulations to clarify that decommissioning plans are required for license surrenders during the license term and to clarify the content of plans.[284]

- **Amend regulations and FPA to clarify consultation requirements for surrender applications.**

Prior to filing a surrender application for licenses at the end of the license term and for exemptions, FERC regulations require licensees to consult with relevant Tribes and state and federal resource agencies.[285] FERC regulations should codify that consultation requirements apply to licenses surrendered during the license term. In addition, FERC regulations should clarify that licensees must consult on the development of decommissioning plans.

The FPA does not prescribe how FERC must consider agency and Tribal government conditions in license surrenders. For licenses, FERC regulations require a licensee of a project that occupies federal lands to restore project lands to the condition required by the federal agency that manages the land.[286] For exemptions, FERC regulations provide that exemptions may be surrendered "upon such conditions with respect to the disposition of project works" as prescribed by the Commission and fish and wildlife agencies.[287]

Congress should codify how FERC should consider agency and Tribal government recommended conditions in license surrenders. This approach could mirror how FERC considers agency proposed conditions in licensing to ensure projects are "best adapted to a comprehensive plan for improving or developing a waterway," which requires FERC to consider agency and Tribal government proposed conditions but provides discretion on which conditions to adopt.[288] In addition, FERC regulations should direct that licensees with projects occupying Tribal lands restore project lands to the condition required by the affected Tribe.[289]

- **Amend FPA to provide standard to assess license surrenders.**

The FPA does not identify the standard FERC must use to assess whether to approve a license surrender.[290] In practice, FERC has adopted a general "public interest" standard, which FERC has described as ensuring the proposed surrender is protective of the environment and public safety and avoids gaps and uncertainties in the regulation of the project.[291]

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[284] How to Surrender a License of Exemption, FERC, https://www.ferc.gov/administration-and-compliance/how-surrender-license-or-exemption (last visited June 24, 2024); *see, e.g.*, *S. Cal. Edison Co.*, 106 FERC at 61,212 (requiring licensee to consult with state and federal resource agencies prior to submitting its surrender application).

[285] 18 C.F.R. §§ 16.8, 4.102(b).

[286] *Id.* § 6.2.

[287] *Id.* § 4.102(d).

[288] See 16 U.S.C. § 803(a).

[289] FERC recently announced a policy to deny preliminary permits to projects located on Tribal lands when the Tribe objects. *See, e.g.*, *Western Navajo Pumped Storage 1, LLC and Western Navajo Pumped Storage 2, LLC*, 186 FERC ¶ 61,120 (Feb 15, 2024) (Order Denying Applications for a Preliminary Permit).

[290] *See* 16 U.S.C. § 803(c).

[291] *See, e.g.*, *Niagara Mohawk Power Corp. and Forth Branch Assoc.*, 83 FERC at 61,226. Because the issuance of a

Beyond these broad contours, it remains unclear what factors FERC applies to determine the actions required to protect the public interest at project retirement. The lack of a clear standard creates uncertainties for licensees about conditions FERC will impose as part of a surrender order and for stakeholders in how to engage in the surrender process and gives FERC relatively unreviewable discretion to determine the appropriate disposition of projects.

- **Establish policy to consider river basin context and project cumulative impacts in determining appropriate decommissioning requirements.**

FERC should consider river basin context and a project's cumulative impacts in determining appropriate decommissioning requirements in license surrender. These considerations are critical to understanding a project's continuing impacts in context of development and restoration priorities for a river basin. For example, FERC should consider likelihood of remediation of downstream fish passage barriers; basin comprehensive plans, which provide a framework for managing hydropower development across an entire basin;[292] and state fish passage barrier prioritizations, which identify high priority passage barriers for remediation and removal.[293]

- **Adopt guidance clarifying FERC consultation with state agencies with successor jurisdiction over projects.**

Once FERC authorizes a project to leave its jurisdiction, except for projects that were sited at federally owned dams, the project infrastructure will be regulated by the state or unregulated. States generally lack a comprehensive regulatory program for dams, which can mean fewer opportunities to engage with dam owners to address resource impacts after license surrender. Consultation with successor state regulatory agencies prior to license surrender can help ensure FERC considers the presence or absence of state regulatory authority in making its determination about the appropriate scope of decommissioning.

FERC regulations require that upon the filing of a surrender application, the applicant provide notice to any government entity that will be assuming regulatory control over the project.[294] In addition, FERC's policy statement on decommissioning notes that prior to approving a decommissioning plan that will leave the dam in place, it "generally wants to be satisfied that there is another authority to take over regulatory supervision."[295] FERC should clarify in guidance how staff will consult with and consider comments from successor regulatory entities.

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surrender or nonpower license is not licensing decisions, the balancing standard used in licensing decisions does not apply.

[292] *See* Taylor L. Curtis and Heather Buchanan, Basin-Wide Approaches to Hydropower Relicensing: Case Studies and Considerations, National Renewable Energy Laboratory (2019) (describing the benefits of basin-wide approaches to hydropower licensing), available at https://www.nrel.gov/docs/fy19osti/71979.pdf.

[293] *See, e.g.*, Oregon Department of Fish and Wildlife, Fish Passage Barrier Inventories, https://www.dfw.state.or.us/fish/passage/inventories.asp (last visited June 22, 2024).

[294] 18 C.F.R. §16.8(d).

[295] *See* Project Decommissioning at Relicensing, 60 Fed. Reg. at 341.

Stuyvesant Falls Dam

The Stuyvesant Falls project, located on Kinderhook Creek in New York, was originally licensed in 1980.[296] In 1996, the licensee applied to surrender its license following maintenance issues that caused the project to stop generating power. The project proposed to decommission power generation and secure the facilities to protect public safety.

Resource agencies and other parties urged FERC to consider more comprehensive decommissioning.[297] However, FERC ultimately adopted the licensee's proposed conditions, noting that the conditions would secure the project and maintain current environmental conditions.[298]

The New York Department of Environmental Conservation subsequently wrote to FERC regarding FERC's failure to appropriately consult with state regulatory agencies to determine the scope of the state's jurisdiction over the project prior to approving its surrender.[299] **The letter highlighted that New York's regulatory jurisdiction was limited to ensuring the safety of the project and provided no authority over environmental or other resource impacts.** As such, the state would have preferred to have the opportunity to address resource impacts that are unregulated by the state as part of license surrender

Following surrender, the plant was relicensed to another licensee and power generation was restored.

Cedar Falls Hydroelectric Project

In 1984 FERC granted the Piedmont Triad Regional Water Authority an exemption to operate the existing Cedar Falls Hydroelectric Project.[300] The project included two dams, a powerhouse, and transmission lines, among other infrastructure. In 2006 FERC found the project nonoperational and the exemptee did not respond to FERC's inquiries about the project's status.

In 2013 FERC terminated the license through implied surrender without conditions.[301] FERC did not conduct an environmental assessment, noting that because they were not ordering any modifications the order was purely administrative and would have no effect on the environment. FERC recognized that, due to the dam's size, it would not be under the

[296] *Niagara Mohawk Power Corp.*, 12 FERC ¶ 62,094 (Order Issuing License (Major)).
[297] *See, e.g.*, U.S. Fish and Wildlife Service, Letter Re: Notice of Availability of Environmental Assessment for Stuyvesant Falls Project, FERC Project No. 2696, Accession No. 19970620-0306 (June 6, 1997).
[298] *Niagara Mohawk Power Corp. and Forth Branch Assoc.*, 83 FERC at 61,226.
[299] New York State Department of Environmental Conservation, Letter Re: Stuyvesant Falls License Surrender, Accession No. 9904050267-3 (March 25, 1999).
[300] *Piedmont Triad Reg'l Water Auth.,* 143 FERC ¶ 62,054 at 64,151 (2013) (Order Terminating Exemption by Implied Surrender).
[301] *Id.*

jurisdiction of North Carolina but did not consider the lack of a succeeding regulatory authority in determining what conditions to impose.

- **Amend FPA and regulations to authorize FERC to accept license surrender and decommissioning at the end of a project license without soliciting new applications.**

If a licensee does not wish to seek relicensing, the FPA and FERC regulations require FERC to provide public notice of a licensee's intent to seek relicensing and solicit alternative applications for projects.[302] As a result, even in circumstances where the licensee has reached agreement with resource agencies and stakeholders to retire and remove project works, another applicant may apply to maintain the project.[303] Amending the FPA and FERC regulations to provide FERC discretion to accept license surrender and project removal at relicensing without opening the project to competing license applications would support collaborative solutions between licensees and partners to retire projects that are no longer in the public interest.

Barrier: Inadequate financial assurance measures to ensure compliance with license conditions and ability to pay decommissioning costs.

The lack of financial assurance measures to ensure licensees can pay costs to implement license conditions and address decommissioning at the end of a license has constrained FERC's ability to meaningfully address the disposition of noncompliant projects.

