S.D. Warren and the erosion of federal preeminence in hydropower regulation

S.D. Warren and the Erosion of Federal Preeminence in Hydropower Regulation

Daniel Pollak[*]

The U.S. Supreme Court's 2006 ruling in S.D. Warren v. Maine Board of Environmental Protection *affirms that releases of water from hydroelectric dams constitute a "discharge" under the federal Clean Water Act (CWA). This means that hydropower relicensing will trigger section 401 of the CWA, requiring federal licensees to obtain state certifications that their operations will comply with state water quality standards. While for the most part the* S.D. Warren *opinion is a narrow exercise in statutory interpretation, it is also a landmark in the shifting balance of federal and state power in hydropower regulation. The Federal Power Act of 1920 (FPA) originally granted the Federal Power Commission (later the Federal Energy Regulatory Commission, or FERC) sole, preemptive authority to license nonfederal hydroelectric dams. Later amendments to the FPA and new statutes such as the CWA have eroded that sole, preemptive FERC role, elevating the importance of environmental considerations and the influence of state and federal resource protection agencies in the dam relicensing process. By affirming that dam releases are "discharges" under the CWA,* S.D. Warren *turns back an attempt to severely curtail the role of states in hydropower regulation. Furthermore, in declining to consider an FPA-based preemption challenge to the states' CWA section 401 authority, the* S.D. Warren *ruling gives states a green light to forcefully assert their*

[*] J.D. Candidate, University of California, Berkeley, School of Law (Boalt Hall), 2008; M.S. Ecology, University of California at Davis, 2006; A.B. Philosophy, University of California, Berkeley, 1988. I would like to acknowledge Scott Zimmerman, Articles Editor of the Ecology Law Quarterly, for extremely helpful substantive and organizational suggestions during the editing of this Note. I would also like to thank Bob Infelise and Jenna Musselman of the Boalt Environmental Writing Seminar for valuable feedback. I am also grateful for the practitioners who provided me with information and answered questions during my research—most notably, Andrew Sawyer of the California State Water Resources Control Board, Brian Johnson of Trout Unlimited, and Henry Ecton of the Federal Energy Regulatory Commission.

environmental goals in the hundreds of hydropower relicensing proceedings that will be taking place in coming years. In particular, I argue that under section 401, the state role need not be limited to the traditional one-time, prospective review that locks in license conditions for thirty to fifty years. Adaptive management, with its emphasis on long-term monitoring, contingency planning and responsiveness to new information, is better suited to the dynamic nature of river ecosystems. S.D. Warren *leaves open the opportunity for states to use section 401 to impose adaptive management requirements on hydropower licenses. Doing so would allow states to improve the responsiveness of dam regulation to changing knowledge and environmental conditions.*

INTRODUCTION

Dams are one of humankind's great engineering achievements, and also among the most potent manifestations of human impact on the environment. It is not surprising, then, that the nation's hydropower dams have long been environmental battlegrounds. This conflict between economic and environmental needs has placed two federal statutes, the Clean Water Act of 1972[1] and the Federal Power Act,[2] into an uneasy relationship. *S.D. Warren v. Maine Board of Environmental Protection*[3] is a major development, perhaps a culminating one, in the conflict over the interpretation and application of these laws in the regulation of hydropower.

Under the Federal Power Act (FPA), as interpreted by the U.S. Supreme Court in the 1946 case *First Iowa Hydro-Electric Cooperative v. Federal Power Commission*,[4] the Federal Energy Regulatory Commission (FERC) was supposed to have paramount, preemptive authority to license nonfederal hydropower projects. However, the Clean Water Act (CWA), passed many decades after the creation of the federal hydropower regulatory system, embodies cooperative federalism, a system that gives considerable leeway to the states. Section 401 of the CWA requires hydropower licensees to obtain state certification that their projects comply with the CWA and appropriate requirements of state law. This requirement provides a back door for states to exercise a strong voice for environmental protection, what some call a virtual veto power, in hydropower licensing. Because CWA water quality standards are defined by states under a broad CWA mandate, section 401 certification is a very powerful and flexible tool that has enabled states to

1. Clean Water Act, 33 U.S.C. §§ 1251-1376 (2006).
2. Federal Power Act, 16 U.S.C. §§792-892r (2006).
3. S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006).
4. First Iowa Hydro-Electric Coop. v. Fed. Power Comm'n, 328 U.S. 152 (1946).

impose a wide variety of conditions on dams, ranging from the timing of flows to the construction of fish passages and the enhancement of recreational opportunities for fishers and boaters.

Federal courts have been reluctant to interfere with this exercise of state authority. The *S.D. Warren* litigation represented a bold effort to overturn the status quo and establish, contrary to many years of legal and administrative precedent, that hydropower dams do not result in a "discharge" to navigable waters of the United States, and that they therefore do not trigger CWA section 401 at all. If this effort had succeeded, it would have been a major setback for environmentalists and reduced state influence over water quality regulation in rivers. However, in a unanimous ruling that turned largely on the meaning of a single word in the CWA ("discharge"), the U.S. Supreme Court affirmed the regulatory status quo, ruling that hydropower licensees are in fact subject to CWA section 401 and must still obtain state certification.

Licensees have long complained that states are too aggressive in using section 401 to impose requirements only tangentially related to water quality, and that state reopener clauses improperly intrude on the federal regulatory scheme.[5] However, the *S.D. Warren* court declined to address the question of when state authority becomes so intrusive as to improperly undermine the preeminent federal authority over hydropower licensing—and it seems unlikely to do so in the foreseeable future. This means that it will probably be up to state courts to decide on a case-by-case basis whether states are exceeding their lawful authority in the sorts of conditions or restrictions they place on hydropower licensees via CWA section 401. Some hydropower owners will continue to chafe at what they see as an overly intrusive state role that they say compounds the costs and delays imposed by the FERC licensing process.

Since the adoption of the CWA, states and environmentalists have grown more aggressive about seeking to restrict or remove dams, and it is likely that *S.D. Warren* will encourage states to test and expand the boundaries of their CWA section 401 authority. I propose that the Court's rulings on section 401 create an opportunity for states to challenge the traditional model of hydropower licensing as a one-time prospective review that freezes in place the states' conditions for thirty to fifty years. Given the complexity and uncertainty inherent in managing aquatic ecosystems, watersheds arguably require an adaptive management approach. I argue that CWA section 401 gives states the leverage to gain a continuing, ongoing regulatory role after license issuance through "reopener" clauses. In *S.D. Warren*, for the second time

5. *See* Lisa M. Bogardus, *State Certification of Hydroelectric Facilities Under Section 401 of the Clean Water Act*, 12 VA. ENVTL. L.J. 43 (1992).

in a little over a decade,[6] the Supreme Court declined the opportunity to place definite limits on the scope of the states' section 401 power.

All of this means the *S.D. Warren* ruling is of great practical significance. In coming decades, hundreds of hydropower dams that have major effects on the environment will come up for relicensing.[7] Each relicensing procedure has far-reaching impacts because licenses are issued for a period of thirty to fifty years. *S.D. Warren* has made it clear that state governments will have a strong voice in these proceedings. This could lead to fights in state courts about the proper scope of the section 401 authority. It could, however, also enhance efforts to make FERC relicensing processes more collaborative. It is now clearer than ever that licensees face a dual system of state and federal regulation, with all that implies about the enhanced opportunities for disagreements with stakeholders to add delays and costs. *S.D. Warren* may thus provide a stronger incentive for licensees to seek an early, negotiated settlement of environmental protection issues when their dams come up for relicensing.

I. THE IMPORTANCE OF HYDROPOWER RELICENSING

To appreciate the context and significance of the *S.D. Warren* ruling, it is useful to first describe three aspects of hydropower in the United States: (1) there are a great many dams that will be relicensed in coming years; (2) dams have major environmental impacts that are of concern to states; and (3) state involvement in the relicensing process can make the process more time consuming and costly for licensees.

A. The Number of Dams Up for Relicensing

Over the next thirty years (from 2007 through 2037), the licenses will expire on 587 nonfederally owned hydroelectric dams. An additional 399 licenses will expire in later years.[8] The following table shows the number of such dams by state, as well as the number that will come up for license renewal in the next ten years.

6. See discussion of PUD No. 1 of Jefferson County v. Wa. Dep't of Ecology, 511 U.S. 700 (1994), *infra* Part III.A.2.

7. *See infra* Part I.A.

8. Federal Energy Regulatory Commission, Industries: Hydropower, http://www.ferc.gov/industries/hydropower.asp (follow "Complete list of Issued Licenses" hyperlink) (last visited Sept. 26, 2007).

State	Number of Licensed Dams	Number Renewing 2007-2017	State	Number of Licensed Dams	Number Renewing 2007-2017
California (CA)	130	25	Illinois (IL)	10	0
New York (NY)	109	8	Alabama (AL)	8	5
Wisconsin (WI)	84	9	Arkansas (AR)	8	0
Maine (ME)	71	5	Oklahoma (OK)	6	1
Michigan (MI)	55	4	Texas (TX)	6	0
Washington (WA)	53	0	Rhode Island (RI)	5	0
Idaho (ID)	50	2	Indiana (IN)	4	1
Vermont (VT)	45	0	Kentucky (KY)	4	0
New Hampshire (NH)	41	2	Missouri (MO)	4	1
Massachusetts (MA)	29	3	New Jersey (NJ)	4	1
Alaska (AK)	27	3	Ohio (OH)	4	0
Oregon (OR)	27	3	Wyoming (WY)	4	0
South Carolina (SC)	25	9	Nebraska (NE)	3	1
Utah (UT)	24	0	New Mexico (NM)	3	0
Colorado (CO)	22	5	Arizona (AZ)	2	1
North Carolina (NC)	22	4	Iowa (IA)	2	1
Virginia (VA)	22	0	Nevada (NV)	2	0
Georgia (GA)	20	6	Tennessee (TN)	2	0
Minnesota (MN)	20	0	Florida (FL)	1	0
Montana (MT)	19	3	Louisiana (LA)	1	0
Connecticut (CT)	17	1	Maryland (MD)	1	0
Pennsylvania (PA)	17	5	Puerto Rico (PR)	1	0
West Virginia (WV)	14	0	**NATIONAL TOTALS:**	**1028**	**109**

B. The Environmental Impact of Dams

It is an understatement to say that hydroelectric dams have environmental impacts. They have the potential to completely transform the ecology and hydrology of a river or stream. Dams have played a major role in the destruction of commercial and recreational fisheries in both the Western and Eastern United States.[9] Tribal communities are also gravely affected by forced resettlement and the ecological impacts on their lands. Effects caused by hydroelectric dams include changes in water temperature, turbidity, dissolved oxygen and algal growth, siltation, loss of assimilative capacity and saltwater intrusion.[10] Large storage reservoirs cause particularly severe problems with temperature and turbidity.[11]

Many hydropower projects operate in run-of-river mode, where water is diverted into an impoundment (penstock), then to a point some distance downstream where it is routed through a powerhouse and then

9. Brief of Trout Unlimited et al. as Amici Curiae in Support of Respondent at 15–16, S.D. Warren v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1842 (2006) (No. 04-1527), 2006 U.S. S. Ct. Briefs LEXIS 39.

