

# FERC and Dam Decommissioning

By Matthew D. Manahan and Sarah A. Verville

Seven years ago, the Federal Energy Regulatory Commission (FERC) denied, for the first time, an owner's application to obtain a new license for an operating hydroelectric project. Instead, FERC required that the dam—the Edwards Dam, a small hydroelectric project in Augusta, Maine—be removed. In early 2004, American Rivers, a nongovernmental organization whose mission is to preserve and restore the “ecological integrity” of the nation's rivers, reported on its website that since the removal of the Edwards Dam in 1999 more than 114 dams have been removed and dozens more removals are anticipated. While the majority of those dams did not generate hydroelectricity, an increasing number of dams slated for removal are operating hydroelectric projects. And, in many cases, it is the project owner who is proposing to take the project out of service.

Hydroelectric power is clean, renewable energy, yet the costs of obtaining new licenses from FERC have become prohibitive, particularly for small projects. Project owners are increasingly considering decommissioning their projects as an alternative to relicensing and continued operation. The increasing trend toward dam decommissioning is particularly ironic given efforts by the federal government to decrease U.S. dependence on imported oil and efforts to increase funding for renewable energy technologies.

There are a number of reasons driving this decommissioning trend: project owners face increased maintenance costs for older dams; under a deregulated market, the cost of power and the revenues to be derived are not as predictable or stable; and the costs of relicensing and license conditions often are prohibitively expensive. These trends also reflect the pressures of a regulatory environment in which nongovernmental organizations and some state and federal agencies view dam removal as the best or only option for ecosystem restoration, including fisheries restoration and enhancement of water quality.

Decommissioning a hydropower project, however, can be as expensive and as controversial as relicensing. It may make more sense to relicense the project even if the project will operate at a loss. To conduct a realistic cost-benefit analysis of whether to relicense or decommission a project, project owners should understand that decommissioning will, in most cases, be more expensive than one would expect. This article presents an overview of how

those costs multiply, and discusses potential alternatives to control those costs.

First, an examination of the hydroelectric project relicensing provisions of the Federal Power Act (FPA) demonstrates how dam owners may be “dammed if they don't” surrender their licenses. Under the FPA, FERC has exclusive authority to license nonfederal hydropower projects located on navigable waterways. There are about 2,500 FERC-licensed hydropower projects in the United States. These projects comprise about half of the nation's developed hydroelectric capacity. The other half are federally owned projects that do not require FERC licensing.

The FPA mandates that FERC licenses must be for a period of thirty to fifty years. Hydro relicensing is a complex, expensive, and lengthy regulatory process. At a minimum it takes five years to relicense a project. On average it takes ten years, and can take up to twenty years. Although FERC has introduced several initiatives over the past few years intended to reduce that average relicensing time, including adoption in 2003 of new hydroelectric licensing regulations, the statutory framework sets up a complicated relicensing process.

Not earlier than five and one-half years or later than five years prior to license expiration a licensee must notify FERC if it will seek a new license to continue operating a project. After giving notice, the licensee must consult with federal, state, and local resource agencies, Indian tribes, national and regional nongovernmental organizations, and the public. The licensee must file its relicense application at least two years prior to expiration of the existing license.

It is not uncommon for the licensee to meet with consulted entities as often as two days per month over a five-year period to identify issues, plan studies, analyze study results, and identify alternatives for how the project should be operated. Often there will be as many as thirty entities at a consultation meeting, and distribution of the many study plans, study reports, and other licensing materials can include more than one hundred organizations and individuals.

As a result of this consultation, the licensee must conduct scores of costly studies regarding the project's impacts on water quality and quantity, fisheries and aquatic habitat, terrestrial and botanical resources, archaeological and historic resources, recreation, land management, and aesthetics. Once the studies are complete, or while they are underway, the licensee must prepare a draft application for review by the consulted entities. The licensee then must file its final application containing the results of the studies;

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the comments of the consulted entities; the licensee's proposals for future operation, protection, mitigation, and enhancement measures; and its public benefits analysis.

Once the licensee has filed its relicensing application, FERC's role is to conduct an independent analysis, in accordance with requirements of the FPA and the National Environmental Policy Act (NEPA), to determine whether to issue a new license and to establish its conditions. This analysis includes the preparation of an environmental assessment (EA) or an environmental impact statement (EIS), and possibly a new round of consultation and studies.