In its decommissioning policy statement, FERC determined it had authority to impose financial assurance measures to ensure the licensee could pay decommissioning costs associated with the project.[304] FERC recognized that "[w]ithout advance planning, the financing of decommissioning costs may well cause problems at the time of decommissioning."[305] And found that in the absence of a federal takeover or other agreement between interested parties, "the licensee has the responsibility for project retirement," including the cost of decommissioning.[306]

FERC considered three options for financial assurance measures: (1) impose a standard fee in all licenses to be placed in a common decommissioning fund, (2) impose a standard financial assurances requirement in all licenses that would ensure licensees have the capital to address potential decommissioning costs, and (3) impose financial requirements on a project-by-project basis based on the likelihood that the project would need to be decommissioned and the risk the licensee may not have the financial capacity to cover those costs.

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[302] 16 U.S.C. § 808(b); 18 C.F.R. §§ 16.25, .26.

[303] During relicensing discussions, the Kilarc-Cow Creek Hydroelectric Project reached agreement with agencies and stakeholders to retire project and remove project works. *See* Agreement could signal end of dam, International Water Power and Dam Construction (March 29, 2005), https://www.waterpowermagazine.com/news/agreement-could-signal-end-of-dam/ (last visited June 20, 2024). FERC was still required to solicit applications for the project before accepting surrender. Kilarc-Cow Creek Project, Notice of Intent to File Application for New License, 70 Fed. Reg. 42051 (July 21, 2005).

[304] *See* Project Decommissioning at Relicensing, 60 Fed. Reg. at 346-47.

[305] *Id.* at 347.

[306] *Id.*

FERC adopted the last option, noting that it was reticent to impose costs on projects to address an uncertain future contingency and that it had not identified a need for a general decommissioning fund.[307] This current ad hoc approach has proven inadequate to address the increasing number of projects that do not have the financial capacity to pay costs to maintain projects in compliance with their license or to decommission the project. As FERC recently noted, "the Commission has seen increasing numbers of projects that are non-operational or out of compliance with their license conditions, where licensees have stated that they cannot afford to operate or maintain the projects or implement required environmental or safety measures."[308] In 2022 FERC sought public feedback on the need for and mechanisms to impose financial assurance measures.[309]

The lack of financial assurance measures or a separate source of decommissioning funding has meant that once a project is out of compliance with its license (e.g., abandons the project, fails to maintain project works, or meet license conditions), FERC has limited options to remediate the noncompliance. FERC's current approach is to simply terminate the license, noting that, practically, it is unrealistic to require additional compliance when a project is already noncompliant.[310] However, as FERC itself has recognized, this approach can ignore the reality that in many cases the licensee has obtained the benefits of the license without complying with the license terms, which are the mechanism FERC uses to ensure that the project is in the public interest.[311] Further, this approach ignores the reality that project impacts will continue following the end of FERC's jurisdiction, leaving states, which often have fewer regulatory authorities, and the public with the responsibility and burden of mitigating project impacts.

East Juliette Dam

In 1986 Eastern Hydroelectric Corporation received a license for the East Juliette Project, which includes East Juliette dam located on the Ocmulgee River.[312] The dam is the first fish passage barrier on the river and the highest priority for American shad habitat restoration in the region.[313]

In 1999 the licensee applied to amend its license to increase capacity at the project.[314] FERC conditioned the amended license to mitigate impacts to fish, including by requiring the

[307] *Id.*
[308] Notice of Inquiry, Financial Assurances Measures for Hydroelectric Projects, 86 Fed. Reg. 7081 at 7,083 (Jan. 26, 2021).
[309] *Id.*; Notice Inviting Technical Conference Comments, Docket No. RM21-9-000 (April 27, 2022).
[310] *See, e.g.*, *Iman Mills*, 153 FERC at 62,231; *Goose River Hydro, Inc.*, 183 FERC at 62,044
[311] Project Decommissioning at Relicensing, 60 Fed. Reg. at 341.
[312] *City of Forsyth, Georgia*, 34 FERC ¶ 62,438 (Feb. 28, 1986) (Order Issuing License (Minor)).
[313] *See, e.g.*, U.S. Fish and Wildlife Service, East Juliette Hydroelectric Project (FERC No. 7019), Eastern Hydroelectric Corporation, Ocmulgee River, Georgia, Accession No. 20071029-5076 (Oct. 29, 2007).
[314] *The E. Hydroelectric Corp.*, 99 FERC ¶ 62,207 (June 18, 2002) (Order Amending License Authorizing Increased Capacity).

construction of fish passage facilities. **The licensee upgraded the facility and commenced generating power but failed to construct the required fish passage facilities.**

After over 12 years of noncompliance, FERC issued an order proposing to revoke the project's license.[315] Resource agencies and NGOs expressed concern about the project's impacts on migratory fish and NGOs requested FERC require removal of project works as a condition of revocation.[316]

FERC revoked the license and declined to address decommissioning beyond disabling hydropower capacity, citing its policy to not condition license revocation when there is an already non-compliant licensee.[317] The dam remains on the landscape and continues to block fish passage.

Policy solutions:

- Adopt policy to require financial assurance measures as part of licensing to ensure ability to implement license conditions.
- Adopt policy outlining criteria for when FERC will require financial assurance measures for decommissioning costs. Criteria should include both project and licensee factors. Project factors may include profitability of project, estimated compliance costs, safety and dam age, and assessment of the likelihood of decommissioning, including dam removal. Licensee factors should assess the ability of the licensee to address project costs. The policy should be applicable at licensing and license transfer.
- Congress should establish a general fund for decommissioning and dam removal to cover costs that are not able to be allocated to the licensee. The fund could be capitalized by congressional appropriations and an annual fee assessed on licensed projects.

Barrier: Uncodified authority to order project retirement and dam removal.

The FPA's provisions related to project retirement have been largely unchanged since 1968 and do not provide FERC express authority to direct project retirement at relicensing, to direct removal of project works, or to require licensees to pay costs of decommissioning.[318] As a result, FERC relies on implied authority in the FPA to decline to issue a new license at relicensing and to condition a license surrender or revocation on specific decommissioning requirements with costs borne by the licensee.

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[315] *The E. Hydroelectric Corp.*, 148 FERC ¶ 61,208 (July 17, 2014) (Order Proposing Revocation of License).

[316] *The E. Hydroelectric Corp.*, 149 FERC at 61,036.

[317] *Id.*

[318] The FPA's relicensing provisions expressly provide only three outcomes of relicensing—federal takeover (where the government would operate the project) issuance of a nonpower license, or issuance of anew license. 16 U.S.C. § 808. The FPA's surrender provision requires the "mutual agreement of FERC" to surrender a license but does not further define FERC's authority to direct decommissioning. *Id.* § 799. Similarly, FERC's enforcement authority does not define the scope of FERC's authority to require removal of project works. *Id.* §§ 823b, 820. The FPA also does not directly address FERC's ability to require licensees to pay costs associated with decommissioning that is required by FERC.

FERC has rarely exercised its implied authority and the authority has largely not been judicially affirmed.[319] Its authority to impose conditions in relicensing that would make a project uneconomical and therefore act as a de facto license denial was challenged and sustained.[320] In that case, while not directly challenged, the court also considered and upheld FERC's authority to decline to issue a new license. The court did not reach the question of whether FERC could impose decommissioning costs on the licensee. The scope of FERC's authority to require dam removal as a condition of license surrender and in compliance actions has also not been affirmed.

While FERC's policies and practices related to relicensing and decommissioning are long standing, because they are not expressly granted in statute, they are vulnerable to legal challenge. Recent Supreme Court opinions have increased opportunity to challenge administrative actions and removed deference to agency interpretations of ambiguous statutes.[321]

The lack of express standards in the FPA also means FERC has more discretion in how it implements its authority. For example, while FERC has recognized general authority to require specific decommissioning, it has also stated that it will—and in practice has—only exercised the authority in rare circumstances. In addition, subject to some legal constraints,[322] FERC may revise its policies and practices with respect to how it oversees project decommissioning, including its authority to require dam removal. Further, the absence of clear standards in the FPA and FERC regulations limits advocate's ability to challenge FERC's failure to consider or require dam removal in FERC's administration of its regulatory authority.

Policy solutions:

- Amend FPA to expressly authorize FERC to order project retirement and decommissioning at relicensing.[323]
- Amend FPA to expressly authorize FERC to impose decommissioning conditions, including dam removal, in license surrenders and license revocations to address ongoing project impacts.[324]
- Amend regulations to authorize decommissioning conditions in orders terminating licenses by implied surrender.[325]

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[319] This may be in part because FERC has largely not exercised its authority. FERC declined to issue a new license in one instance, but removal ultimately occurred through a voluntary settlement agreement. *Edwards Mfg. Co.*, 81 FERC at 61,255. FERC twice imposed dam removal in compliance actions but both were based on prescriptions by other agencies. It subsequently removed the condition in one instance and the final disposition of the other case is unknown. *Larry Hensley Eugene Mark Souza*, 122 FERC at 62,201; *H.E.E.D. Co., Inc.*, 91 FERC at 62,063.

[320] *City of Tacoma, Wash. v. Federal Energy Regul. Comm'n*, 460 F.3d 53, 71-4 (D.C. Cir. 2006).