10. Andrew H. Sawyer, Rock Creek *Revisited: State Water Quality Certification of Hydroelectric Projects in California,* 25 PAC. L.J. 973, 975 (1994).

11. *Id.* at 976.

back into the stream. Although such dams may disrupt flows less than a storage or flood control reservoir, the bypassed reach will likely experience reduced streamflow and changes in water quality, adversely affecting fish.[12] Many hydroelectric dams alter the timing of the release of stored water to generate electricity when demand and prices are highest, thereby maximizing the value of generation.[13] There is often therefore a conflict between timing flows for revenue maximization and releasing water for the benefit of fish, wildlife, and recreation.

The impoundment of water may also create a lake that destroys upstream habitat.[14] All dams create a barrier for fish that can interfere with spawning and migration. Fish that are entrained (pass through a dam's turbines) are often killed.[15] When a dam converts a river into a lake, the water may become "stratified," meaning that the water near the surface is heated by the sun while deep water becomes unnaturally cold. If the dam discharges water from near the surface, the river downstream will become warmer, while if the dam releases water from deeper in the reservoir, the river will become colder.[16] Hydroelectric dams also often discharge water with artificially reduced levels of dissolved oxygen.[17] Dams cause other adverse effects, including the trapping of river sediment, the concentration of nutrient pollution, blooms of plankton and algae, and the production of high concentrations of dissolved gasses that can be harmful to stream biota.[18]

C. Economic Impact of the Section 401 Certification Process

If *S.D. Warren* is an invitation for states to expansively wield section 401 in the name of environmental protection, this will not be taken as good news by all. Some hydropower operators and advocates argue that a broad interpretation of section 401 "prevent[s] FERC from crafting reasonable, balanced licenses for existing projects being licensed" and "can directly constrain projects from producing the level of energy and other public benefits that the projects could otherwise provide."[19]

Some hydropower licensees find the length and cost of the FERC licensing process objectionable, and place much of the blame on the state

12. *Id.* at 979.
13. Brief of Trout Unlimited, *supra* note 9, at 11.
14. *Id.* at 7.
15. *Id.* at 7–8.
16. *Id.* at 12.
17. *Id.* at 13.
18. *Id.* at 14.
19. Brief for Edison Electric Institute et al. as Amici Curiae in Support of Petitioner at 11, S.D. Warren v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006) (No. 04-1527), 2005 U.S. S. Ct. Briefs LEXIS 804.

certification process. Complaints about the duration of the licensing process have some basis. A 1990s FERC study found the median length of licensing proceedings to be 42 months.[20] Meanwhile, states appear to be growing more aggressive in asserting themselves under section 401: between 1992 and 1999, the percentage of times that states asserted (as opposed to waiving) their 401 certification rights increased from less than 50 percent of cases to more than 80 percent.[21] FERC has also concluded that state-imposed delays due to section 401 play a major role in lengthening many proceedings: "It is clear that an increase in the number and variety of water quality certificate conditions . . . is increasing the burden of licensing."[22]

FERC reported in 2001 that relicensing proceedings during the last several years cost the average applicant about $2.2 to $2.6 million.[23] Environmental protection, mitigation, and enhancement measures ("PM&E") cost on average $212 per kilowatt,[24] or about $10.9 million per project.[25] Fish protection measures accounted for about 45 percent of these PM&E costs.[26]

State certification also no doubt impacts the ability to generate hydropower, which hydropower advocates are quick to point out is a clean, renewable energy source. Hydropower currently provides about 6.5% of the nation's electricity.[27] Environmental requirements like minimum flows prevent operators from optimizing operations for power production. Reopener clauses or adaptive management provisions imposed by states could impair long-term planning based on the projected output of dams. On the other hand, such long-term certainty is of greatest relevance in making investment decisions about building new projects, and there is little new hydropower development occurring—the vast majority of license proceedings concern decades-old dams. These licensees are arguably "in an excellent position" to comply with new

20. FED. ENERGY REGULATORY COMM'N, REPORT ON HYDROELECTRIC LICENSING POLICIES, PROCEDURES, AND REGULATIONS: COMPREHENSIVE REVIEW AND RECOMMENDATIONS PURSUANT TO SECTION 603 OF THE ENERGY ACT OF 2000, at 31 (May 2001), *available at* http://www.ferc.gov/legal/maj-ord-reg/land-docs/ortc_final.pdf.

21. *Id.* at 49.

22. *Id.* at 40, 49.

23. *Id.* at 47.

24. *Id.* at 48.

25. I derived this per-project cost by taking the average capacity of FERC-licensed projects, 51,574 kW, and multiplying it by FERC's per-kW figure. Data on project capacity is from Federal Energy Regulatory Commission, Industries: Hydropower, http://www.ferc.gov/industries/hydropower.asp (last visited Sept. 6, 2007).

26. FED. ENERGY REGULATORY COMM'N, *supra* note 20, at 49.

27. Energy Information Administration, U.S. Department of Energy, EIA—Electricity Data, Electric Power Capacity and Fuel Use, Electric Surveys and Analysis, http://www.eia.doe.gov/fuelelectric.html (last visited Sept. 8, 2007).

requirements, "their capital costs having been amortized over the prior license term."[28]

The effect of section 401 certification on hydropower output appears to have been modest to date. In a review of all relicensing proceedings concluded between 1986 and 2001, FERC found that average annual generation loss, attributable largely to increased flows to protect aquatic resources, was 1.59 percent.[29]

II. CASE SUMMARY

A. The Statutory Framework

S.D. Warren addresses the sharing of state and federal power in the regulation of hydroelectric dams. The Federal Power Act gives the Federal Energy Regulatory Commission (FERC) sole authority to issue licenses for nonfederally owned hydroelectric dams.[30] However, section 401 of the CWA provides a powerful lever for states, requiring FERC to incorporate state-imposed conditions in these licenses.

1. FERC Authority Under the Federal Power Act

Congress established the Federal Power Commission in 1920 to centralize the issuance and administration of hydropower licenses in a single agency, and more broadly, to implement a "complete scheme of national regulation which would promote the comprehensive development of the water resources of the Nation . . . instead of the piecemeal, restrictive, negative approach of the River and Harbor Acts and other federal laws previously enacted."[31]

Federal control over hydropower was a cause championed by Progressives such as Theodore Roosevelt, who wanted to ensure that the public waterways remained under public control rather than fall haphazardly into private hands.[32] The FPA would allow licenses of sufficient duration (up to fifty years) to provide development incentives,[33] while allowing future generations to revoke the grant. In 1946 the Supreme Court affirmed that the FPA gave the Federal Power

28. Katherine P. Ransel, *The Sleeping Giant Awakens:* PUD No. 1 of Jefferson County v. Washington Department of Ecology, 25 ENVTL. L. 255, 272 (1995).

29. FED. ENERGY REGULATORY COMM'N, *supra* note 20, at 50.

30. The original statute, the Federal Water Power Act of 1920, put hydropower regulation in the hands of the Federal Power Commission. FERC was created in 1977.

31. First Iowa Hydro-Electric Coop. v. Fed. Power Comm'n, 328 U.S. 152, 180 (1946).

32. Sarah C. Richardson, *The Changing Political Landscape of Hydropower Project Relicensing*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 499, 503–04 (2000).

33. *Id.* at 504.

Commission sole permitting authority over hydroelectric dams and preempted any independent exercise of state permitting authority over dam operations.[34]

In 1977, the Federal Power Commission was renamed the Federal Energy Regulatory Commission. FERC has authority to license hydroelectric projects that are located on navigable waters,[35] as well as most projects on nonnavigable waters over which Congress has Commerce Clause jurisdiction.[36] It also has jurisdiction over projects located on public lands or reservations of the United States, and projects that are using surplus water or water power from a federal dam (i.e. a U.S. Army Corps of Engineers or Bureau of Reclamation dam).[37] The number of hydroelectric facilities increased in the late 1970s and early 1980s after Congress promoted incentives for their development.[38] FERC currently licenses 1,028 nonfederal hydroelectric projects.[39]

In issuing such licenses, which run for a term of thirty to fifty years,[40] FERC may approve only hydroelectric projects "best adapted to a comprehensive plan for improving or developing" the waterway for "interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection, mitigation, and enhancement of fish and wildlife . . . , and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes."[41] A 1986 amendment to the Federal Power Act (the Electric Consumer Protection Act) heightened the importance of environmental considerations in the licensing process. The amendment

34. *See First Iowa Hydro-Electric Coop.*, 328 U.S. 152 (discussed *infra* notes 129–135 and in accompanying text); *see also* California v. Fed. Energy Regulatory Comm'n, 495 U.S. 490 (1990) (discussed *infra* notes 135–140 and accompanying text).

35. Federal Power Act § 4(e), 16 U.S.C. § 797(e) (2006).

36. For example, FERC could have authority over a hydroelectric facility on a nonnavigable waterway if it generated electricity for interstate commerce. Federal Power Act § 4(e), 16 U.S.C. § 797(e). *See, e.g.*, Fed. Power Comm'n v. Union Elec. Co., 381 U.S. 90 (1965) (holding that under the Federal Power Act, a license would be required for a pumped storage hydroelectric project which utilized the nonnavigable headwaters of a navigable river, because the project generated electricity for an interstate power system and thus fell under the purview of the Federal Power Act).

37. Federal Power Act § 4(e), 16 U.S.C. 797(e); FED. ENERGY REGULATORY COMM'N, *supra* note 20.

38. *See* Bogardus, *supra* note 5, at 43.

39. Federal Energy Regulatory Commission, *supra* note 8.

40. The length of the license term is tied to the amount of capital investment FERC requires of the licensee. FERC generally issues a thirty-year term license for projects with little or no redevelopment, construction, capacity, or environmental mitigation or enhancement measures. If a moderate amount of such investment is required, the term is forty years, and if extensive measures are required, the term is generally 50 years. Order Issuing New License, 101 F.E.R.C. P 61,165, 61,672 (Nov. 4, 2002) (Pacific Gas & Electric Co., Project No. 2661-012).