In deciding whether and under what conditions to issue a license, FERC must consider power and development purposes (such as flood control, water supply, and irrigation). FERC also has to give equal consideration to energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife resources; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. These other aspects of environmental quality include water quality and quantity, botanical resources, historical and archaeological resources, land use and shoreline management, and aesthetics.

While the FPA provides FERC the exclusive authority to license hydroelectric projects, federal and state agencies have been given broad authority to impose conditions on hydropower projects. The Departments of Commerce and the Interior have authority to mandate fish passage under Section 18 of the FPA. The Departments of Agriculture and the Interior have authority to mandate conditions when a project or portion thereof is located on national forest lands or on an Indian reservation, under Section 4(e) of the FPA. FERC has little or no authority to modify or reject these Section 18 and 4(e) conditions.

Section 401 of the Clean Water Act (CWA) requires that before FERC issues a license that may result in a discharge into navigable waters, the licensee must obtain a water quality certification from the state water quality agency. Typically, water quality certifications contain conditions regarding a project's impacts not just on water quality but on recreation, fisheries and wildlife, shoreline management, and other resources. FERC must incorporate the water quality certification conditions into the license.

In addition to the FPA and the CWA, there are other federal laws that may have a significant impact on the relicensing process. These include the National Historic Preservation Act (NHPA), which requires FERC to take into account the effect of the project on any site or object that is included in or eligible for inclusion in the National Register of Historic Places; the Coastal Zone Management Act (CZMA), which requires FERC to certify to the state that the proposed licensing action will be consistent with the state's Coastal Management Program; and the Endangered Species Act (ESA), which requires FERC to consult with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA Fisheries) to determine whether the relicensing is likely to jeopardize the continued existence of any endangered or threatened species or result in destruction of critical habitat.

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The result of the relicensing process is the issuance of a FERC license with multiple conditions designed to protect, mitigate adverse impacts to, and enhance the resources potentially impacted by the project. The cost of implementing these measures, the cost of the relicensing process, and the cost of lost generation and loss of flexibility in operating the project, are increasingly causing projects to be only marginally economic, if not uneconomic—a result FERC has recognized. In *Mead Corporation, Publishing Paper Division*, 72 FERC ¶ 61,027 (1995), FERC stated that “while economic considerations are a significant element of the public interest balancing for both new and existing projects, they are by no means the determinative consideration, and a finding of negative economic benefits does not preclude issuance of a license.” In a decision issued in June 2004, FERC affirmed its ability to issue uneconomic licenses.

In 2001, FERC staff reported that the average cost to prepare a license application was \$85 per kilowatt and the average cost to the applicant for protection, mitigation, and enhancement measures was \$212 per kilowatt. In other words, the cost to prepare the license application was more than 40 percent of the average cost of the license conditions. For small projects (less than 5,000 kW), the cost to prepare the license application increased to nearly 50 percent of the total cost. That is, it cost as much to prepare the application as to implement the license conditions. In many cases, particularly with small hydroelectric projects, the costs of relicensing can easily outstrip the value of the project over the thirty- to fifty-year license term.

Because of these costs, in recent years, licensees of many projects have decided either to not relicense their projects at the expiration of the existing license terms or to surrender their licenses midterm. In some cases, the licensee has determined that the costs of anticipated new license conditions will make the project uneconomic. In other cases, the licensee has entered into a comprehensive settlement agreement that allows for the decommissioning of an uneconomic project as mitigation for impacts on environmental resources at other projects.

### *Frankly, Scarlet, I Won't Give a Dam!*

When faced with the decision of whether to relicense and continue operating what is or may become a marginally economic or uneconomic project, what alternatives does a licensee have? FERC has made clear that the licensee may not simply walk away from the license and its obligations. When faced with such a project, the licensee's options are limited, and there is often no alternative that does not impose significant costs.

First, the licensee may attempt to transfer the project to a third party. If FERC approves the transfer, the transferee

is bound by all the provisions of the existing license, and the former licensee is relieved of its obligations under the license.

While in theory the transfer of an operating hydroelectric facility to a third party seems like the ideal option, it usually is not. Typically, licensees of uneconomic projects cannot find a willing third party to take over the project precisely because the new owner would be bound by the same terms and conditions (i.e., those that make the project uneconomic).

A second option, assuming the configuration of the project and the project site allow it, is to increase power production through efficiency upgrades, replacement of older equipment, a change in project operations, or even a change in the project itself (e.g., increasing the size of the project's impoundment to store more water to use during times of lower precipitation).