[321] *Loper Bright Enterprises v. Raimondo*, 603 U.S. ___, No. 22-451 (June 28, 2024); *Corner Post, Inc. v. Bd. of Governors of the Fed. Reserve Sys.*, 603 U.S. ___, No. 22-108 (July 1, 2024)

[322] *See, e.g.*, *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 42 (1983) (agencies must provide a reasoned explanation for modifying rules).

[323] 16 U.S.C. § 808.

[324] *Id.* §§ 799, 823b.

[325] 18 C.F.R. § 6.4.

- Amend FPA to expressly authorize FERC to impose decommissioning costs on the licensee.

Barrier: Approach to compliance violations incentivizes abandonment of noncompliant projects and obsolete dams.

FERC's approach to addressing compliance violations coupled with shifting project economics has created incentives for licensees to abandon projects. When FERC is unable to obtain a licensee's voluntary compliance with license conditions, FERC's typical practice is to cancel the license[326] without imposing decommissioning conditions other than retiring hydropower capacity.[327]

Further, the FPA prohibits FERC from imposing civil penalties where license revocations are also ordered.[328] FERC has used its implied surrender authority to terminate licenses following issuing penalties for compliance violations.[329]

In addition, in contrast to the license surrender process, in license revocations and terminations, FERC does not require the licensee to engage in consultation or provide a decommissioning plan and, typically, does not assess environmental impacts.[330] Indeed, in several cases, FERC has terminated a license when a licensee's surrender application was incomplete, including by not providing a decommissioning plan.[331]

The combined result of FERC's approach in license revocations and terminations is to create a pathway for licensees to give up their license—relieving them of often uneconomical projects—while also avoiding any decommissioning responsibility.

FERC has historically viewed the potential loss of a license as a deterrent to licensees against violating the terms of its license. However, this approach assumes hydropower projects—and therefore FERC licenses—generally continue to be valuable assets for licensees. Today, that is simply not always true, as demonstrated by both the number of abandoned projects—as of December 2020 estimated at 88[332]—and hydropower projects considering decommissioning—based on a 2022 survey, 36% of hydropower projects.[333] When a project has become uneconomical, the loss of a license without additional costs may benefit the licensee,

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[326] Depending on the violation, the compliance action may be a license revocation, termination by implied surrender, or termination.
[327] *See, e.g.*, *Va. Hydrogeneration and Historical Soc'y*, 142 FERC at 62,212; *but see*, *Star Mill, Inc.*, 128 FERC at 62,164 (requiring licensee to file a plan to address safety issues).
[328] 16 U.S.C. § 823b(c) ("No civil penalty shall be assessed where revocation is ordered.").
[329] *See Boyce Hydro Power, LLC*, 175 FERC ¶ 61,049 (April 15, 2021) (Order Issuing Civil Penalties); *Boyce Hydro Power, LLC*, 175 FERC ¶ 61,143 (May 20, 2021) (Order Terminating Licenses By Implied Surrender).
[330] *See, e.g.*, *Goose River Hydro, Inc.*, 183 FERC at 62,044; *Iman Mills*, 153 FERC at 62,231.
[331] *Daniel Nelson Evans, Jr.*, 147 FERC ¶ 62,052 (April 21, 2014) (Order Terminating License By Implied Surrender) (terminated license after licensee failed to provide decommissioning plan in surrender application); *PB Energy, Inc.*, 181 FERC ¶ 62,127 (Nov. 30, 2022) (Order Terminating License By Implied Surrender).
[332] Financial Assurance Measures for Hydroelectric Projects, 86 Fed. Reg. 7081, 7083 (Jan. 26, 2021).
[333] Ear to the River, *supra* note 256 at 20-1.

particularly when it relieves the licensee of existing or future compliance obligations that it may face under a FERC license.

Riverdale Hydroelectric Project

FERC licensed the Riverdale Project, including a concrete dam located on the Enoree River in South Carolina, in 1982.[334] The project license expired in 2012 and operated under an annual license until the licensee submitted a surrender application in 2015.[335]

The surrender application did not comply with consultation requirements or provide information about proposed decommissioning. Following continued non-compliance, FERC issued a public notice of its intent to terminate the license by implied surrender.

In response, state and federal agencies identified concerns about impacts to migratory fish if the project works were not properly decommissioned.[336] **The U.S. Fish and Wildlife Service noted that, "even as the Project is not operational, the development alters aquatic habitats, regulates and augments natural flow regimes, mediates sediment transport, and has the potential to alter water chemistry depending on the proposed disposition."**[337] Resource agencies requested FERC require a decommissioning plan and consultation with resource agencies and stakeholders prior to terminating the license.

FERC dismissed the agencies' concerns, noting that implied surrender was merely an administrative action that removed FERC's jurisdiction, so would not have environmental impacts. Further, based on the licensee's history of noncompliance it was in the public interest to terminate the license. FERC terminated the license by implied surrender without decommissioning conditions.[338]

The impact of FERC's current approach to license revocations and terminations was recently demonstrated when a licensee affirmatively requested that FERC terminate its license by implied surrender in lieu of imposing monetary penalties—preferring to lose its license than to continue to maintain the project.

[334] *Inman Mills*, 20 FERC ¶ 62,586 (Sept. 29, 1982) (Order Issuing License (Minor)).
[335] Application of Inman Mills to Surrender License, Project No. 4362-006, Accession No. 20150203-5120 (Feb. 3, 2015).
[336] *See, e.g.*, South Carolina Department of Natural Resources, Comments Regarding Notice of Termination of License by Implied Surrender, Inman Mills, Riverdale Hydroelectric Project, FERC No. 4362-007, Accession No. 20150515-5219 (May 15, 2015).
[337] U.S. Fish and Wildlife Service, Comments on Notice of Termination of License (Minor Project) by Implied Surrender, Riverdale Hydroelectric Project (FERC No. 4362-007); Spartanburg and Laurens Counties, South Carolina, FWS Log. No 2015-CPA-0072, Accession No. 20150423-5017 (April 23, 2015).
[338] *Inman Mills*, 153 FERC at 62,231.

Cranberry Lake Hydroelectric Project
In 2021 FERC issued a notice of intent to impose a civil penalty on Ampersand Cranberry Lake Hydro, LLC, for failing to maintain possession of project works, as required by its license, when the licensee lost its lease with the dam owner.[339] **The licensee responded to the notice, asking FERC to terminate its license by implied surrender, preferring to lose its license then pay a penalty.**[340] In support of its argument, the licensee cited numerous cases where FERC had addressed noncompliance by terminating the license without imposing monetary penalties.

FERC distinguished its prior cases and declined to terminate the license, noting that doing so would reward a licensee that had intentionally violated the terms of its license by relieving it from the license obligations it was seeking to avoid.[341] Instead, the Commission imposed a $600,000 penalty on the licensee. The licensee subsequently filed an application to surrender its license, which was approved by FERC.[342]

Policy solutions:

- Amend FPA to authorize monetary penalties as part of license revocation.[343]
- Amend regulations to require consultation with jurisdictional agencies and stakeholders as part of compliance actions.
- Revise policy to provide public notice of and allow intervention in license terminations.[344]

Barrier: Transfer practices allow licensees to avoid liability and impede dam removal.

The transfer of a hydropower license to a new licensee is playing an increasingly determinative role in whether dams are removed.[345] In one respect, license transfers are being used as a mechanism to avoid liability associated with marginally economical projects. In another respect, license transfers are being used as a mechanism to facilitate dam removal.

A growing number of licensees are looking for pathways to divest uneconomical projects—and often already nonoperational projects—while limiting their liability for potential

[339] *Ampersand Cranberry Lake Hydro, LLC*, 177 FERC ¶ 61,028 (Oct. 21, 2021) (Order to Show Cause and Notice of Proposed Penalty).
[340] Ampersand Cranberry Lake Hydro Response to Order to Show Cause and Notice of Proposed Penalty, Accession No. 20211122-5166, 7-11 (Nov. 11, 2021) (The licensee made several additional arguments against a monetary penalty.).
[341] *Ampersand Cranberry Lake Hydro, LLC*, 179 FERC ¶ 61,037 (April 21, 2022) (Order Assessing Penalty).
[342] Notice of Application for Surrender of License, 88 Fed. Reg. 7719 (Feb. 6, 2023); *Ampersand Cranberry Lake Hydro, LLC*, 185 FERC ¶ 62,031 (Oct. 20, 2023) (Order Approving Surrender of License and Granting Request for Waiver).
[343] 16 U.S.C. § 823b(c) ("No civil penalty shall be assessed where revocation is ordered.").
[344] *Pub. Util. Dist. No. 1 of Okanogan Cnty, Wash.*, 144 FERC at 61,183 (describing FERC's practice with respect to public notice and intervention in license terminations).
[345] A licensee may transfer a license only with approval from FERC. 18 C.F.R. Part 9. In reviewing an application to transfer a license, FERC ensures the licensee it qualified to hold the license and that the transfer is in the public interest. *See* Compliance Handbooks, *supra* note 95 at 36.

decommissioning costs. The transfer of a license to another entity presents one option for licensees. Under this pathway, the project licensee sells the project to another company who then takes over the license, relieving the original licensee of liability for the project. However, in some cases, the transferee is speculating on the project and is undercapitalized and lacks the resources to operate and maintain the project.