41. Federal Power Act § 10(a)(1), 16 U.S.C. § 803 (2006).

requires FERC to consider the recommendations of federal and state resource agencies as well as those of Indian tribes affected by the project.[42] FERC must include conditions in licenses based on recommendations of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and state fish and wildlife agencies regarding fish and wildlife, unless FERC finds these recommendations are incompatible with the purposes and requirements of the FPA.[43] FERC must also condition the license on the construction, maintenance, and operation of fishways prescribed by federal fish and wildlife agencies.[44] The amendment also requires FERC to give "equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality."[45]

Although the Supreme Court has held that FERC authority preempts states from regulation of hydropower, the FPA does recognize state authority to regulate appropriative water rights.[46] Thus, the ability of dam operators to impound water may be subject to the property rights of other water permit holders as governed by state law. In addition, FPA requires a licensee to show that it is complying with state laws regarding the beds and banks of streams, and regarding business transactions involving the development, transmission, and distribution of power.[47]

2. State Regulation of Dams Under the Clean Water Act

Congress enacted the Federal Water Pollution Control Act, better known as the Clean Water Act (CWA) in 1972. The stated purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters."[48] The Act calls for the elimination of pollutant discharges into the navigable waters, the prohibition of toxic pollutant discharges, and the attainment of water quality sufficient for the protection and propagation of fish, shellfish, and wildlife, as well as for "recreation in and on" the waters.[49]

42. The amendment added section 10(a) to the Federal Power Act.

43. Federal Power Act § 10(j), 16 U.S.C. § 803(j).

44. *Id.* § 811.

45. *Id.* § 797(e).

46. "[N]othing herein contained shall be construed as affecting or intending to affect or in any way to interfere with the laws of the respective States relating to the control, appropriation, use, or distribution of water used in irrigation or for municipal or other uses, or any vested right acquired therein." Federal Power Act § 28, 16 U.S.C. § 821 (2006).

47. *Id.* § 802(a)(2).

48. 33 U.S.C. § 1251 (2006).

49. *Id.*

a. State and Federal Roles in Setting Water Quality Standards

The CWA is a prime example of cooperative federalism, in which Congress offers the states the choice of either (1) enforcing their own regulations that are at least as stringent as federal standards, or (2) having state law preempted by federal regulation.[50] States generally choose the former, setting and enforcing their own water quality standards that are at least as strict as those required by the federal government.[51] In the hydropower context, the broad scope of state water quality standards means that states can insert a wide variety of environmental mandates directly into the federal hydropower licenses.

b. CWA Defines Pollution Broadly

When most people think of water pollution, they think of point sources—something sludgy coming out of a pipe or conduit.[52] The most well-known feature of the CWA is its permitting system for pollutant discharges from discrete "point sources"—the National Pollutant Discharge Elimination System (NPDES).[53] NPDES permits impose quantitative limits on the amount of a pollutant in effluent from a point source, with reference to the best level of control that is technologically available.

Dams are not considered point sources and their operators are not required to have NPDES permits merely for discharging impounded water.[54] However, the CWA has broader goals than merely cleaning up the pollutants discharged in effluent from point sources. The stated purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters."[55] The CWA also defines "*pollution*" in broad terms to encompass more than the discharge of *pollutants*. It defines pollution as "the man-made or man-induced

50. Regarding cooperative federalism generally, see New York v. United States, 505 U.S. 144, 167 (1992).

51. 33 U.S.C. § 1311(b)(1)(C); 40 C.F.R. § 131.4(a) (2007).

52. A "point source" is defined by the CWA as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture." 33 U.S.C. § 1362(14).

53. *Id.* § 1342.

54. *See* Nat'l Wildlife Fed'n v. Gorsuch, 693 F.2d 156 (D.C. Cir. 1982) (upholding the U.S. Environmental Protection Agency's interpretation that the impacts ordinarily caused by dams—such as changes in water temperature and dissolved oxygen concentration—do not constitute "pollutants" as defined by the CWA and are not subject to NPDES permit requirements).

55. 33 U.S.C. § 1251 (2006).

alteration of the chemical, physical, biological, and radiological integrity of water."[56] Given the CWA's definitions, dams are sources of pollution that can reduce water quality, and hence may be regulated under CWA ambient water quality standards.

c. State Certification Authority under Clean Water Act Section 401

While the FPA does not permit states to license hydroelectric dams, the CWA gives them the opportunity to assert their own environmental requirements related to water quality during the federal licensing or relicensing process. Section 401(a) of the CWA requires an applicant for any federal license or permit to obtain "certification" from the state for "any activity . . . which may result in a discharge to the navigable waters" of the United States.[57] The state's certification must confirm that any discharge from the project will comply with applicable effluent limitations and water quality standards under the CWA.[58]

Section 401(a) might be read alone to mean that the state only gets to certify that the actual discharges of a licensed project must comply with the Clean Water Act.

However, section 401(d) broadens the reach of the certification. It states that the certification sets forth any limitations or monitoring requirements necessary to assure that the project will comply with CWA effluent limitations and water quality standards, as well as "any other appropriate requirement of State law."[59] Thus, a project cannot be licensed unless the state certifies that it meets both the requirements of the federal CWA and any "appropriate requirement" of state law.[60]

In addition, the state certification goes beyond merely certifying that a project's discharges comply with the CWA and appropriate state laws. The presence of a "discharge" is the threshold condition that triggers the section 401 requirements. However, the certification itself applies to "any activity . . . which may result in a discharge." [61] Once the threshold

56. *Id.* § 1362(19). In contrast, "pollutant" is defined as "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water." *Id.* § 1362(6).

57. *Id.* §1341(a). The original provision creating certification rights for states was section 21(b) of the Water Quality Improvement Act of 1970, Pub. L. 91-224 § 103, 84 Stat. 91, 108. In 1972, this was reenacted as section 401(a). Brief for Respondent Maine Board of Environmental Protection at 33–34, S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1842 (2006) (No. 04-1527), 2006 U.S. S. Ct. Briefs LEXIS 38.

58. 33 U.S.C. § 1341(a)(1).

59. *Id.* § 1341(d).

60. *See* PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700, 711–14 (1994).

61. *See* 33 U.S.C. § 1341(a) (2006).

condition is met (the possibility of a discharge), a federal license cannot be issued until the state certifies that the *activity as a whole* will comply with the CWA and "appropriate" state law requirements.[62] Such requirements become a condition on the federal license or permit.[63] In other words, the state has significant power to shape the content of FERC licenses in order to meet the requirements of the CWA and state law.

d. The CWA's Ambient Water Quality Standards

Water quality standards quantify or describe the ambient water quality goals of the CWA for each water body. These standards serve as the basis for regulatory controls other than the technology-based NPDES permits (which focus not on the ambient water quality in the water body but on the levels of pollutants in effluent discharges).[64] Section 303 of the CWA requires each state to adopt such standards for all navigable waters "such as to protect the public health or welfare, enhance the quality of water," and serve the other purposes of the CWA.[65] States submit their water quality standards to EPA, which reviews them for consistency with the Act.[66]

Water quality standards consist of two parts:

(1) *Criteria* are narrative or numeric standards for allowable levels of pollution. Typical numeric standards include pH, temperature, concentrations of pollutants, and dissolved oxygen. Narrative criteria might prohibit objectionable odor, color, or turbidity, or the formation of putrescent bottom deposits.[67]

(2) *Designated uses* are beneficial uses that the water body will support if criteria are attained.[68] At a minimum, state water quality standards must, wherever attainable, provide for protection and propagation of fish, shellfish and wildlife and for recreation in and on the water. At the same time, water quality standards must take into consideration the use and value of public water supplies, agricultural and industrial uses, and navigation.[69]

Regulators begin with the goals embodied in water quality standards and then work backwards to impose restrictions on particular point

62. *See id.* § 1341(d); *see also PUD No. 1*, 511 U.S. at 711–12.
63. 33 U.S.C. § 1341(d).
64. 40 C.F.R. § 131.2 (2007).
65. 33 U.S.C. § 1313(c)(2)(A).
66. *Id.* § 1313(c)(2)(A), (c)(3).
67. PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700 (1994).
68. 40 C.F.R. §§ 131.2, 131.3(f).
69. 33 U.S.C. § 1313 (2006); 40 C.F.R. § 131.2.

source and nonpoint source dischargers.[70] Water quality standards are also a key element of the "basin plans" that provide the regulatory framework and goals for each region of the state. In addition, states must enforce what is called an *antidegradation policy*. Under an antidegradation policy, the state is required to maintain existing beneficial uses, and may not set water quality standards below the levels that have already been attained.[71]

The broad and flexible nature of ambient water quality standards is what makes section 401 certification such a powerful tool for states to influence hydropower licenses. The CWA's broad definition of pollution means that thermal discharges or reduced flows can violate state water quality standards. Furthermore, such standards need not be quantified, but can consist of broad narrative goals such as sustaining water quality sufficient for supporting fisheries or recreation—goals that states can insert into licenses via section 401 without usurping the federal licensing authority over hydropower projects.[72]

B. Background and Posture of the S.D. Warren *Case*

1. Factual Background

The Presumpscot River originates at the outlet of Sebago Lake in southern Maine and flows twenty-five miles to the ocean. At one time, it supported thriving populations of freshwater eels and several species of anadromous fish[73] (Atlantic salmon, American shad and alewife).[74] Mill operators began constructing dams on the river in the mid-1600s,[75] and the damming of the river eventually produced a precipitous collapse of its fisheries.[76]

The S.D. Warren Company has been operating on the river since the mid-nineteenth century. Five of the eight present-day dams on the river belong to the company and provide electricity for its paper mill at Westbrook.[77] S.D. Warren's dams operate in run-of-the-river mode,

70. 33 U.S.C. § 1313(c)(2)(A). For an overview of the role of ambient water quality standards in the CWA, see JENNIFER RUFFOLO, TMDLS: THE REVOLUTION IN WATER QUALITY REGULATION (Apr. 1999), *available at* http://www.library.ca.gov/crb/99/05/99005.pdf.

71. 33 U.S.C. § 1313(d)(4)(B); *see also* 40 C.F.R. § 131.2. (2007).

72. *See* PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700 (1994) (discussed in more detail, *infra* note 145 and surrounding text).

73. "Anadromous" refers to fish that migrate from salt water to fresh water to spawn.

74. Brief for Respondent, *supra* note 57, at 8.

75. *Id.* at 7.