As with transferring a project, amending a project to increase power production at a project requires prior FERC approval. Depending on the nature of the amendment, amending a project license can be as complex and costly as relicensing. The amendment process for increasing generation at a licensed project requires consultation, studies, and the filing of an application that assesses the proposed amendment's impacts on the same resources one would assess in relicensing.

Additionally, some of the statutes that come into play during a relicensing proceeding are also applicable in an amendment proceeding. Depending on the nature of the amendment, the licensee may be required to obtain a water quality certification from the state water quality agency pursuant to Section 401 of the Clean Water Act. FERC also must prepare an EA or, in some cases, an EIS.

The amendment process also may result in new costly license conditions. In many cases, the projected net revenue from the proposed increase does not sufficiently offset the continued cost of operating the project.

Finally, after exploring these and other alternatives, a licensee's only option may be to surrender its license and decommission the project. A licensee may surrender its license "only upon mutual agreement between the licensee and the Commission." 16 U.S.C. § 799.

Some licensees have argued that FERC lacks jurisdiction to require a surrender application when a licensee proposes to decommission its project at the end of a license term and not use the project works for power purposes. FERC has rejected these arguments and held that it will authorize projects to continue operating on an annual basis, and if no one files an application for a license, it will require the existing licensee to file a surrender application. *Southern California Edison*, 106 FERC ¶ 61,212 (2004). Similarly, FERC has held that a licensee is free to seek surrender of its license and

that FERC cannot require a licensee to continue operating and maintaining a project against its will. *FPL Energy Maine Hydro, LLC*, 107 FERC ¶ 61,120 (2004).

There is an exception, however, to the ability to surrender freely. If the surrender proposal includes maintaining the dam in place and the project provides storage capability, the licensee must demonstrate that the remaining dam and its reservoir are not "necessary or appropriate" in the maintenance and operation of a licensed power facility. 16 U.S.C. § 796(11). FERC has significant discretion in determining whether a dam or reservoir is "necessary or appropriate" to a downstream licensed power plant. On the one hand, FERC has determined that an increase in downstream generation by .06 percent does not render a dam and reservoir "necessary or appropriate." *Chippewa and Flambeau Improvement Co.*, 95 FERC ¶ 61,017 (2001). On the other hand, FERC has held that adding 2.4 percent to 5 percent to power generated by downstream plants is sufficient to give it mandatory licensing jurisdiction. *Great Northern Paper Inc.*, 91 FERC ¶ 61,035 (2000); *Georgia-Pacific Corp.*, 91 FERC ¶ 61,047 (2000).

Moreover, FERC has stated that "a licensee's intentions have no bearing on a project's jurisdictional status." *Southern California Edison*, 106 FERC ¶ 61,212 (2004). Thus, whether releases are synchronized with downstream power generation or whether

the timing of releases is primarily determined by nonpower considerations is of little relevance. So if the licensee changes project operation such that it is operated solely for the benefit of, say, recreational users of the reservoir, FERC still could determine that the project is jurisdictional—and that license surrender is not an option—if there are downstream power benefits.

FERC's regulations governing surrender, unlike most FERC provisions involving a project license, provide little guidance on the surrender process. The rules do not specify the prefiling consultation process required for surrendering a license, but the commission's general rules implementing NEPA do include a requirement that a licensee surrendering a project license must consult with appropriate federal, state, and local agencies to identify potential environmental impacts of the proposed action.

Thus, FERC has directed at least one licensee whose existing license had expired to provide state and federal agencies and Indian tribes a minimum of a thirty-day comment period prior to filing the surrender application. *Southern California Edison*, 106 FERC ¶ 61,212 (2004). Recent midterm and end-of-license surrender cases show that licensees have conducted some prefiling consultation, which included a notice-and-comment opportunity, but by no means have they engaged in the prefiling consultation process required when relicensing a project.

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The regulations governing surrender also appear to give the licensee some flexibility to determine what to include in a surrender application, although FERC's NEPA rules require that FERC must prepare at least an EA for an application for surrender of a license where project works exist. The licensee, therefore, needs to provide sufficient information to support the required EA.

FERC is required to provide at least thirty days public notice prior to taking action on any surrender application and, in addition, FERC will afford resource agencies and others all the usual opportunities for input that typically occur during the process of developing EAs. Thus, the surrender process includes ample opportunity for the resource agencies and others to advocate for alternative decommissioning options and assessment of the impacts of those options on various environmental resources.