Predictably, when these entities take on marginally economical or even uneconomical projects, they are often unable to make the project financially viable and seek to divest themselves of the project. In some cases, the new licensees have simply abandoned the project, leaving FERC to revoke the license.[346] As FERC's practice is to not require mitigation or removal as part of compliance actions, states and local communities are left to address impacts from the obsolete project infrastructure. This has resulted in both safety concerns and environmental damage from dams that remain on the landscape.

While FERC has recognized potential abuses of the transfer process, it has generally failed to sufficiently analyze or condition transfers to protect against speculation and ensure that a new licensee will have the financial means to maintain the project, comply with license conditions, and, if needed, pay decommissioning costs.[347] Exempt projects do not require FERC approval to be transferred, providing even greater opportunity for an exemptee to divest themselves of uneconomical projects.[348]

Herkimer Hydroelectric Project

The Herkimer Hydroelectric Project, located on West Canada Creek in New York, has been inoperable since 2006. In 2014 the licensee requested permission to transfer the project.[349] FERC requested information about the transferee's financial capacity to repair the project[350] and subsequently approved the transfer with the condition that the new licensee file a plan to complete project repairs within 60 days.[351]

[346] *Pinedale Power and Light*, 38 FERC at 61,036; *Kevin Drone*, 153 FERC ¶ 61,199 (Nov. 19, 2015) (Order Terminating Exemption by Implied Surrender); *Brentwood Dam Ventures*, LLC, 158 FERC ¶ 61,037 (Order Exemption Terminating Exemption by Implied Surrender); *Congdon Pond Hydro*, 154 FERC ¶ 61,209 (March 17, 2016) (Order Terminating Exemption by Implied Surrender); *Michael Donahue*, 139 FERC ¶ 62,060 (April 23, 2012) (Order Terminating Exemption by Implied Surrender); *Penny and David S. Percival*, 150 FERC ¶ 62,069 (Jan. 28, 2015) (Order Terminating Exemption by Implied Surrender); *L.E. Bell Construction Co.*, 144 FERC ¶ 62,095 (Aug. 1, 2013) (Order Terminating Exemption by Implied Surrender); *Willow Creek Hydro*, 155 FERC ¶ 61,057 (April 21, 2016) (Order Terminating License by Implied Surrender).

[347] *See, e.g.*, *Star Mill Inc.*, 112 FERC ¶ 62,131 at 64,294 (2005) (Order Approving Transfer of License); *but see Trafalgar Power, Inc. and ECOsponsible, LLC*, 150 FERC ¶ 62,144 (March 12, 2015) (Order Approving Transfer of License) (requesting finical assurances of transferee to repair project).

[348] 18 C.F.R. § 4.106(i) (exemption holders must inform FERC of new exemption holder within 30 days of the transfer).

[349] *Trafalgar Power, Inc. and ECOsponsible, LLC*, 150 FERC at 62,144.

[350] Federal Energy Regulatory Commission, Additional Information Request on Application for Approval of Transfer of License, ECOsponsible, Inc., Accession No. 20141121-3027 (Nov. 21, 2014).

[351] *Trafalgar Power, Inc. and ECOsponsible, LLC*, 150 FERC at 62,144.

The new licensee did not complete required repairs and in 2021 FERC issued a notice of intent to terminate the license by implied surrender.[352] The New York State Department of Environmental Conservation provided comments that the project was a barrier to aquatic species and had no fish passage facilities and recommended dam removal. At a minimum, NYSDEC urged FERC to condition termination to address continuing resource impacts and ensure the safety of the project following termination.[353] The NYSDEC also requested that FERC impose a financial penalty on the licensee for failing to operate the project to protect public safety. **The agency commented, "implied surrender should by no means vacate the current licensee's responsibility to property and facility ownership, including liability for protection of the [area's] natural resources."**[354]

The licensee subsequently requested additional time to determine its next steps for the project and in 2022 filed a notice of intent to apply for a subsequent license, which FERC rejected.[355] In 2024 FERC filed a notice soliciting interest in applications for a new license.[356]

In other cases, transfers have been used to facilitate removal. In these cases, the licensee transfers the project to another entity who surrenders the license and decommissions the dam.[357] This approach relieves the dam owner of the responsibility of managing removal of the project, including in some cases the cost and liability of removal, while allowing the entity acquiring the project to achieve its restoration goals.

Grist Mill Dam

The exempt Grist Mill Dam, located at the head-of-tide on the Souadabscook Stream in Maine, was the first passage barrier to migratory fish.[358] The project became in disrepair in the 1990s and was subject to compliance actions, including to address a nonoperational fishway.[359]

[352] ECOsponsible, LLC; Notice of Termination of License by Implied Surender and Soliciting Comments, Protests, and Motions to Intervene, 84 Fed. Reg. 64197 (Nov. 17, 2021).
[353] Herkimer Hydroelectric Project—ECOsponsible, LLC, FERC # P-9709-070, Accession No. 20211227-5214 (Dec. 27, 2021).
[354] *Id.* at 3; *see also* Rick Karlin, Herkimer dam owners will need to repair or sell dormant hydrofacility, Times Union (March 1, 2022), https://www.timesunion.com/news/article/Herkimer-dam-owners-will-need-to-repair-or-sell-16960845.php (last visited June 24, 2024).
[355] Motion to Intervene and Protest of ECOsponsible, LLC, FERC Project No. 9707-070, Accession No. 20211227-5206 (Dec. 27, 2021); Notice of Intent to File Application for Relicense Request to Use the Traditional Licensing Process Pre-Application Document for Herkimer Hydroelectric Project (FERC P-9709), ECOsponsible, LLC (March 31, 2022).
[356] Soliciting Notices of Intent to File a New License Application and Pre-Application Documents, Project No. 9707-071 (April 3, 2024).
[357] *See, e.g.*, *Ray F. Ward*, 162 FERC at 62,061.
[358] *Lawrence A. Gamble*, 19 FERC ¶ 62,340 (May 25, 1982) (Order Granting Exemption from Licensing of a Small Hydroelectric Project of 5 Megawatts or Less); *Maine Energy Partners*, 79 FERC ¶ 61,229 (May 22, 1997) (Order Approving Stipulation and Consent Agreement).
[359] *Maine Energy Partners*, 79 FERC at 61,229.

Following a series of transfers,[360] the exemptee reached an agreement with Facilitators Improving Salmonid Habitat (FISH), an NGO focused on salmon restoration, to transfer the project to FISH, which would then apply to surrender the project and remove the dam.[361] FERC approved the transfer and exemption surrender,[362] and the dam was removed restoring access to important cold-water refuge for Atlantic anadromous fish.

Smelt Hill Dam

The Smelt Hill Dam was the first fish passage barrier on the Presumpscot River and a priority for removal to restore anadromous fish. In 2002 the State of Maine purchased the project for the purpose of surrendering and removing the dam.[363] That same year, the State filed an application to surrender the exemption and remove the dam, which FERC approved.[364] FERC did not condition the surrender on removal but said it would be up to the State to determine how to dispose of the project. The U.S. Army Corps of Engineers and the State funded removal, which was complete in 2002.

Veazie and Great Works Dams

In 1999 the Penobscot Power and Light Corporation purchased nine hydropower dams on the Penobscot River.[365] Faced with the complexity and expense associated with relicensing each individual project, the dam owner entered discussions with the Penobscot Indian Nation and other stakeholders agree on how to address resource impacts and other issues related to the projects.

In 2004 the parties entered into a settlement agreement, through which the licensee agreed to transfer its license for three dams—the Veazie, Great Works, and Howland Dams—to the Penobscot River Restoration Trust, which would then surrender the licenses and remove the Veazie and Great Works dams and modify the Howland dam to allow fish passage.[366] In 2009 FERC approved the proposed transfers[367] and in 2010 approved the license surrender and

[360] *See Facilitators Improving Salmonid Habitat (FISH)*, 84 FERC ¶ 61,196 (Aug. 27, 1998) (Order on Surrender of Exemption and Amendment of Stipulation and Consent Agreement).
[361] John Jones, Letter RE: Grist Mill Project, FERC #4727-ME, Stipulation & Consent Agreement, Accession No. 19971030-005 (Oct. 23, 1997).
[362] *Facilitators Improving Salmonid Habitat (FISH)*, 84 FERC at 61,196.
[363] Unlike the transfer of licenses, which require FERC approval, exemptees are only required to provide notice to FERC of the transfer of exemption. 18 C.F.R. § 4.106(i).
[364] Maine Department of Marine Resources, Application for Surrender of Exemption and Removal of Dam Smelt Hill Hydroelectric Project, FERC 7118-007, Accession No. 20010917-0142 (Sept. 7, 2001); *State of Maine Department of Marine Resources*, 100 FERC ¶ 62,013 (July 5, 2002) (Order Accepting Surrender of Exemption).
[365] Great Works Hydro P-2312, Hydropower Reform Coalition, https://hydroreform.org/hydro-project/great-works-hydro-p-2312/ (last visited June 24, 2024).
[366] Lower Penobscot Settlement Multiparty Settlement Agreement (June 2004).
[367] *PPL Maine, LLC*, 126 FERC ¶ 62,005 (Jan. 6, 2009) (Order Approving Transfer of License); *PPL Great Works, LLC, Penobscot River Restoration Trust*, 126 FERC ¶ 62,004 (Jan. 6, 2009) (Order Approving Transfer of License).

proposed decommissioning plan, which included dam removal.[368] By 2013, both dams were removed restoring over 1,000 miles of aquatic habitat.[369]

While these processes have resulted in successful removals, in other cases, FERC has denied or imposed additional funding and capacity requirements on transfers, expressing concern that transferees without experience managing a hydropower project may lack the "legal, technical and financial capacity to safely remove project facilities and adequately restore project lands."[370]

Hogansburg Dam

In 2010 the Hogansburg Hydroelectricity Project, which includes the Hogansburg Dam on the St. Regis River, entered relicensing.[371] As part of the relicensing process, the licensee determined that the cost to comply with additional water quality and fish passage conditions would make the project uneconomical.