76. Brief of Trout Unlimited, supra note 9, at 15.

77. Brief for Respondent, *supra* note 57, at 8; Petition for Writ of Certiorari at 2–3, S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006) (No. 04-1527), 2005 WL 1170408.

meaning that outflow is approximately equal to inflow at any given time.[78] The dams are located back-to-back on a stretch of the river approximately twelve miles in length.[79] Each facility consists of a dam where water is impounded, diverted into a man-made "power canal," sent through power-generating turbines, then into a man-made tailrace that returns the water into the next segment of the river channel.[80]

S.D. Warren's dams were constructed in the early 1900s, although dams have existed at some of the sites for over 250 years. The original FERC licenses were issued between 1979 and 1981 and were set to expire between 1999 and 2001. At S.D. Warren's request, all of the licenses were modified to expire in 2001 to enable a coordinated relicensing review.[81]

2. Administrative and State Court Proceedings

S.D. Warren applied to FERC for new licenses in 1999.[82] At that time, the stretches of river immediately below each dam (known as "bypass reaches") received no flows except leakage and occasional spillage over the spillway. These dewatered reaches ranged in length from 300 to 1,075 feet.[83] The dams provided no fish passage facilities.[84] S.D. Warren filed for section 401 certifications from the Maine Department of Environmental Protection (DEP), but did so under protest, claiming that its dams do not result in any "discharge" under the meaning of CWA section 401.[85] S.D. Warren claimed that because the release of water from the dams added nothing new to the river that was not above the dams, the water flowing out of the turbines was not a "discharge" under the CWA.[86]

The DEP issued certifications requiring the company to maintain minimum stream flows, provide passage facilities for migratory fish and eels,[87] and provide additional releases at some of the facilities to increase dissolved oxygen in the downstream waters.[88] The certifications also required that S.D. Warren provide recreational enhancements such as

78. S.D. Warren v. Board of Environmental Protection, 868 A.2d 210, 212 (Me. 2005), *aff'd*, 126 S. Ct. 1843 (2006).

79. Brief for Respondent, *supra* note 57, at 8.

80. *Id.* at 9.

81. Order Issuing Subsequent License, 105 F.E.R.C. P 61,013, 61,134. (Oct. 2, 2003) (S.D. Warren Co., Project Nos. 2897-003, 2932-003, 2941-002, 2931-002, 2942-005).

82. *Id.*

83. Brief for Respondent, *supra* note 57, at 9.

84. *See id.*; *see also* 105 F.E.R.C. at 61,134.

85. S.D. Warren Co. v. Me. Bd. Of Envtl. Prot., 126 S. Ct. 1843, 1847 (2007).

86. *Id.* at 1849.

87. *Id.* at 1847.

88. Brief for Respondent, *supra* note 57, at 11; *see also* Order Issuing Subsequent License, 105 F.E.R.C. P 61,013, 61,136. (Oct. 2, 2003) (S.D. Warren Co., Project Nos. 2897-003, 2932-003, 2941-002, 2931-002, 2942-005).

improvement of access trails and roads for anglers and boaters, acquisition of access easements, dedication of an island, interpretive signs, and parking improvements.[89] Furthermore, the certification requirements included "reopener" clauses requiring S.D. Warren to monitor the effects of environmental mitigation measures, and providing DEP with authority to revise the certification requirements later if environmental goals were not being met.[90]

S.D. Warren appealed unsuccessfully before the Maine Board of Environmental Protection (BEP), and then before the state superior court and the Maine Supreme Judicial Court.[91] In its appeal to the Maine high court, S.D. Warren asserted that BEP exceeded its authority both in finding certification to be required and in the specific conditions it imposed under the certification.[92] The Maine court rejected both arguments, finding that the dam in question did produce discharges under the meaning of the CWA, and that it was appropriate for the state regulators to impose any conditions necessary to ensure compliance with water quality standards.[93]

The Maine Supreme Judicial Court agreed with S.D. Warren's interpretation of the CWA that "an 'addition' is the fundamental characteristic of any discharge."[94] Nevertheless, it ruled against S.D. Warren on the somewhat esoteric theory that the flow of water through a dam constitutes an "addition" because the water briefly comes under private control: "water that has left its natural state and has been subjected to man-made control constitutes an 'addition' upon its return to the same navigable waterway."[95]

3. S.D. Warren *in the U.S. Supreme Court*

S.D. Warren filed a petition for a writ of certiorari with the U.S. Supreme Court on two questions. The first question was one of statutory interpretation: whether water impounded behind a dam and then released constituted a "discharge" under the CWA. The second was a broader federalism question: were the particular certification conditions imposed by the State of Maine so intrusive as to improperly interfere

89. 105 F.E.R.C. at 61,156–57.
90. *Id.* at 61,156.
91. S.D. Warren Co. v. Bd. of Envtl. Prot., 868 A.2d 210 (Me. 2005), *aff'd*, 126 S. Ct. 1843 (2006).
92. *Id.* at 213.
93. *Id.* at 216–18.
94. *Id.* at 215.
95. *Id.* at 217.

with the federal government's exclusive authority to issue hydropower licenses?

The Court granted certiorari only on the first question.[96] On that question, it ruled against S.D. Warren, holding that water released from a dam was a "discharge," and that S.D. Warren must submit to the State of Maine's section 401 certification conditions. In leaving the broader federalism challenge unanswered, the Court left open the question of how far states can go in regulating hydropower under CWA section 401.

a. Do Dams Create "Discharges"?

In an unanimous opinion authored by Justice Souter,[97] the Court held that "a dam does raise a potential for a discharge," and that therefore "state approval is needed."[98] The Court thus upheld the result reached by the Maine Supreme Judicial Court's ruling, although it did not adopt that court's rationale.[99] Instead, the Supreme Court embarked on its own close reading of the CWA. That reading led it to conclude that the CWA term "discharge," triggering section 401 certification, does not require any addition of something new to the water. Justice Souter wrote that since "discharge" is not a term of art, nor is it explicitly defined in the statute, it should be construed in accordance with its natural meaning. He gleaned this meaning from Webster's New International Dictionary: "[t]o emit; to give outlet to; to pour forth."[100] Therefore, water issuing from a dam is a discharge.

In support of a contrary reading of the word "discharge," the petitioner pointed to other language in the statute it said indicated that a "discharge" required the addition of something foreign to the water. First, the petitioner noted that the CWA defines the phrases "discharge of a pollutant" and "discharge of pollutants" as meaning "any addition of any pollutant to navigable waters from any point source."[101] The petitioner argued that because "discharge of pollutants" requires addition

96. Petition for Writ of Certiorari, *supra* note 77.

97. Justice Scalia declined to join one section of the opinion, dealing with legislative history. S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843, 1851 (2006).

98. *Id.* at 1846.

99. The U.S. Supreme Court in effect decided that the Maine court reached the right outcome for the wrong reasons. The Maine court had accepted the premise that a "discharge" under the CWA required an "addition" to the water, but had propounded a novel theory that water impounded by and then released from a dam became a discharge as it passed into and out of private control. *See* 126 S. Ct. at 1849. The Supreme Court rejected this line of reasoning. *See id.* ("We disagree that an addition is fundamental to any discharge, nor can we agree that one can denationalize national waters by exerting private control over them.").

100. *Id.* at 1847.

101. 33 U.S.C. § 1362(12) (2006).

of something to water, the term "discharge" standing alone must also require the addition of something.[102]

Second, the petitioner noted that the CWA states that the term "discharge," "when used without qualification includes a discharge of a pollutant, and a discharge of pollutants."[103] According to its argument, one should apply a canon of statutory interpretation to this phrase, *noscitur a sociis* ("a word is known by the company it keeps"), to conclude that, like the other terms in this list, the term "discharge" means a discharge *of* something.

The Court rejected this application of the particular canon of statutory interpretation,[104] observing that "uncritical use of interpretive rules is especially risky in making sense of a complicated statute like the Clean Water Act, where technical definitions are worked out with great effort in the legislative process."[105] The problem with S.D. Warren's argument, said the Court, was that "it purports to extrapolate a common feature from what amounts to a single item (discharge of a pollutant plus the plural variant involving more than one pollutant). . . . *[N]oscitur a sociis* is no help absent some sort of gathering with a common feature to extrapolate."[106] The Court felt that the natural interpretation of these contested phrases was that the term "discharge" was broader than, but included, "discharge of a pollutant."

b. Distinguishing Miccosukee

A key element of petitioner S.D. Warren's argument was its reliance on the Supreme Court's 2004 ruling in *South Florida Water Management District v. Miccosukee Tribe of Indians*. According to S.D. Warren, *Miccosukee* established that "a discharge requires the addition of water from a distinct body of water." [107] Since the water released from a dam comes from the same river that it is released into, S.D. Warren argued, under *Miccosukee* it should not be considered a discharge. The Supreme Court disagreed.

In *Miccosukee*, the Court ruled on the question of whether the CWA required a NPDES permit for a pump that moved polluted water from a canal on one side of a levee to a wetland on the other side.[108] The water district argued that its pump was not a point source because it did not add

102. S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843, 1849 (2006).
103. *Id.*
104. *Id.*
105. *Id.* at 1849–50.
106. *Id.* at 1849.
107. Petition for Writ of Certiorari, *supra* note 77, at i.
108. S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95 (2004).

the pollutants to the water. The federal government filed an amicus brief in *Miccosukee*, arguing for a "unitary waters" theory under which all the waters of the United States are viewed as a whole and moving water from one water body to another would never be considered an addition of a pollutant.[109]

The *Miccosukee* Court did not rule on the "unitary waters" theory, but held that if two areas were in fact not "meaningfully distinct water bodies," then transfer of water from one to the other could not "constitute an 'addition' of pollutants" and would not require an NPDES permit.[110] The *Miccosukee* court observed that "[i]f one takes a ladle of soup from a pot, lifts it above the pot, and pours it back into the pot, one has not 'added' soup or anything else to the pot."[111] S.D. Warren argued that if the water on either side of a dam did not belong to meaningfully distinct water bodies, then the movement of the water through the dam did not constitute an addition of anything. If nothing was added, said S.D. Warren's petition, there was no discharge under the CWA and no need for section 401 certification.[112]

The Supreme Court held that this application of *Miccosukee* conflated the notion of a "discharge" with a "discharge of pollutants."[113] *Miccosukee* held that pumping water between a canal and an impoundment produced no "discharge of a pollutant," and therefore did not require an NPDES permit under section 402 of the CWA.[114] The *S.D. Warren* opinion acknowledged that transferring water from one part of the same river to another might not constitute a "discharge of pollutants" under the *Miccosukee* standard, since a "discharge of a pollutant" requires the addition of a pollutant to a navigable water. But because a "discharge" doesn't require an addition, the release of water from a dam can still be a "discharge" and trigger section 401.[115]

c. The Court Considers the Broader Intent of the Clean Water Act

The Court also considered the legislative history and intent of the CWA. While this portion of the opinion is in part a continuation of the Court's exegesis of the word "discharge," it is noteworthy for the light it sheds on the Court's broader views on the CWA and environmental

109. *Id.* at 105–06.
110. *Id.* at 110–12.
111. *Id.* at 109–10 (quoting Catskill Mountains Chapter of Trout Unlimited, Inc. v. New York, 273 F.3d 481, 492 (2d Cir. 2001)).
112. Petition for Writ of Certiorari, *supra* note 77, at 12.
113. S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843, 1850 n.6 (2006).
114. *Id.* at 1850.
115. *Id.*

federalism. The Court acknowledges that in enacting the CWA, Congress conceived of water pollution in broad terms, and recognized the state interest in regulating it.