Licensees proposing to decommission a project have conducted studies on the impact of the potential release of sediments (including contaminated sediments) versus sediment removal; impacts to water quality and supply; fisheries and fish habitat; state and federally listed endangered fish and wildlife species; historic and archaeological resources; downstream flood conditions; public recreation, wetland and terrestrial resources; land use and aesthetics; groundwater elevations; private wells; public infrastructure, such as sewer lines; state and local bridges and pipelines; the increased potential for ice jams and ice scour below the dam; the potential for bank erosion; and the impact on outfalls.

Other approvals may be required for FERC to issue a surrender order or to comply with conditions imposed by FERC in the surrender order. FERC requires licensees to obtain a state water quality certification or waiver pursuant to Section 401 of the CWA before it will approve a surrender order. If the proposed decommissioning may adversely impact endangered species, the ESA requires a biological opinion from FWS or NOAA Fisheries. Section 404 of the CWA may require approvals from the Army Corps of Engineers if the proposed decommissioning involves work in navigable waters of the United States. And, as with relicensing, other statutes such as the CZMA and the NHPA may come into play.

While there are strong arguments that the FPA preempts the application of state and local laws to the surrender of a FERC license, the licensee may decide that it makes the most sense simply to obtain state and even local approvals before proceeding with the proposed decommissioning. Obtaining state and local approvals can impact both the timing and cost of the surrender process and its outcome. In one case, a state environmental agency delayed ruling on the licensee's application for permits under state law until after FERC issued its order, and the Army Corps of Engineers delayed ruling on the

application for a dredge and fill permit pursuant to Section 404 of the CWA until after the state acted. If the town or county opposes the proposed decommissioning, it also may decide to defer processing the licensee's applications for local permits. In the same case, the town in which the dam is located refused to accept as complete and would not process the licensee's applications for local approvals until all other approvals had been received. In a case in Washington, the counties refused to meet with the licensee to discuss procedures for obtaining local approvals.

### *Will de Commission Decommission?*

FERC will authorize license surrender only after fulfillment of "such obligations under the license as the Commission may prescribe, and, if the project works authorized under the license have been constructed in whole or in

part, upon such conditions with respect to the disposition of such works as may be determined by the Commission." 18 C.F.R. § 6.2. The commission believes it has authority to determine how a license will be surrendered and a project decommissioned, and has made clear that it will not allow licensees "to simply walk away from a Commission-licensed project without any Commission consideration of the various public interests that might be implicated by that step." FERC Policy Statement, Project Decommissioning at Relicensing, 60 Fed. Reg. 339, 345 (1995). On the other hand, FERC has stated that a licensee is not compelled to continue operating its projects if it wishes to surrender its license. *Niagara*

*Mohawk Power Corp. and Fourth Branch Associates*, 98 FERC ¶ 61,227, *reh'g denied*, 100 FERC ¶ 61,185 (2002).

The commission's Decommissioning Policy Statement recognizes that possible forms of decommissioning a project may extend "from simply shutting down the power operations to tearing out all parts of the project, including the dam, and restoring the site to its pre-project condition." 60 Fed. Reg. at 340 (1995). The policy statement provides that if a dam is to remain in place or if aspects of the project will be left that may significantly affect public resources, "the Commission generally wants to be satisfied that there is another authority to take over regulatory supervision."

FERC's surrender orders typically include conditions to ensure that the remaining project facilities will be in a safe and stable condition during and after completion of the decommissioning and short-term measures to address environmental impacts that the licensee must undertake while the project remains under FERC's jurisdiction. FERC will not include long-term measures that would necessitate FERC's continuing jurisdiction over the project because surrender

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entails the termination of FERC's jurisdiction. Once the surrender becomes effective, FERC has held that any continuing issues are addressed under state regulation.

FERC has included conditions to remove or modify any blockages to fish migration that may be present after an impoundment is drawn down; recover fish or mussels stranded during the removal process; control erosion; protect cultural and historic resources; ensure that disturbances to nesting spotted owls are minimized; prepare a revegetation, noxious weed, and site restoration plan; construct a temporary fish passage facility and prepare an operation plan for the period in which the dam is being removed; implement measures to minimize the incidental take of endangered species; notify area homeowners with water wells that may be adversely affected by the lowered impoundment; and investigate measures that could be implemented to mitigate for the loss of an impoundment as a water source for fire emergencies.