In 2013 the licensee entered into a settlement agreement with the Saint Regis Mohawk Tribe to transfer the project to the Tribe, which would surrender the license and remove the dam. The Tribe filed an application to transfer and surrender the project license,[372] but FERC denied the application, finding that the application did not demonstrate that transferring the license was in the public interest because the Tribe did not have prior experience either operating or decommissioning a hydroelectric facility.[373] In addition, FERC found that despite the Tribe attesting to the financial means to remove the dam, it had not provided evidence of its financial standing.[374] The Tribe subsequently applied to be a co-licensee with the existing licensee[375] and filed an application to surrender the license, which FERC approved.[376]

[368] *Penobscot River Restoration Trust*, 131 FERC ¶ 62,219 (Dec. 7, 2010) (Order Approving Lease of Project Property and Operating and Maintenance Agreement).
[369] Presumpscot River Aquatic Habitat Restoration Project Smelt Hill Dam Removal, Project Information Sheet, U.S. Army Corps of Engineers (Oct. 5, 2003), available at https://www.nae.usace.army.mil/portals/74/docs/topics/presumpscot/factsheet.pdf.
[370] *Erie Boulevard Hydropower, L.P, Saint Regis Mohawk Tribe*, 155 FERC ¶ 62,243 (June 23, 2016).
[371] *Niagara Mohawk Power Corp.*, 33 FERC ¶ 62,110 (Oct. 25, 1985) (Order Issuing License (Minor)).
[372] Hogansburg Hydroelectric Project FERC # 7518, The Saint Regis Mohawk Tribe's Applications for Transfer and Surrender of the License and Decommissioning and Removal of the Dam, Accession No. 20131127-5251 (Nov. 13, 2013).
[373] *Erie Boulevard Hydropower, L.P. Sain Regis Mohawk Tribe*, 155 FERC at 62,243.
[374] *Id.*
[375] *Erie Boulevard Hydropower, L.P. Saint Regis Mohawk Tribe*, 150 FERC ¶ 62,149 (March 13, 2015) (Order Approving Partial Transfer of License).
[376] *Erie Boulevard Hydropower, L.P. Sain Regis Mohawk Tribe*, 155 FERC at 62,243.

Removed in 2016, the Hogansburg dam was the first dam removed in New York State and the first removed by a federally recognized Tribe.[377] Its removal restored 555 miles of river and stream habitat.

Klamath Hydroelectric Project

The Klamath Hydroelectric Project consists of eight developments, each with a dam and associated reservoir.[378] In 2016 the licensee, PacifiCorp, signed a settlement agreement with the states of Oregon and California, the Yurok and Karuk Tribes, and the Department of Interior to transfer the four lower developments to the Klamath River Renewal Corporation (KRRC), which would then surrender the project and remove project works, including four dams.

In 2016 the licensee and transferee filed an application to amend the Klamath Project license to remove the four developments and transfer the projects to KRRC.[379] FERC requested additional information from KRRC regarding its technical capacity and financial liquidity to manage the decommissioning process. In response, KRRC provided detailed information about its cost estimates, risk assessment, technical capacity, and finances, which exceeded the estimated cost of removal with a significant contingency buffer. Despite these assurances, FERC declined to approve the transfer application as proposed, noting concerns about the "magnitude of the proposed decommissioning," and required the licensee to remain as co-licensee to provide legal, technical, and financial support as needed.[380]

In 2021 Oregon and California joined KRRC as co-licensees on a new transfer application, which FERC ultimately approved.[381] In 2022 FERC approved the licensees' surrender application.[382] Removal of the four dams was completed in August 2024, marking the largest dam removal project completed in the United States.

Policy solutions:

- Develop financial assurances policy for license and exemption transfers.[383] Criteria should consider current noncompliance, outstanding and anticipated maintenance, and likelihood of decommissioning.
- Amend regulations to require approval to transfer an exemption.[384]

[377] Hogansburg Dam Removal, Saint Regis Mohawk Tribe, https://www.srmt-nsn.gov/environment/hogansburg-dam-removal (June 24, 2024).
[378] *See PacifiCorp, d.b.a. Pacific Power & Light Company and PC/UP&L Merging Corp.*, 45 FERC ¶ 62,146 (Nov. 23, 1988) (Order Approving Transfer of License).
[379] *See PacifiCorp Klamath River Renewal Corp.*, 175 FERC ¶ 61,236 (June 17, 2021) (Order Approving Transfer of License).
[380] *PacifiCorp Klamath River Renewal Corp.*, 172 FERC ¶ 61,062 (July 16, 2020) (Partial Transfer Order).
[381] *PacifiCorp Klamath River Renewal Corp.*, 175 FERC at 61,236.
[382] *PacifiCorp Klamath River Renewal Corporation*, 181 FERC ¶ 61,122 (Nov. 17, 2022) (Order Modifying and Approving Surrender of License and Removal of Project Facilities).
[383] 18 C.F.R. § 131.20 sets out the application requirements for a transfer.
[384] 18 C.F.R. § 4.106(i) sets out transfer requirements for an exemption.

- Develop guidance on how FERC will assess a license transfer for purposes of license surrender and decommissioning.

Barrier: Perpetual licenses for exempt projects.

The FPA gives FERC discretion to exempt small capacity hydropower projects "in whole or in part" from the FPA's licensing requirements.[385] In applying this authority, FERC exempts projects from relicensing requirements and issues projects perpetual authorization to operate. While FERC includes a standard reopener article in exemptions that authorizes modifications to address changed conditions, FERC has generally declined to exercise this authority.[386]

Although exempt projects often have less resource impacts than licensed projects, the size and location of the project does not always equate with reduced impacts. The lack of a formal process to reassess exempt projects removes a key opportunity to reevaluate whether the project continues to be in the public interest and to condition projects to mitigate impacts. As of 2024, FERC identified just over 600 small capacity hydropower projects with active exemptions.[387]

Odell Creek Hydroelectric Project

In 2010 the state water rights permit for the Odell Creek Hydroelectric Project, located on the Hood River in Oregon, expired.[388] As part of the issuance of a new water right permit, the state required the installation of fish passage at the dam. **The exemptee determined the cost to install fish passage would make the project uneconomical and elected to surrender its exemption and decommission the project.** In coordination with state agencies, the exemptee proposed to remove the project dam. Because the project operated under an exemption, there was no formal FERC process to reassess and mitigate project impacts.

Policy solution:

- Amend regulations to require periodic reassessment of exempt small capacity hydropower projects.

[385] 16 U.S.C. § 2705(d); 18 C.F.R. § 4.30 (defining small hydroelectric projects as under 10 megawatts and located at existing dams or that rely on the natural flow of a river). The FPA also allows FERC to exempt small conduit projects. 16 U.S.C. § 823a.

[386] 18 C.F.R. § 4.160(f) (Authorizing FERC to require modifications or revoke the exemption "in order to best develop, conserve, and utilize in the public interest the water resources of the region."). *See Cal. Sportfishing Protection Alliance*, 472 F.3d 593 (9th Cir. 2006) (declining to reopen a license after an ESA listing).

[387] Licenses, Federal Energy Regulatory Commission, https://www.ferc.gov/sites/default/files/2020-06/exemptions.xls (last visited June 24, 2024).

[388] *James and Sharon Jans*, 156 FERC ¶ 62,019 (July 7, 2016) (Order Accepting Surrender of Exemption).

Barrier: Settlement policy requiring close nexus between mitigation measures and project impacts and boundaries hampers use of settlement agreements to advance dam removals.

Settlement agreements provide opportunity for licensees and stakeholders to collaboratively resolve licensing issues and have been a factor in most removals of FERC-regulated dams. While FERC's policy is to support settlement agreements, FERC's requirement that mitigation measures have a close nexus to project impacts and boundaries creates obstacles to the use of settlement agreements to advance dam removals.

FERC's settlement policy requires mitigation activities to be directly tied to project effects and purposes and prefers that proposed actions be within the vicinity of the project.[389] A policy requiring such a close nexus between mitigation actions and the project is not mandated by the FPA or NEPA and unnecessarily restricts the range of mitigation measures in settlement agreements that can be adopted as enforceable license provisions. The ability of parties to consider mitigation actions outside the project boundary has allowed parties to prioritize activities that provide the greatest benefit to the impacted natural resources. An approach that limits the range of mitigation measures can hinder creative solutions that result in the removal of dams that are a high priority for restoration.