The Court turned its attention to the legislative intent behind the CWA because S.D. Warren argued that the Clean Water Act had been carelessly drafted. The key definition reads:

> The term "discharge" when used without qualification includes a discharge of a pollutant, and a discharge of pollutants.[116]

S.D. Warren argued that the use of the word "includes" was mere carelessness on the part of Congress, left in accidentally after the Act was amended to delete a reference to thermal discharges in the definition.[117] The Court disagreed, noting that "when Congress fine-tunes its statutory definitions, it tends to do so with a purpose in mind."[118]

Perhaps of more import, the Court looked for guidance to the general congressional intent behind the CWA. It found that Congress had conceived of the problem of water pollution very broadly, and that states would play a central role. The Court noted that Congress passed the Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[119] The Court also observed that the Act treats the concept of "pollution" to include not merely the addition of pollutants to water, but more broadly to mean "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water."[120] Accordingly, the opinion concluded that "[t]he alteration of water quality . . . is a risk inherent in limiting river flow and releasing water through turbines."[121] The Court noted that dams can cause changes in the movement, flow and circulation of a river, impact oxygen levels, and have adverse effects on aquatic organisms, and held that "[c]hanges in the river like these fall within a State's legitimate legislative business, and the Clean Water Act provides for a system that respects the States' concerns."[122]

116. 33 U.S.C. § 1362(16) (2006).

117. *S.D. Warren Co.*, 126 S. Ct. at 1851.

118. *Id.* at 1852. The Court also noted that the legislative record actually undermined Warren's reading of the language: "[T]he only thing the legislative history cited by Warren demonstrates is the congressional rejection of language that would have created a short series of terms with a common implication of an addition" (i.e. the addition of pollutants, of heat, etc.). *Id.*

119. *Id.* (*quoting* 33 U.S.C. § 1251(a)).

120. *Id.* at 1853 (*quoting* 33 U.S.C. § 1362(19)).

121. *Id.*

122. *Id.*

d. Federalism and the Tension Between the CWA and FPA

The *S.D. Warren* case highlighted the tension between the centralization of federal power embodied in the FPA and the cooperative federalism of the CWA. In passing the FPA in 1920, Congress created a comprehensive federal system of hydropower regulation and named the federal government the sole licensing authority. Half a century later, in the CWA, Congress created a cooperative federalism scheme that made state and federal governments partners in controlling water pollution. In its certiorari petition, S.D. Warren asked the Court to resolve this tension, asking whether the state of Maine's "expansive application of Section 401 conflict[s] with the Federal Energy Regulatory Commission's comprehensive licensing authority over hydroelectric generating projects under the Federal Power Act?"[123]

In particular, S.D. Warren objected strenuously to "reopener" clauses that would reserve the authority of the state to revisit the certification and impose additional or different requirements in the future.[124] S.D. Warren argued that Maine's "broad interpretation of Section 401 effectively allows the State of Maine to displace FERC as the exclusive authority that licenses hydropower projects."[125] Allowing reopener clauses in a section 401 certification "effectively opens the door for state control of FERC relicensing proceedings and allows for perpetual state involvement even after a license is issued."[126] Supporters of S.D. Warren asserted in an amicus brief that the section 401 process nationwide had improperly "evolved from a focused review of compliance with state water quality standards to a much more expansive parallel state licensing or permitting scheme."[127]

The Supreme Court declined to address this federalism question, leaving us without a definitive statement of the boundaries between the state role under the CWA and the federal licensing authority under the FPA.[128] The remainder of this Note places this development in a broader legal and historical context, and then addresses some of the implications for the future.

123. Petition for Writ of Certiorari, *supra* note 77, at i.

124. *Id.* at 3.

125. *Id.* at 18.

126. *Id.*

127. Brief for Edison Electric Institute, *supra* note 19, at 10.

128. Nor was this the first time it passed up an opportunity to set explicit boundaries on the state power to wield section 401 certification conditions in the hydropower context. *See* PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700 (1994) (discussed *infra* Part III.A.2.).

III. FEDERALISM AND THE STATE ROLE IN HYDROPOWER REGULATION AFTER *S.D. WARREN*

A. Federalism in the Rulings prior to S.D. Warren

The precedents leading up to *S.D. Warren* divide into two periods. In the first, the Court determined that federal law preempted state authority over hydropower projects, and that Congressional intent would be thwarted by any ability of states to regulate hydropower projects. In the second period, however, federal preeminence eroded as environmental concerns ascended in importance, and the Court recognized that Congress intended for states to have a strong voice in hydropower under CWA section 401.

1. First Iowa*,* California v. FERC, *and Federal Preeminence*

In the 1946 *First Iowa Hydro-Electric Cooperative v. Federal Power Commission* ruling, the Supreme Court held that federal authority over hydropower projects preempted state regulation: "There is no doubt that the United States possesses the power to control the erection of structures in navigable waters."[129] As a result, a state permitting program was invalid if it amounted to a veto over federal approval of a hydropower project.[130]

As noted earlier, the Court's rationale was that Congress had intended through the FPA to establish a "complete scheme of national regulation which would promote the comprehensive development of the water resources of the Nation."[131] The *First Iowa* ruling occurred in an era of aggressive hydropower development, when hydropower played a proportionately larger role in the nation's generation of electricity than it does today.[132] Requiring a project to acquire both state and federal permits would "subordinate to the control of the State the 'comprehensive' planning which the Act provides."[133] Although section 27 of the FPA contains language disclaiming any intent to "interfere with the laws of the respective States relating to the control, appropriation,

129. 328 U.S. 152, 176, 182 (1946).

130. *Id.* at 164. At issue in *First Iowa* was the denial of a hydropower license by the Federal Power Commission (the predecessor of FERC) because the applicant had failed to acquire a state permit granting permission for the project.

131. *Id.* at 180.

132. *See* JOSEPH P. TOMAIN & RICHARD D. CUDAHY, ENERGY LAW IN A NUTSHELL 334 (2004).

133. *First Iowa Hydro-Electric Coop.*, 328 U.S. at 164.

use, or distribution of water,"[134] the *First Iowa* Court ruled that this provision applied only to state control over proprietary water rights.[135]

The Court reaffirmed *First Iowa* half a century later in *California v. FERC* (the *Rock Creek* decision).[136] The California State Water Resources Control Board had used the water rights permitting process to impose higher instream flow requirements on a hydroelectric dam than required by FERC, in order to protect fish.[137] The Court held that although the state was entitled to regulate proprietary water rights and to condition such rights on the protection of instream beneficial uses, this authority had to give way when it would "constitute a veto of the project that was approved and licensed by FERC."[138] According to the Court, a state veto power would clash with the "broad and paramount federal regulatory role" established under the FPA, as interpreted by *First Iowa*.[139] In *Sayles Hydro Association v. Maughan*, the Ninth Circuit went a step further, holding that the FPA "occupie[s] the entire field" of hydropower regulation.[140] States were accordingly preempted from imposing any environmental requirements on a FERC licensee, even where the requirements did not conflict with the FERC license.[141]

2. The Pendulum Swings Back to the States in PUD No. 1

Following enactment of the CWA in 1972, tensions had grown between the federal control of hydropower regulation and states' use of section 401 to promote water quality and other environmental goals. States asserted their power under CWA section 401 to place conditions and restrictions on hydropower licenses.[142] Hydropower advocates complained that states were exceeding their authority and violating the preemptive authority of FERC by exercising the kind of de facto veto over hydropower projects that *First Iowa* and *California v. FERC* had

134. Section 27 of the FPA reads: "Nothing herein contained shall be construed as affecting or intending to affect or in any way to interfere with the laws of the respective States relating to the control, appropriation, use, or distribution of water used in irrigation or for municipal or other uses, or any vested right acquired therein." 16 U.S.C. § 821 (2006).

135. First Iowa Hydro-Electric Coop. v. Fed. Power Comm'n, 328 U.S. 152, 175–76 (1946).

136. 495 U.S. 490 (1990).

137. *Id.*

138. *Id.* at 506 (quoting California *ex rel.* State Water Resources Bd. v. Fed. Energy Regulatory Comm'n, 877 F.2d 743, 749 (1989)).

139. *Id.* at 499.

140. 985 F.2d 451, 453 (9th Cir. 1993).