FERC has declined to include conditions that call for the long-term monitoring of water velocities and water elevations, the provision of recreational access for canoeing and fishing, continued maintenance and operation of the project in a run-of-river mode, maintenance and monitoring of streamflow gages, and long-term fish passage. FERC also has declined to impose conditions regarding replacement of a sewer line and potential impacts to well owners from lowered groundwater elevations.

Although it is difficult to predict the time frame and cost of project decommissioning, the result of those costs may be that dam owners are "dammed if they do" surrender their licenses. Often, the time and cost is dependent on the project, the nature of the issues, and the degree of controversy.

In 1999, PacifiCorp filed its application to decommission its Condit project, a 14 MW project located in Washington. As of June 2004, FERC had not yet issued an order authorizing decommissioning, the Washington Department of Ecology had yet to issue a water quality certification, and NOAA Fisheries had not issued a biological opinion pursuant to Section 7 of the ESA. The counties oppose the proposed decommissioning because of concerns regarding water quality and fisheries habitat impacts resulting from the proposed discharge of sediments into the river, impacts to public infrastructure such as bridges and pipelines, impacts to nearby wells, groundwater levels, property devaluation, and other issues. But, in another instance, FERC issued its order approving the licensee's surrender application within eighteen months. *Portland General Electric Company*, 107 FERC ¶ 61,158 (2004).

Even after FERC has issued the surrender order, obtaining state and local approvals and defending administrative and judicial appeals may add substantial time and cost. In one recent case, the project owner originally proposed to remove the project facilities, with the support of state and federal fisheries agencies and an Indian tribe. The towns and a number of local residents opposed the removal and the towns filed condemnation proceedings in state court. Ultimately the project owner and the towns reached a settlement agreement in which the project facilities would remain in place. Two years after FERC issued its original surrender order, it modified the

order to delete removal of the project facilities as a condition of the surrender. *John C. Jones*, 107 FERC ¶ 61,279 (2004).

While licensees are increasingly investigating whether to decommission a project because the cost of relicensing and continued operation make the project marginally economic or uneconomic, the costs to decommission a project are often high, and vary depending on the nature of the decommissioning and the issues involved. FERC estimated that decommissioning a 6 MW project in Oregon would cost \$4,763,000, but decommissioning a 7 MW project in Arizona would cost \$11,806,000. *PacifiCorp*, Environmental Assessment for Surrender of License, FERC Project No. 2659 (FERC Office of Energy Projects, Dec. 2003); *Arizona Public Service Co.*, Final Environmental Assessment, FERC Project No. 2069 (FERC Office of Energy Projects, Mar. 2004).

As discussed below, opportunities for financial assistance exist for some decommissioning projects, but it is rare that such financial assistance completely offsets the costs of decommissioning, and it is not available to all project owners who face a decision whether to relicense or decommission a project.

In some cases, the licensee has been able to reach a settlement with stakeholders in which the licensee is allowed to continue generating at the project even after FERC has approved the surrender order, in order to generate revenues to help offset the cost of decommissioning. In other cases, the licensee has negotiated a settlement agreement in which other public and private funds will be used to pay for the transfer of the project to another entity, which will then undertake the decommissioning. In at least one instance, congressional funding has been approved for the removal of a project. *James River II, Inc.*, 90 FERC ¶ 61,235 (2000).

Some nongovernmental organizations, such as American Rivers and Trout Unlimited, and some states, such as New Hampshire, will assist in finding potential sources to help fund the costs of dam decommissioning. In 2001 American Rivers entered into a partnership with NOAA (the NOAA Community-Based Restoration Program) to provide financial and technical assistance for dam removal projects in the northeast, the mid-Atlantic, and California that restore habitat of anadromous fish species.

Despite these different mechanisms for financial assistance, it is difficult to predict with any degree of certainty the costs that a licensee will have to bear for decommissioning an operating hydroelectric project. And, as the length of the surrender process increases, the costs become more significant.

There is a trend across the country toward more frequent dam decommissioning (usually removal or partial removal), particularly of small and marginally economic FERC-licensed hydroelectric projects. In such cases, the project owner is caught in a difficult catch-22: it is too expensive to continue to operate the project, but it also is expensive—maybe prohibitively expensive—to surrender the FERC license. The project owner is damned if he doesn't surrender, and damned if he does, and therefore must fully understand the process and its costs before proceeding with the surrender decision.