While provisions that are not integrated as license conditions are still enforceable between parties as off-license provisions, FERC does not give them weight in its licensing decisions.[390] This approach can allow FERC to make licensing decisions that are inconsistent with or frustrate the intent of settlement parties.

Sturgeon Dam

In 1997 the Wisconsin Power and Electric Company entered into a settlement agreement to address resource issues related to fisheries, water quality, recreation, and land management for nine of its projects on the Menominee River Basin in Wisconsin with expiring licenses.[391] The settlement would form the basis for proposed licensing conditions in the project's relicensing.

To mitigate resource impacts related to the projects proposed for relicensing, the licensee agreed to remove two FERC-regulated dams—the Sturgeon and Pine River dams—and the state-regulated Woods Creek dam. These dams would mitigate project impacts by supporting broader watershed restoration but do so at a reduced cost and would not impact the viability of the projects proposed for relicensing by reducing potential power production.

In 2001 the licensee applied to surrender its license for the Sturgeon Project and proposed to draw down the reservoir and remove the dam over a five-year period, during which time the

[389] Policy Statement on Hydropower Licensing Settlements, *supra* note 244 at 7.
[390] *Id.* at 7, 11.
[391] Wilderness Shores Settlement Agreement (Feb. 10, 1997).

project would continue to generate power.[392] FERC approved the surrender[393] and the dam was removed in 2007.

The agreement provided for the removal of the Pine River Dam, located on the Pine River a state-designated Wild River, at the expiration of the license in 2025, if federal and state resource agencies remained in support of removal. However, in 2020 the licensee requested that FERC extend the license term for the Pine River Project until 2040 to coordinate the license expiration with other projects in the basin.[394]

Federal and state agencies and NGOs filed comments in opposition to the extension, noting that it was contrary to the settlement agreement and restoration efforts in the watershed and urged FERC to deny the license extension.[395]

Despite being inconsistent with the settlement agreement, FERC granted the license extension noting that the settlement agreement had not been filed with FERC or incorporated into FERC license conditions, as a result, FERC was not bound by the settlement's terms.[396] In addition, FERC found the license extension consistent with its practice to coordinate license expiration dates to support consideration of cumulative impacts in relicensing.[397]

In dissenting to the license extension, Chairman Richard Glick noted, "I see no reason why we should exercise our equitable discretion to extend the license of the Pine Project by 15 years when doing so would let Wisconsin Electric out of the spirit of its commitments in the [settlement agreement] and adversely affect the public interest considerations that the resource agencies are charged with protecting."[398]

Policy solution:

- Update policy for hydropower settlements to (1) broaden scope of mitigation measures FERC will accept as license conditions and (2) authorize reference to non-enforceable settlement provisions in licenses to memorialize settlement parties' intent and facilitate consideration of non-enforceable provisions in licensing decisions.

[392] *Wis. Elec. Power Co.*, 94 FERC ¶ 61,038 (Jan 12, 2001) (Order on Offer of Settlement and Notice of Intent to Issue and Grant Surrender of Nonpower License).
[393] *Wis. Elec. Power Co.*, 96 FERC ¶ 61,009 (July 2, 2001) (Order Issuing Nonpower License and Approving Decommissioning Plan). This case involved a project operating under a minor license, which is not eligible to receive an annual license. As a result, the project was operating under an expired license and FERC elected to issue a nonpower license for the five-year period when the project would be winding down operations.
[394] Application for Non-Capacity Related Amendment of License Term, Wisconsin Electric Power Co., Project No. 2486, Accession No. 20190716-5084 (July 31, 2019).
[395] *See, e.g.*, Michigan Department of Natural Resources, Comments Regarding Notice of Applications Accepted for Filing, Soliciting Comments, Protests, and Motions to Intervene Posted BY the Commission on October 4, 2018 Regrading Project Nos. Project Nos. P-2536-093, P2730-067, P-11402-076, and P-2486-087, Accession No. 20191101-5002 (Oct. 31, 2019).
[396] *Wis. Elec. Power Co.*, 173 FERC ¶ 61,162 (Nov. 19, 2020) (Order Granting Extension of License Term).
[397] *Id.* at 62,163.
[398] *Id.* at 62,164.

Conclusion

A suite of cascading challenges amplified by climate change are highlighting the need to modernize dam management. These challenges include restoring ecosystems, addressing safety risks posed by more intense precipitation events, protecting community water supplies, transitioning away from fossil fuel energy sources, and adapting to aridification and more severe drought.

Responding to this need, several recent efforts are focused on improving dam management through investments in dam upgrades, repair, and removal,[399] and reforms to the FPA's regulatory framework.[400] This report adds to these efforts by examining how FERC's current regulation of hydropower projects creates obstacles to dam removal and identifying policy solutions. Removing regulatory barriers is critical to leveraging future opportunities in FERC's regulatory processes to assess whether dams continue to be the best use of public waters.

Looking ahead, a significant number of FERC-licensed projects are expected to enter regulatory processes—key among them relicensing, license surrender, and compliance actions—through which there will be opportunities to advance dam removal. Over half of licensed projects will enter relicensing between 2018 and 2037.[401] Further, a survey of hydropower owners found that 36.4% are actively considering decommissioning a project.[402] Reasons for decommissioning included: economics[403] (100% of owners), environmental considerations (62.5% of owners), and dam safety (37.5% of owners). Finally, FERC has identified over 80 hydropower projects that are nonoperational, either due to required maintenance or having been abandoned.[404] These projects may be subject to FERC's authority to terminate the project license.

How FERC addresses decommissioning in these processes will have a significant impact on whether and how dams are maintained or removed. This report's background and recommendations are intended to support efforts to capitalize on the unique opportunities in FERC's regulation of hydropower projects to assess whether dam removal is the appropriate management option and, when it is in the public interest, to enable the removal of dams.

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[399] Infrastructure Investments jobs Act, Pub. L. No. 117-58 (Nov. 15, 2021) (Sections 40804, 40901, and Division J include funding that could support dam removal).

[400] A Stanford University-led collaborative effort has developed policy recommendations to modernize the FPA Uncommon Dialogue, Hydropower, River Restoration, and Public Safety, Stanford Woods Institute for the Environment, https://woods.stanford.edu/research/hydropower-home (last visited June 20, 2024).
The resulting Twenty-First Century Dams Act would have established a federal framework to improve dam infrastructure and increase dam removal through assessments of existing infrastructure, prioritization of dams for removal, funding, and capacity support. Twenty-First Century Dams Act, S.2356, 117th Cong. (2021).

[401] *See* Taylor L. Curtis and Heather Buchanan, *supra* note 292 at 9.

[402] Ear to the River, *supra* note 256 at 20-1.

[403] The cost to maintain and upgrade the facility to meet regulatory requirements would exceed the value of the energy output.

[404] Financial Assurance Measures for Hydroelectric Projects, 86 Fed. Reg. at 7083.

Appendix A: Dams Removed While Under Federal Energy Regulatory Commission Jurisdiction[1]

Dam Name	Order	Year	# Dams Removed	Order Type	Relicen-sing	Settle-ment	Reason
Lewiston Dam, Clearwater River, ID	48 FPC ¶ 1,134 (1972)	1973		Voluntary Surrender			Construction of new project downstream
Fort Edward Dam, Hudson River Project Hudson River, NY	49 FPC ¶ 1,352 (1973)	1973		License Amendment			Safety (concern about dam failure)
Columbia Falls Dam, Columbia Falls Project, Pleasant River, MN	See 46 FERC ¶ 62,055 (1989)	1988		Voluntary Surrender (Exemption)	X	X	Purchased and removed as mitigation for fish passage conditions at another project.
Mussers Dam, Mussers Dam Project, Middle Creek, PA	64 FERC ¶ 62,097 (1993)	1993		Voluntary Surrender			Expense to repair dam to address safety concerns.
Newport Dam No. 11, Clyde River Hydroelectric Project, Clyde River, VA	July 26, 1996 letter; 105 FERC ¶ 62,119 (2003)	1996		Letter approving project and New License	X		Removed after breach in lieu of rebuilding.
Grist Mill Dam, Grist Mill Project, Souadabscook Stream, MA	84 FERC ¶ 61,196 (1998)	1998		Voluntary Surrender (Exemption)			Removed to remediate fish passage barrier.
Edwards Dam, Edwards Hydroelectric Project, Kennebec, MA	81 FERC ¶ 61,255 (1997)	1999		Order Denying New License and Requiring Dam Removal	X	X	Removed to remediate fisheries impacts.
Smelt Hill Dam, Smelt Hill Hydroelectric Project,	100 FERC ¶ 62,013 (2002)	2002		Voluntary Surrender (Exemption)			Project damaged in flood and then sold to state to surrender license and remove dam.