141. The State Water Resources Control Board had denied a water rights permit for the project due to concerns about impacts on aesthetics, archaeology, sport fishing, and cultural resources, as well as concerns about the project's economic efficiency. The main legal issue was whether the licensee had to establish "ripeness" for an appeal by showing an actual conflict between the state and federal requirements. *Id.*

142. *See* Bogardus, *supra* note 5.

purported to prohibit.[143] They further objected that states were imposing conditions and restrictions that were not linked directly to mitigating effects of the dams or the dams' discharges, or that were not even directly related to water quality.[144]

In 1994, the Supreme Court did an apparent about-face in *PUD No. 1 of Jefferson County v. Washington Department of Ecology*. In contrast with *First Iowa* and *California v. FERC*, which had upheld federal preemption in the area of hydropower licensing, the Court now held that states could exercise a virtual veto power through the use of CWA section 401. *PUD No. 1* concerned a proposal by the city of Tacoma, Washington and a local utility district to build a hydroelectric project on the Dosewallips River.[145] The project would divert water from a 1.2 mile bypass reach.[146] The state's CWA section 401 certification required seasonally variable minimum stream flows to protect salmon and steelhead.[147] This was the same kind of requirement that had been ruled invalid in *California v. FERC* when imposed on a dam operator as a condition of a water rights permit.[148]

The petitioners contended that minimum stream flow requirements were not sufficiently related to the specific discharges that triggered the section 401 process.[149] However, the Court read section 401 broadly, finding that the state's water quality limitations need not be specifically tied to a "discharge." Rather, the statute authorized "additional conditions and limitations on the activity as a whole once the threshold condition, the existence of a discharge, is satisfied."[150]

Furthermore, the Court rejected the petitioners' argument that the CWA section 401 certification could only be used to enforce numeric water quality criteria regulating pollutants. The Court held that since water quality standards consist of both criteria and designated uses, the authority of section 401 enables states to protect both.[151] Even if a given water quality standard was expressed in "broad narrative terms" or was "open-ended," it was a legitimate subject of section 401 restrictions.[152] The Court even acknowledged that section 401 restrictions could encompass "aesthetic" concerns.[153] However, the *PUD No. 1* Court

143. This point of view is forcefully argued in Bogardus, *id.*
144. *See id.*
145. PUD. No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700, 703 (1994).
146. *Id.* at 708–09.
147. *Id.* at 709.
148. California v. Fed. Energy Regulatory Comm'n, 495 U.S. 490 (1990).
149. *PUD No. 1 of Jefferson County*, 511 U.S. at 711.
150. *Id.* at 711–12.
151. *Id.* at 714–16.
152. *Id.* at 715–16.
153. *Id.* at 716.

specifically declined to clearly draw the boundaries of the section 401 authority. It noted that section 401(d) empowered states to condition certification on "any other appropriate requirement of State law," but stated, "We do not speculate on what additional state laws, if any, might be incorporated by this language."[154]

First Iowa and *California v. FERC* prohibited states from exercising any veto power over federal hydropower licensing. *PUD No. 1* declined to limit state section 401 certification decisions even when these decisions seemed to amount to a form of veto power. The Court in effect acknowledged that times had changed since the FPA, most relevantly with the enactment of the CWA, and even if CWA section 401 sometimes amounted to a virtual veto power for states, the Court was not going to block it.

The Court was no doubt aware of this tension between *PUD No. 1* and its earlier decisions. In his dissent in *PUD No. 1*, Justice Thomas complained that the majority ruling left "no meaningful limitation on a State's authority under section 401 to impose conditions on certification."[155] He believed that certification conditions should be limited to those related directly to dealing with the effects of a "discharge," and that they should be restricted to enforcing numeric, measurable water quality criteria.[156] For its part, the majority in *PUD No. 1* dodged the federalism issue by noting that the state-federal conflict it presented was only "hypothetical," given that FERC had neither yet approved nor denied the license in question.[157]

B. The Implications of S.D. Warren *for Federalism in Hydropower Regulation*

S.D. Warren can be seen as a failed last-ditch effort to undo the result in *PUD No. 1*. If the Court had agreed that dam releases were not "discharges," then section 401 wouldn't apply to dam licensing, and the decade-old status quo of *PUD No. 1* would have been abruptly undone. This would have turned back the clock on the federal-state relationship to the days of *First Iowa*, when federal regulators could disregard any state-imposed restrictions on hydropower licenses as an impermissible state "veto" over the project. Accordingly, an official with the Maine BEP predicted that *S.D. Warren* would be "the most important hydropower

154. *Id.* at 713.
155. *Id.* at 724 (Thomas, J., dissenting).
156. *Id.* at 727, 731.
157. *Id.* at 722.

case in 50 years."[158] This prediction apparently anticipated that a conservative Supreme Court would rule for S.D. Warren and eliminate the ability of states to participate in hydropower licensing through section 401. Instead, the ruling that actually occurred left in place the status quo created in 1994 by *PUD No. 1*.

When the petitioner went to the Supreme Court with its statutory interpretation argument, it also had a Plan B. If S.D. Warren could not take section 401 out of the picture entirely, it might resurrect the federalism issue to argue that the Court should place limits on the states' scope of action under section 401. After all, Justice Thomas's dissent had argued that the Court should place "meaningful limitation[s]" on the states' section 401 power, and the *PUD No. 1* majority had not explicitly rejected this position. This section explores where the federal-state balance of power stands after the *S.D. Warren* ruling.

1. What S.D. Warren *Was Saying When It Didn't Talk about Federalism*

The Justices did not grant certiorari on the federalism question, preferring to resolve the case on the narrower, formalistic grounds (the meaning of the word "discharge.") How should we interpret this silence? After *PUD No. 1*, one might have speculated that the Court was reserving the federalism issue for another day or another case. But it is difficult to maintain this view after *S.D. Warren*. If the Court had been waiting for a good opportunity to place limits on the section 401 authority, *S.D. Warren* was that opportunity. The state of Maine's challenged actions represented an aggressive assertion of section 401 authority. Maine not only imposed section 401 certification conditions to protect the physical, chemical, and biological characteristics of the affected river, but also demanded improvements in recreational infrastructure that one might well argue are only tangentially related to water quality.[159] In addition, Maine sought reopener clauses so that it could continue to assert regulatory authority even after the relicensing process was finished.[160] Unlike the situation in *PUD No. 1*, this time the Court had before it a final federal action to review, because the license had been issued.[161]

158. Gabriel C. Roth & Clair Windsor, *S.D. Warren Co. v. Maine Bd. of Environmental Protection*, MEDILL NEWS SERVICE, Oct. 11, 2005, http://docket.medill.northwestern.edu/archives/003127.php (last visited Sept. 26, 2007).

159. Order Issuing Subsequent License, 105 F.E.R.C. P 61,013, 61,156–57 (Oct. 2, 2003) (S.D. Warren Co., Project Nos. 2897-003, 2932-003, 2941-002, 2931-002, 2942-005).

160. *See id.* at 61,156.

161. *See id.* at 61,133.

If the Supreme Court declined to consider the federalism question in *S.D. Warren*, it is difficult to believe that it will do so in the foreseeable future. Thus, *S.D. Warren* can be read as a de facto recognition of a very broad and flexible scope of state action under CWA section 401. Why then, didn't the Court actually grant certiorari on the federalism question in order to rule against the petitioner? A possible explanation is that the Justices felt they couldn't rule in favor of the petitioner on the federalism question, but were actually rather sympathetic to S.D. Warren's anxiety about intrusive state section 401 restrictions. In that position, the Justices might have preferred to leave some ambiguity and not take the federalism question head-on.

The Justices' sympathy to the petitioner's worry about federalism is evident in the oral arguments. Several of the Justices showed concern about how far states might go under an untrammeled use of section 401. Justice Breyer wanted to know whether EPA or anyone else would have authority to block a state that wanted to use section 401 certification to impose "a nutty water quality standard" such as, for example, "We never build a dam in our State, no matter what." [162] He also wondered whether states were free to impose a "totally bizarre Clean Water Act standard."[163] Justice Souter similarly wondered whether "a State could not, in effect, eliminate all hydropower . . . development from its rivers," and inquired of Maine BEP's counsel, "You don't think there would be any conflict between the Federal policy embodied in the Power Act and in the State law?"[164] Justice Alito wondered, "Do you think that's something that Congress intended when they adopted this, to allow a State to rule out hydroelectric power?"[165] Chief Justice Roberts, too, inquired whether a state could effectively ban hydropower via CWA section 401.[166]

Nevertheless, it would have been difficult for the Court to impose limits on the states' authority under section 401 without running up against the expansive interpretation of that power the Court upheld twelve years earlier in *PUD No. 1.* The Court's eagerness to do so would have also been diminished by the fact that the U.S. government apparently supports the current state-federal balance of power reflected in *PUD No. 1* (and now reinforced by *S.D. Warren*). Justice Roberts was told as much when he inquired about the position of FERC during oral

162. Transcript of Oral Arguments at 21–22, S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006) (No. 04-1527), 2006 U.S. TRANS LEXIS 10.

163. *Id.* at 42.

164. *Id.* at 41.

165. *Id.* at 40.

166. *Id.* at 53.

arguments.[167] The U.S. government had filed an *amicus* brief in *S.D. Warren* arguing in support of the State of Maine's position on the interpretation of the CWA.[168]

For the Court to roll back the section 401 power would have also required taking a rather blinkered view of the purposes of the CWA and the shift in national priorities that occurred between the passage of the FPA and the present day. The 1920 FPA was enacted in an era of aggressive dam building and hydropower development. Congress federalized the licensing of hydroelectric dams in the FPA in order to assure exploitation of this natural resource for the public benefit. However, we are now in an era of dam decommissioning more than dam building.[169] Since the 1940s, the importance of hydropower to the nation's economy has steadily diminished.[170] At the same time, the second half of the twentieth century has been marked by a growing awareness of the environmental effects of dams and by the desire to protect the environmental, aesthetic, and recreational benefits of rivers.[171] In 1968, Congress passed the National Wild and Scenic Rivers Act,[172] which set aside designated river segments to be preserved in their free-flowing condition. In 1969, Congress passed the National Environmental Policy Act (NEPA),[173] requiring the federal government to engage in extensive environmental impact review of its decisions, including hydropower licensing. In 1972, Congress enacted the Clean Water Act.

FERC's exclusive role as the authority over hydropower began to erode in 1984. That year the Supreme Court ruled in *Escondido Mutual Water Company v. La Jolla Band of Mission Indians* that federal land management agencies could impose mandatory restrictions on FERC hydropower licenses.[174] The 1986 Electric Consumers Protection Act

167. *Id.* at 53–54.

168. Brief for the United States as Amicus Curiae Supporting Respondent, S.D. Warren Co. v. Me. Bd. of Envtl. Prot., 126 S. Ct. 1843 (2006) (No. 04-1527), 2006 U.S. S. Ct. Briefs LEXIS 9; Transcript of Oral Arguments, *supra* note 162, at 53.

169. According to the International Rivers Network, an organization that tracks dam removals, about 500 dams have been removed in the United States. The trend is "accelerating," with 177 dams removed in the last decade. *See* International Rivers Network, Reviving the World's Rivers: Dam Removal, http://www.irn.org/revival/decom/index.php?id=brochure/rrpt2.html (last visited Sept. 27, 2007).

170. *See* TOMAIN & CUDAHY, *supra* note 132, at 344 ("In the 1940s and 1950s, hydropower provided 40% of the nation's electric energy. By the 1990s, that amount has dropped to 6% of the country's electricity and approximately 4% of all energy.")

171. Richardson, *supra* note 32, at 507–08.

172. Wild and Scenic Rivers Act, Pub. L. 90-542, 82 Stat. 906 (1968), codified at 16 U.S.C. §§ 1271–1287 (2006).

173. 42 U.S.C. §§ 4321–4347.

174. Escondido Mut. Water Co. v. La Jolla Band of Mission Indians, 466 U.S. 765 (1984). Section 4(e) of the FPA allows federal land management agencies to recommend conditions on FERC licenses to protect the designated purposes of federal reserved lands (such as national

required FERC to give equal consideration in relicensing procedures to energy conservation, fish and wildlife preservation, recreational opportunities, energy conservation, and protection of environmental quality. It required FERC to base fish and wildlife protection on recommendations from federal and state fish and wildlife agencies.[175]

The Court does not cite this history in its ruling, but as noted earlier, the *S.D. Warren* opinion does cite the broad legislative intent language of the CWA. It makes note of the Act's sweeping definition of pollution, and also notes the role the CWA reserves for the states in addressing pollution. While the outcome of *S.D. Warren* is hard to reconcile with *First Iowa's* preemptive view of federal authority, it is consistent with the broad changes in national priorities expressed by Congress since the time of the original passage of the FPA.

2. Who Will Resolve Future Disputes over Application of Section 401?

None of the above discussion should be taken to mean there will no longer be disputes about the proper scope of state authority under section 401. Hydropower licensees and their allies often believe that states go too far. Critics contend that states have abused the CWA section 401 process by imposing requirements that seem remotely, if at all, related to water quality. As one critic put it, "States have used the certification process as a device to extract improper concessions from license applicants." [176]

While hydropower licensees may continue to challenge these state-imposed requirements, they will likely find little help from FERC or from federal courts. In 1997, the Second Circuit ruled in *American Rivers, Inc. v. FERC* that FERC had no authority to reject state-imposed certification requirements—its only choices were to incorporate the conditions into the license or else refuse to issue the license if it believed that issuance would violate the public interest.[177] A licensee can challenge a state's section 401 requirements in a court of appropriate jurisdiction.[178] Where, as often will be the case, the challenged certification conditions derive from water quality standards, federal courts will generally view such standards as a product of state law and the challenge will have to be pursued in state court.[179] FERC itself has come to endorse this view.[180]

forest, Indian reservations, and military reservations). The Supreme Court ruled in *Escondido* that such conditions were mandatory.

175. *See* FED. ENERGY REGULATORY COMM'N, *supra* note 20.

176. Bogardus, *supra* note 5, at 43.

177. American Rivers, Inc. v. Fed. Energy Regulatory Comm'n, 129 F. 3d 99 (2d Cir. 1997).

178. *Id.* at 112.

179. It appears that courts view state court as the proper forum because the conditions imposed by a state in a section 401 certification are based in state law, and a challenger would have to show that state law was applied inappropriately. *See, e.g.*, Roosevelt Campobello Int'l

As noted already, a broader facial challenge to the legitimacy of section 401 based on FPA preemption is unlikely to be heard in federal court. The Supreme Court in *PUD No. 1* declined to "speculate on what . . . state laws" would be appropriate for incorporation into section 401 certification conditions,[181] and the *S.D. Warren* Court upheld similar conditions despite the petitioner's claim that they violated the FPA.

How will state courts view challenges to section 401 conditions? The Supreme Court has indicated that states have broad latitude under section 401, and state courts have reached a similar conclusion in particular cases. For instance, state courts have upheld certification requirements that imposed land use restrictions;[182] stream flow requirements based on aesthetic goals;[183] and recreational improvements such as access improvements for fishermen and boaters.[184] At the same time, state courts may sometimes find that the state has exceeded the proper bounds of state law in applying section 401. For example, one state court rejected a section 401 certification imposed on aesthetic grounds,[185] and another held that a section 401 certificate could not be denied because a project failed to comply with land use ordinances.[186] Another court ruled that a state went too far when it used section 401 to subject a hydropower project to a full-blown State Environmental

Park Comm'n v. EPA, 684 F.2d 1041, 1056 (1st Cir. 1982) ("The courts have consistently agreed with this interpretation, ruling that the proper forum to review the appropriateness of a state's certification is the state court, and that federal courts and agencies are without authority to review the validity of requirements imposed under state law or in a state's certification."); Mobil Oil Corp. v. Kelley, 426 F. Supp. 230, 235 (S.D. Ala. 1976) ("The abstention doctrine stands for the principle that parties seeking initial relief in a federal district court and by-passing available avenues of state relief should be directed to state avenues when the questions involved concern the workings of a state regulatory scheme, state political question, or the interpretation of state agency orders under state law."); *see also* Lake Erie Alliance for Protection of Coastal Corridor v. U.S. Army Corps of Eng'rs, 526 F. Supp. 1063, 1074 (W.D. Pa. 1981), *aff'd*, 707 F.2d 1392 (3d Cir. 1983); U. S. Steel Corp. v. Train, 556 F.2d 822, 837–39 & n.22 (7th Cir. 1977).

180. *See, e.g.*, Order Issuing License, 60 F.E.R.C. P 61,291, 61,990 (1992) (Town of Summersville, W. Va. and City of Manassas, Va.), Project Nos. 10813-000, 10634-000) ("[R]eview of the appropriateness of the [section 401] conditions is within the purview of state courts and not the Commission. The only alternatives available to the Commission are either to issue a license with the conditions included or to deny [the] application . . . .").

181. PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700, 713 (1994).

182. Arnold Irrigation Dist. v. Dep't of Envtl. Quality, 717 P.2d 1274, 1278–79 (Or. Ct. App. 1986).

183. Borgardus, *supra* note 5, at 75 (citing Georgia Pacific Co. v. Vt. Dep't of Envtl. Conservation, 35 E.R.C. 2046, 2050–51 (Vt. Super. Ct. 1991), *aff'd*, 628 A.2d 944 (Vt. 1992)).

184. Order Issuing Subsequent License, 105 F.E.R.C. P 61,013, 61,156–57 (Oct. 2, 2003) (S.D. Warren Co., Project Nos. 2897-003, 2932-003, 2941-002, 2931-002, 2942-005).

185. Summit Hydropower v. Comm'r of Envtl. Protection, No. CV91 050 26 43, 1992 Conn. Super. LEXIS 2177, at *28–29 (Conn. Super. Ct. July 20, 1992).

186. *Arnold Irrigation Dist.*, 717 P.2d at 1276.

Quality Review Act process.[187] At least one state court has overturned reopener clauses under which the state reserved the authority to revisit its own certification later on if desired results are not achieved.[188]

Proactive state governments would likely try to coordinate their use of section 401 with a legislative strategy. That is, the state's political leaders would decide how they want to influence hydropower development in their state. They would then take the necessary legislative and administrative actions to ensure that these policies are reflected in their water quality standards or other related state laws. There would be legislative or administrative findings indicating how certain kinds of restrictions on hydroelectric dams may be necessary to achieve these goals. With this process, there would be little room to question the legitimacy of requirements inserted into section 401 certifications that reflect state policies.

C. States Could Use Section 401 to Implement Adaptive Management

States could become more proactive in their use of section 401 through imposition of adaptive management regimes on hydropower licensees. Adaptive management would be accomplished through use of section 401 to reserve the right to continued involvement in the regulation of dam operations, mitigation, and monitoring *after* the license has been issued.

The petitioners in *S.D. Warren* worried that an adverse ruling by the Supreme Court would "effectively [open] the door for state control of FERC relicensing proceedings and allow[] for perpetual state involvement even after a license is issued."[189] Nevertheless, a strong argument can be made that the precepts of sound natural resources management dictate that states should seek just such "perpetual" involvement in order to apply adaptive management to the attainment and protection of state water quality standards.

The concept of adaptive management of natural resources originated in the 1970s and has become widely accepted among ecologists and environmental managers as a desired, albeit difficult to implement approach to natural resource management.[190] Ecosystems are inherently

187. Fourth Branch Assocs. v. Dep't of Envtl. Conservation, 550 N.Y.S.2d 769 (N.Y. Sup. Ct. 1989).

188. Commonwealth Power Co. v. Dep't of Natural Res., Nos. 204399 & 210844, 2000 Mich. App. LEXIS 2465 (Mich. Ct. App. Mar. 21, 2000).

189. Petition for Writ of Certiorari, *supra* note 77, at 18.

190. Barry L. Johnson, *Adaptive Management—Scientifically Sound, Socially Challenged?*, 3 CONSERVATION ECOLOGY 1:10 (1999), *available at* http://www.ecologyandsociety.org/vol3/iss1/art10/.

complex and constantly changing. Adaptive management is intended to allow resource managers to respond to changing conditions and new information. It was defined by one of its early proponents as a "structured process of 'learning by doing'"[191] (or, as another expert described it, "implementing policies as experiments"[192]). The U.S. Fish and Wildlife Service routinely requires that applicants seeking permits for incidental take of threatened or endangered species implement monitoring and adaptive management plans as part of the Habitat Conservation Plan (HCP) process.[193]

Watersheds are complex ecosystems that ideally would be managed adaptively. The effectiveness of measures to mitigate or control the effects of flow timing, migration barriers, water temperature, and other dam impacts on biota are often uncertain. To take one prominent example, the 1995 Environmental Impact Statement (EIS) for the Glen Canyon Dam in Arizona found that many uncertainties existed regarding downstream impacts of water releases from the dam, including effects on sediment, fish, vegetation, wildlife and habitat, endangered species, cultural resources, air quality, recreation, hydropower, and aesthetics. The EIS accordingly proposed an adaptive management process whereby the effects of dam operations would be monitored, assessed, and, if necessary, adjusted over time.[194] The U.S. Bureau of Reclamation describes the Glen Canyon Dam adaptive management program as "a structured, long-term program of experimentation (including dam operations, potential modifications to Glen Canyon Dam intake structures, and other potential management actions, such as removal of non-native fish species)."[195]

The FERC licensing process is not well suited to such adaptive management approaches if licensing and environmental review are simply a one-time prospective review. From an environmental point of view, it is not likely that one can set the optimal operation of a dam for

191. Carl Walters, *Challenges in Adaptive Management of Riparian and Coastal Ecosystems*, 1 CONSERVATION ECOLOGY 2:1 (1997), *available at* http://www.ecologyandsociety.org/vol1/iss2/art1/.

192. Kai N. Lee, *Appraising Adaptive Management*, 3 CONSERVATION ECOLOGY 2:3 (1999), *available at* http://www.ecologyandsociety.org/vol3/iss2/art3/.

193. *See* Notice of Availability of a Draft Addendum to the Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process, 64 Fed. Reg. 11,485 (Mar. 9, 1999). For a critique of the Service's approach to adaptive management, see, for example, Holly Doremus, *Adaptive Management, the Endangered Species Act, and the Institutional Challenges of "New Age" Environmental Protection*, 41 WASHBURN L.J. 50 (2001).