[1] This table identifies dams removed as of August 2024 as part of approved decommissioning at the surrender or termination of a FERC license or exemption. In several cases, parties have developed agreements to remove dams following license surrender but did not propose removal as part of decommissioning. These dams are not included in the table, but include City Mills Dam and Eagle and Phenix Dam (*Eagle and Phenix Hydro Co., Inc., UPtown Columbus, Inc.*, 135 FERC ¶ 62,201 (June 8, 2011) (Order Accepting Surrender of License and Exemption), Steele Mill Dam (97 FERC ¶ 62,048 (2001)), Mill Town Dam (*Clark Fork and Blackfoot, LLC*, 111 FERC ¶ 61,160 (May 6, 2005) (Order on Rehearing)), Harvell Dam (*Va. Hydrogeneration and Historical Soc'y, Inc.*, 142 FERC ¶ 62,212 (March 14, 2013) (Order Terminating License By Implied Surrender)), and Milburnie Dam (*Milburnie Hydro, Inc.*, 142 FERC ¶ 62,041 (Jan. 16, 2013) (Order Terminating Exemption By Implied Surrender)).

Dam Name	Order	Year	# Dams Removed	Order Type	Relicen-sing	Settle-ment	Reason
Presumpscot, MA							
East & West Panther Dams, Mokelumne River Project, Mokelumne River, CA	97 FERC ¶ 61,031 (2001)	2003	2	License Amendment	X	X	As part of relicensing settlement, removed to provide environmental mitigation for other developments in project.
Stronach Dam, Tippy Hydroelectric Project, Pine River, MI	74 FERC ¶ 62,147 (1996)	2003		License Amendment	X	X	Removed as part of comprehensive relicensing settlements for 11 projects to provide environmental mitigation.
Rock Creek Dam, Rock Creek Hydroelectric Project, Rock Creek, OR	104 FERC ¶ 62,153 (2001)	2003		Voluntary Surrender	X		Expense to remediate safety and fish passage concerns.
Marquette City Dam, Marquette Project, Dead River, MI	101 FERC ¶ 62,014 (2002); 106 FERC ¶ 62,175 (2004)	2004		License Amendment	X		Partially breached structure. Removal will improve habitat.
Coxlake Dam, Carbonton Hydroelectric Project, Deep River, NC	113 FERC ¶ 62,004 (2005)	2005		Voluntary Surrender (Minor Licensee)			Uneconomical project removed for ecological benefits as part of state mitigation credit program.
Sturgeon Dam, Sturgeon Hydroelectric Project, Sturgeon River, WI	96 FERC ¶ 61,009 (2001); 119 FERC ¶ 62,181	2005		Nonpower License and Surrender	X	X	Yes, mitigation of resources impacts for relicensing of eight other projects in Upper Menominee River Basin owned by licensee.
Cove Dam, Bear River Project, Bear River, ID	115 FERC ¶ 62,205 (2006)	2006		License Amendment	X	X	Low value dam removed to improve ecological conditions in exchange for increased capacity at another project dam.
Sandy River Dam, Sandy River Hydroelectric Project, ME	115 FERC ¶ 62,113 (2006)	2006		Voluntary Surrender (Minor License)		X	Fishway conditions in new license were too costly and elected to surrender license and removed dam.
American Fork Hydropower Project, American Fork Creek, UT	108 FERC ¶ 61,130 (2004)	2007 /		Voluntary Surrender	X	X	Removed in lieu of relicensing due to cost of environmental mitigation conditions.

Dam Name	Order	Year	# Dams Removed	Order Type	Relicen-sing	Settle-ment	Reason
Little Sandy Dam & Marmot Dam, Bull Run Project, Sandy River, OR	107 FERC ¶ 61,158 (2004)	2007 / 2008	2	Voluntary Surrender	X	X	Removed in lieu of relicensing due to cost of environmental mitigation conditions.
Fossil Creek Dam, Childs-Irving Hydroelectric Project, Fossil Creek, AZ	109 FERC ¶ 61,036 (2004)	2008		Voluntary Surrender	X	X	Removed due to costs of environmental mitigation license conditions.
Fort Halifax Dam, Fort Halifax Project, Sebasticook River, MA	124 FERC ¶ 62,007 (2008)	2008		Voluntary Surrender		X	Removed due to costs of environmental mitigation license conditions.
Wild Cat Dam, Battle Creek Hydroelectric Project, Battle Creek, CA	128 FERC ¶ 62,135 (2009)	2009		License Amendment	X	X	Removed to restore fish habitat as mitigation for other projects.
Dillsboro Dam, Dillsboro Project, Tuckasegee River, NC	120 FERC ¶ 61,054 (2007)	2010		Voluntary Surrender (Minor License)	X	X	Removed to restore fish habitat as mitigation for relicensing of other licensee projects.
Powerdale Dam, Powerdale Hydroelectric Project, Hood River, OR	113 FERC ¶ 62,148 (2005)	2010		Voluntary Surrender	X	X	Removed due to costs of environmental mitigation license conditions.
Condit Dam, Condit Hydroelectric Project, White Salmon River, WA	133 FERC ¶ 61,232 (2010)	2011		Voluntary Surrender	X	X	Removed due to costs of environmental mitigation license conditions.
Great Works & Veazie Dams, Veazie Hydro Project, Lower Penobscot, MA	131 FERC ¶ 62,238 (2010)	2012 / 2013	2	Voluntary Surrender	X	X	Removed to restore fish habitat as mitigation for relicensing of other licensee projects.
Idylwilde Dam, Loveland Hydroelectric Project, Big Thompson River, CO	*See* 157 FERC ¶ 62,021 (2016)	2013		Voluntary Surrender			Dam removed as part of emergency action following flood damage.
Odell Dam, Odell Creek Hydro Project, Hood River, OR	156 FERC ¶ 62,019 (2016)	2016		Voluntary Surrender (Exemption)			Removed due to costs of environmental mitigation conditions imposed as part of state water right permit.

Dam Name	Order	Year	# Dams Removed	Order Type	Relicen-sing	Settle-ment	Reason
Hogansburg Dam, Hogansburg Hydroelectric Project, Saint Regis, NY	155 FERC ¶ 62,243 (2016)	2016		Voluntary Surrender (Minor License)	X	X	Removed due to costs of environmental mitigation license conditions.
Mill Pond Dam, Sullivan Creek Hydroelectric Project, Metaline Falls, WA	142 FERC ¶ 62,232 (2013)	2017		Voluntary Surrender	X	X	Removed as mitigation for relicensing other projects. Cost of environmental mitigation made project uneconomical.
Hooseir Dam, Rocky River Project, Rocky River, NC	164 FERC ¶ 62,159 (2018)	2018		Voluntary Surrender (Exemption)			Removed to restore habitat for endangered species.
Saccarappa Dam 2, Saccarappa Project, Westbrook River, MA	167 FERC ¶ 61045 (2019)	2019		Voluntary Surrender	X	X	Removed as environmental mitigation for relicensing of other licensee projects.
Ward Mill Dam, Ward Mill Hydroelectric Project, Watauga River, NC	162 FERC ¶ 62,061 (2018)	2021		Voluntary Surrender	X	X	Removed due to costs of environmental mitigation license conditions.
Copco No. 2, Copco No. 1, JC Boyle and Iron Gate, Klamath River, CA	181 FERC ¶ 61122 (2022)	2023	4	Voluntary Surrender		X	Removed due to costs of environmental mitigation license conditions.

Appendix B: Termination By Implied Surrender and Revocation Orders

Implied Surrender[1]

Project Name	Order	License Type	Conditions	Reason
Jack Creek Project, Jack Creek, OR	10 FERC ¶ 61,270 (1980)	Minor License	None[2]	Nonoperational for entire term of current license. Located in Deschutes National Forest.
Pinedale Project, Pine Creek, WY	38 FERC ¶ 61,036 (1987)	License	None	Abandoned for over 15 years and sold without FERC approval. Located on land administered by Bureau of Land Management.
Project No. 2251, Evans Island, AK	38 FERC ¶ 61,106 (1987)	License	None	Licensee did not file for a new license and subsequently sold project without FERC approval. Partially in the Chugach National Forest.
Mechanicville Project, Hudson River, NY	89 FERC ¶ 61194 (1999)	License	None	Noncompliant with license and disagreement about surrender between co-licensees.
29 Mile Creek Project, South Fork American River, CA	122 FERC ¶ 62,201 (2008)	License	Removal required on recommendation of resource agencies, but FERC removed requirement because of licensee noncompliance.	Never completed construction of project and nonresponsive. Located within Eldorado National Forest.
Appleton Trust Project, Middlesex County, MA	124 FERC ¶ 61,255 (2008)	License	None (no dam)	Nonoperational for 14 years. Project was subsequently acquired by city in eminent domain proceeding.
Star Milling Project, Fawn River, IN	128 FERC ¶ 62,164 (2009)	License	Required bank stabilization, boat ramp, other miscellaneous actions as condition to termination. Removal was proposed by resource agency.	Nonoperational for over eight years. Licensee attempted to transfer the license while nonoperational. FERC completed an environmental assessment but found no environmental impact.
Sunshine Power Project, Lake Creek, ID	134 FERC ¶ 62,065 (2011)	License	None Agency comments expressed concern over fish passage and nonfunctional fish ladder.	Sold project without FERC approval and then abandoned project.