194. *See* U.S. BUREAU OF RECLAMATION, GLEN CANYON DAM LONG-TERM EXPERIMENTAL PLAN (2007), http://www.usbr.gov/uc/rm/gcdltep/index.html. It should be noted that the Glen Canyon Dam is a federal reclamation project, not a FERC-licensed dam.

195. *Id.*

the next thirty to fifty years. The health of a watershed is affected by the cumulative impacts of a wide variety of human activities, and these human activities inevitably change over time.[196] Environmental conditions also change, whether from periodic droughts or long-term shifts such as global warming.[197] A fixed set of license conditions that remain static for thirty to fifty years would also constrain the ability to learn from experience and improve the state of scientific knowledge regarding the effects of the dam and the effectiveness of mitigation measures.

While FERC likely has the authority to impose adaptive management requirements,[198] states themselves are likely to want to play an active role in adaptive management, and it is an open question to what extent CWA section 401 certification allows them to do so. It might be difficult to determine where such certification requirements become a state intrusion into the federal authority to regulate hydropower (a slippery slope that, as discussed above, Justice Thomas warned against in his dissent in *PUD No. 1*).

If, as the courts have held, reopener clauses are permissible, then a full-blown adaptive management program would seemingly be permissible as well. The state could condition certification on the applicant setting up the institutional arrangements and funding for ongoing monitoring and studies. The certification requirements could define in advance the circumstances under which the results of these efforts would trigger reopening of the certification (for example, if fish surveys showed populations dropping below a critical level or key water quality objectives were not being met).

However, some state courts might balk at state certifications requiring the applicants to continuously monitor, study, and improve their mitigation measures, and that reserve the state's right to reconsider and change the requirements over time in response to hypothetical contingencies. At some point, such conditions could become so open-ended that they would constitute reservation of an ongoing state power to regulate the project after the license has been issued—the "perpetual state involvement" decried by the petitioners in *S.D. Warren*. In

196. *See* Sawyer, *supra* note 10, at 975–80.

197. The effects of climate change in a particular locale are impossible to predict at present, but are likely to include major changes in patterns of precipitation, snow melt, and river hydrology. *See* CALIFORNIA ENVTL. PROT. AGENCY, CLIMATE ACTION TEAM REPORT TO GOVERNOR SCHWARZENEGGER AND THE LEGISLATURE 28–29 (2006), *available at* http://www.climatechange.ca.gov/climate_action_team/reports/2006-04-03_FINAL_CAT_REPORT.PDF.

198. FERC has the authority to impose monitoring requirements and reopener clauses that are consistent with an adaptive approach. *See* Use of Reserved Authority in Hydropower Licenses to Ameliorate Cumulative Impacts, 59 Fed. Reg. 66,714 (Dec. 28, 1994) (codified at 18 C.F.R. pt. 2).

Commonwealth Power Company v. Department of Natural Resources,[199] the Michigan Department of Natural Resources ordered a hydropower licensee to conduct a fish entrainment[200] and mortality study as a condition of receiving section 401 certification.[201] The Michigan Court of Appeals overruled this requirement, on the grounds that the defendant

> was not *imposing a requirement that it knew would be necessary to protect fish in the river*. . . . [D]efendant did not order that plaintiff comply with certain conditions to ensure that fish kill in the river would be low. Instead, it simply wanted plaintiff to conduct an *exploratory* study regarding the number of fish killed. . . . [D]efendant did not know or did not express what level of fish kill was acceptable or what type of protective measures were necessary to maintain the proper "use" of the particular river for particular species of fish.[202]

On the other hand, the Maine courts upheld (and the Supreme Court declined to review) reopener clauses in *S.D. Warren*. These reopeners required the applicant to conduct monitoring and studies to determine whether the spillage requirements intended to increase aeration (dissolved oxygen) were working. If not, the Maine DEP reserved the power to reopen and modify the terms of the license.[203] The Supreme Court declined to say whether such reopeners exceeded Maine's section 401 authority. Similarly, in *American Rivers*, FERC objected that reopener clauses transgressed its exclusive, preemptive authority to revoke hydroelectric dam licenses.[204] The Second Circuit disagreed, opining that "the FPA has a wide preemptive reach. The CWA, however, has diminished this preemptive reach by expressly requiring the Commission to incorporate into its licenses state-imposed water-quality conditions."[205]

It is therefore natural that some states will use the section 401 process to extend what might otherwise be a one-time, front-loaded environmental review into an ongoing regulatory role lasting many years. To cite one example, the state of California has used section 401 conditions to retain an ongoing management role for a pair of dams on Hat Creek, a tributary of the Pit River in northeastern California. These

199. Commonwealth Power Co. v. Dep't of Natural Res., Nos. 204399 & 210844, 2000 Mich. App. LEXIS 2465 (Mich. Ct. App. Mar. 21, 2000).

200. "Entrainment" refers to fish being caught up in the pumps or other works of a dam or other water project.

201. *Commonwealth Power Co.*, 2000 Mich. App. LEXIS 2465, at *7.

202. *Id.*

203. Order Issuing Subsequent License, 105 F.E.R.C. P 61,013, 61,156 (Oct. 2, 2003) (S.D. Warren Co., Project Nos. 2897-003, 2932-003, 2941-002, 2931-002, 2942-005).

204. American Rivers, Inc. v. Fed. Energy Regulatory Comm'n, 129 F. 3d 99, 111 (2d Cir. 1997).

205. *Id.* (citation omitted).

dams operate in run-of-river mode, like the dams in *S.D. Warren*. Hat Creek has been described as "unquestionably one of the state's most treasured and renowned wild trout recreational fisheries."[206]

The section 401 certification issued by the California State Water Resources Control Board (SWRCB), requires the licensee, Pacific Gas and Electric Company, to operate the project in run-of-river mode, protect beneficial use designations, and avoid releases of various kinds of pollutants. In addition, the licensee must develop and implement several management plans, including:

- A grazing management and fecal coliform monitoring plan unless cattle grazing is terminated;
- An erosion and sediment control plan;
- Instream flow requirements and a gauging program;
- A fish monitoring program; and
- An herbicide use plan.[207]

SWRCB retains the ability to oversee much of the foregoing through adaptive management and reopener clauses. Its certification asserted the right to add or modify the conditions "as appropriate to implement any new or revised water quality standards and implementation plans . . . [and] as appropriate to coordinate the operations of this project with" water quality objectives of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary.[208] With respect to the erosion and sediment control plan, "The plan shall include adaptive management actions that address the control of erosion and sediment entering into Hat Creek or its tributaries."[209] Since adaptive management requires constant, long-term monitoring and the ability to change management measures in response to new information, this clause entails that the state is going to remain an active player in the ongoing management and regulation of this project for many years.

D. Stage is Set for Both Conflict and Compromise

S.D. Warren affirms that the states will continue to have an opportunity to ensure that hydropower relicensing proceedings fully consider the requirements of state-mandated water quality protections. The Supreme Court declined to consider the argument that broad assertions of this state power might conflict with the ostensibly preemptive federal authority affirmed half a century ago in *First Iowa*.

206. Brief of Trout Unlimited, *supra* note 9, at 25.

207. Order Issuing New License, 101 F.E.R.C. P 61,165, 61,664–65, 61,684–85 (Nov. 4, 2002) (Pacific Gas & Electric Co., Project No. 2661-012).

208. *Id.* at 61,684.

209. *Id.* at 61,685.

The Court's silence on that issue, first in *PUD No. 1* and again in *S.D. Warren*, indicates that where section 401 is concerned, the FPA's exclusive federal authority must give way to the CWA's cooperative federalism.

S.D. Warren gives states a green light to use the section 401 authority creatively. Traditionally, the relicensing process has been viewed as a one-off affair where requirements are set prospectively and locked into place for up to fifty years. Given the reality that watersheds should be managed adaptively on a broad temporal and spatial scale, states could craft section 401 requirements that employ liberal reopener clauses to maintain a continuing role, perhaps even a "perpetual" role, in monitoring and management after the license has been issued.

Since some hydropower operators already view the section 401 process as over-intrusive, there will be continuing tension over the appropriate limits on the state role in some hydropower proceedings. Licensees will have to look primarily to state courts for relief. *S.D. Warren* has foreclosed for the foreseeable future any likelihood that a federal appeals court will resolve this tension through sweeping pronouncements about the appropriate state-federal balance of power or by placing clear limitations on the reach of section 401.[210]

On the other hand, the *S.D. Warren* ruling may give some licensees new impetus to seek a collaborative, negotiated approach to relicensing. FERC has attempted a more collaborative approach since the late 1990s in an effort to reduce costs, streamline the regulatory process, reduce controversy, and foster communication and collaboration among licensees, regulators, interest groups, and tribes.[211] Given the costs of prolonged, contentious relicensing battles and the low likelihood they will get relief in the federal courts from assertive state regulators, negotiation may be more effective for licensees than an adversarial approach. Now that *S.D. Warren* has removed any doubt that hydropower licensees face a dual system of state and federal regulation, there are more points of leverage for interest groups and stakeholders to assert themselves, or, in an adversarial proceeding, to cause costly delays. The *S.D. Warren* ruling

210. There might, however, be other federal claims that could be raised. For example, it seems conceivable that a licensee could challenge a license on the grounds that stringent section 401 restrictions give rise to a Fifth Amendment takings claim.

211. *See* INTERAGENCY TASK FORCE TO IMPROVE HYDROELECTRIC LICENSING PROCESSES, JOINT STATEMENT OF COMMITMENT FOR AN IMPROVED HYDROPOWER LICENSING PROCESS (2000), *available at* http://www.ferc.gov/industries/hydropower/indus-act/itf/agree.pdf; *see also* FED. ENERGY REGULATORY COMM'N, *supra* note 20, at 59; Avinash Kar, Note, *Ensuring Durable Environmental Benefits Through a Collaborative Approach to Hydropower Re-licensing: Case Studies*, 11 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 27 (2004); American Whitewater.org, The Relicensing Process (2006), http://www.americanwhitewater.org/content/Wiki/stewardship:relicensing_overview (last visited Oct. 4, 2007).

may thus provide a stronger incentive for licensees to seek an early, negotiated settlement with all the regulators and stakeholders.

Whether the relicensing process is characterized by conflict or collaboration, the *S.D. Warren* ruling makes it clear that FERC's preeminent, preemptive authority over hydropower regulation, announced half a century ago in *First Iowa*, is now mostly theoretical. In practical reality, the states, and through them the local interests of watershed users and other local interests, can play an increasingly active role in the regulation of FERC-licensed hydroelectric dams.