[1] This table identifies licenses and exemptions Terminated by Implied Surrender as of July 2024.
[2] Projects must disable power generation upon license termination.

Project Name	Order	License Type	Conditions	Reason
Worthville Dam Project, Deep River, NC	135 FERC ¶ 62,178 (2011)	Minor License	None	Nonoperational for 16 years. Licensee sought to transfer license, but FERC denied transfer.
Elizabeth Webbing Mills Hydroelectric Project, Blackstone River, RI	135 FERC ¶ 62,125 (2011)	Minor License	None	Filed for bankruptcy in 2001, project sold as part of that process, subsequently sold several more times, finally to state, but remained nonoperational throughout. FERC terminated license over objections of licensee.
Gilpin Falls, Hydroelectric Project Northeast Creek, MD	135 FERC ¶ 62,148 (2011)	Exemption	None	Abandoned in 2010 and was nonresponsive to FERC orders.
Jim Boyd Project, Umatilla River, OR	136 FERC ¶ 62,119 (2011)	Minor License	None Agencies raised concerns about project impacts on fisheries and requested removal of project works.	Project ceased operation in 2002 and then sold by the owner without FERC approval.
Fairbank's Mill Hydroelectric Project, Sleepers River, VT	139 FERC ¶ 62,060 (2012)	Exemption	None	Nonoperational since 1991. The project was transferred in 1992 but never repaired.
Webster Lake Project, White Creek, GA	139 FERC ¶ 62,106 (2012)	Exemption	None	Licensee's power contract expired in 1996 and project had been nonoperational since that time.
Merrimac Hydroelectric Project (Essex Dam), Merrimack River, MA	140 FERC ¶ 62,082 (2012)	License	None	Filed for bankruptcy and as part of corporate dissolution proceeding the project was sold to another entity. Project was nonoperational since 2005.
Cedar Falls Hydroelectric Project, Deep River, NC	143 FERC ¶ 62,054 (2013)	Exemption	None	Nonoperation since 2006.
Tallapossa River Hydroelectric Project, Tallapossa River, AL	144 FERC ¶ 62,095 (2013)	Exemption	None	Nonoperation since 1996 and nonresponsive.
Milburnie Hydroelectric Project, Neuse River, NC	142 FERC ¶ 62,041 (2013)	Exemption	None	Project ceased operation and was not responsive to FERC. Dam was removed in 2017 to restore river.
Oakland Hydroelectric Project, Susquehanna River, PA	142 FERC ¶ 61,126 (2013)	Exemption	None Agency comments identified dam as a significant fish passage barrier and requested removal of project works. FERC also identified project as a risk to recreationalists.	Project was in disrepair for over 12 years and did not comply with minimum stream flow and fish passage requirements. * Dam was removed in 2023 to remediate safety and fish passage issues.

Project Name	Order	License Type	Conditions	Reason
Harvell Hydroelectric Project, Appomattox River, VA	142 FERC ¶ 62,212 (2013)	License	None	Licensee failed to maintain project for 13 years and violated conditions including for fish passage and minimum flows. FERC issued several compliance orders and proposed revocation in 2003. Dam was removed in 2014 to restore river.
A.H. Smith Dam Project, San Marcos, TX	149 FERC ¶ 61,135 (2014)	Exemption	None	Project was nonoperational and exemptee was unable to demonstrate progress in repairing project. Exemptee protested the termination of the license.
Whitney Mills Hydroelectric Project, Lawson Fork Creek, SC	147 FERC ¶ 62,052 (2014)	Licensee	None	Project stopped operating in 2005 and licensee sought to sell the project. Licensee instead sought to surrender the project, but the application did not meet FERC requirements, including providing for decommissioning.
Gardner Brook Project, Gardner Brook, MA	150 FERC ¶ 62,069 (2015)	Exemption	None	Exemptee transferred project without notifying FERC. Project was non-operational from at least 2008.
Dardanelles Creek Hydroelectric Project, Dardanelles and Pond Creeks, CA	153 FERC ¶ 61,199 (2015)	Exemption	None BLM requested that FERC to maintain jurisdiction to help BLM remove the project and restore federal lands.	Project was transferred but transferee never acquired necessary rights to use federal lands for project; project was nonoperational.
Ace Ranch Hydroelectric Project, West Fork Carson River, CA	152 FERC ¶ 62,179 (2015)	Minor License	None	Licensee sold the project without obtaining necessary FERC approval. The transferee subsequently sold and abandoned the project.
Riverdale Hydroelectric Project, Enoree River, SC	153 FERC ¶ 62,231 (2015)	License	None Agency comments noted concern that the project impairs the recovery of migratory fish and requested a decommissioning plan to remove project works.	Licensee sought to transfer project but never completed the necessary documentation. The licensee then filed an application to surrender its license but did not provide a complete application and subsequently abandoned the project.
Landis-Harde Water Power Project, Perry Creek, CA	155 FERC ¶ 61,262 (2016)	License	None	In 2010 the licensee determined that the project was uneconomical and left the project nonoperational until termination.
Potosi Water Power Project, Willow Creek, MN	155 FERC ¶ 61,057 (2016)	License	None	Project was nonoperational for 21 years. During period of nonoperation the licensee transferred the license but required repairs were never completed. Montana would not have regulatory oversight expect in response to complaints.

Project Name	Order	License Type	Conditions	Reason
Congdon Dam Project Oxoboxo Brook, CT	154 FERC ¶ 61,209 (2016)	Exemption	None	Project had been nonoperational for 14 years. The exemption had been transferred multiple times, but repairs were never completed.
Exeter River Project, Exeter River, NH	158 FERC ¶ 61,037 (2017)	Exemption	None	Projected ceased operating in 1997 following a flood. The exemption was transferred in 2009 and failed to restore the project.
Secord, Sanford & Smallwood Dams (Boyce Projects), Tittabawassee River, MI	175 FERC ¶ 61,143 (2021)	Licenses	None	The project was out of compliance with license conditions, which had resulted in safety violations. Following a significant high flow event, the project was purchased by a local entity for purposes of repair. FERC imposed a $15 million penalty prior to terminating license.
Dry Spruce Bay Hydroelectric Project, AK	181 FERC ¶ 62,127 (2022)	License	None	Nonoperational since 2007. Licensee filed a surrender application but did not provide required information. Located on lands administered by the Bureau of Land Management
Goose River Project, Goose River, MI	183 FERC ¶ 62,044 (2023)	Minor License	None Comments expressed concerns for water quality and fish passage impacts.	Project consisted of five developments, several of which were nonoperational. Following license transfer, licensee failed to restore the projects.

Revocations[1]

Project Name	Order	License Type	Conditions	Reason
Milton Mills Projec3t, Salmon Falls River, NH	46 FERC ¶ 62,038 (1989)	Exemption	None[2]	Project was nonoperational since 1984.
Spring Valley T. Power Project, Campbell Creek, CA	46 FERC ¶ 62,249 (1989)	Exemption	None	Project did not comply with filing safety inspection report.
Tule River Indian Hydro Project, Tule River, Tule River Indian Reservation	52 FERC ¶ 62,070 (1990)	Exemption	None	Project was nonoperational since exemption was issued.
Centerville Dam Project, Prairie River, MI	66 FERC ¶ 61,278 (1994)	Exemption	Restore flows to the bypass reach	Project did not comply with license conditions for fish and sediment control from 1987 to 1994.
Slaughterhouse Gulch Project, Slaughterhouse Gluch Creek, ID	91 FERC ¶ 62,063 (2000)	Exemption	Required exemptee to remove project works, including diversion structure as requested by Idaho Fish and Game.[3]	Project was nonoperational since 1992 and did not comply with FERC required repairs and abandoned project.
Shasta River Project, Shasta River, CA	92 FERC ¶ 62,261 (2000)	Exemption	None	Following flood damage, the exemptee failed to restore project to comply with fish passage conditions
Frankfort Hydroelectric Project, Marsh Stream, MA	147 FERC ¶ 6,118 (2014)	Exemption	None Agencies and NGOs wanted to remove FERC jurisdiction because working with city to resolve fish passage.	Project put in fish passage but did not meet U.S. Fish and Wildlife standards and exemptee did not comply with restoration requirements.
East Juliette Hydroelectric Project, Ocmulgee River, GA	149 FERC ¶ 61,036 (2014)	Minor License	None Agency noted concerns with fish passage but recognized that noncompliance would likely prevent imposing fish passage conditions. NGOs supported dam removal.	For 12 years, project did not comply with fish passage requirements imposed as part of capacity amendment.
Edenville Project, Tittabawassee River, MI	164 FERC ¶ 61,178 (2018)	License	None	For 14 years, project was in violation of safety requirements and out of compliance with license conditions.
Potter Creek Hydroelectric Project, Potter Creek, MT	172 FERC ¶ 62,153 (2020)	Exemption	None	FERC revoked exemption after the U.S. Forest Service removed project following exemptee's death.

[1] This table identifies revoked licenses and exemptions as of July 2024. The table excludes both licenses and exemptions terminated for failure to commence construction within the prescribed time.
[2] Projects must disable power generation upon license revocation.
[3] This report could not confirm whether the diversion structure and other project works were removed.