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Water Supply Withdrawals from South Carolina’s Reservoirs: A Comparison of Legal Schemes

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Most of South Carolina’s surface water is stored in man-made reservoirs located on the State’s major rivers. The twelve largest reservoirs hold almost 15 million acre-feet of surface water, covering approximately 444,000 acres of land. Lakes Hartwell, Thurmond, and Russell impound the Savannah River. Lakes Keowee and Jocassee impound the Seneca River. Lakes Murray and Greenwood impound the Saluda River. Lakes Wylie and Wateree impound the Catawba-Wateree River. Lake Marion impounds the Santee River. Lake Moultrie impounds the Cooper River. Lake Monticello is located off of the Broad River.

<table>
<thead>
<tr>
<th>Lake</th>
<th>River</th>
<th>Owner</th>
<th>Surface Area - Acres</th>
<th>Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hartwell</td>
<td>Savannah</td>
<td>USACE</td>
<td>56,000</td>
<td>2,549,000</td>
</tr>
<tr>
<td>Thurmond</td>
<td>Savannah</td>
<td>USACE</td>
<td>70,000</td>
<td>2,510,000</td>
</tr>
<tr>
<td>Murray</td>
<td>Saluda</td>
<td>SC E&amp;G</td>
<td>51,000</td>
<td>2,114,000</td>
</tr>
<tr>
<td>Marion</td>
<td>Santee</td>
<td>Santee Cooper</td>
<td>110,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Moultrie</td>
<td>Cooper</td>
<td>Santee Cooper</td>
<td>60,000</td>
<td>1,211,000</td>
</tr>
<tr>
<td>Jocassee</td>
<td>Seneca</td>
<td>Duke Energy</td>
<td>7,565</td>
<td>1,185,000</td>
</tr>
<tr>
<td>Russell</td>
<td>Savannah</td>
<td>USACE</td>
<td>26,650</td>
<td>1,026,000</td>
</tr>
<tr>
<td>Keowee</td>
<td>Seneca</td>
<td>Duke Energy</td>
<td>18,382</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Monticello</td>
<td>Broad</td>
<td>SC E&amp;G</td>
<td>6,800</td>
<td>431,050</td>
</tr>
<tr>
<td>Wateree</td>
<td>Catawba-Wateree</td>
<td>Duke Energy</td>
<td>13,710</td>
<td>310,000</td>
</tr>
<tr>
<td>Wylie</td>
<td>Catawba-Wateree</td>
<td>Duke Energy</td>
<td>12,455</td>
<td>281,900</td>
</tr>
<tr>
<td>Greenwood</td>
<td>Saluda</td>
<td>Greenwood County</td>
<td>11,400</td>
<td>270,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>443,362</td>
<td>14,287,950</td>
</tr>
</tbody>
</table>


All of these reservoirs are owned or operated by either the United States Army Corps of Engineers (“USACE”) or public electric utilities for the purpose of electric power generation. The USACE reservoirs are operated primarily to generate hydropower. Duke Energy, SCE&G and Santee Cooper use its reservoirs for hydropower purposes as well as a source for cooling water needed for thermoelectric or nuclear power. About 98% of South Carolina’s surface water is used for power generation. Excluding power generation, the remaining water use categories and amount of surface water withdrawn in 2006 is shown below:

<table>
<thead>
<tr>
<th>Year 2006</th>
<th>Surface Water Withdrawn (million gallons)</th>
<th>% of Surface Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquaculture</td>
<td>171.87</td>
<td>.05%</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Golf Courses</strong></td>
<td>9,275.15</td>
<td>2.68%</td>
</tr>
<tr>
<td><strong>Industrial</strong></td>
<td>138,188.07</td>
<td>40.0%</td>
</tr>
<tr>
<td><strong>Irrigation</strong></td>
<td>11,176.64</td>
<td>3.24%</td>
</tr>
<tr>
<td><strong>Mining</strong></td>
<td>498.44</td>
<td>.14%</td>
</tr>
<tr>
<td><strong>Water Supply</strong></td>
<td>186,149.20</td>
<td>53.88%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>345,459.37</td>
<td>100%</td>
</tr>
</tbody>
</table>


Recent events concerning competing uses of the USACE’s Lake Lanier for hydropower and the City of Atlanta’s municipal water supply, and the State of North Carolina’s attempt to takeover reservoirs owned and operated by Alcoa Power Generating, Inc., have raised the issue of competition between hydropower and drinking water supply. In the case of Lake Lanier, the ongoing battle between the States of Georgia, Florida and Alabama over equitable use of the Apalachicola-Chattahoochee-Flint River Basin has centered upon the USACE operation of Lake Lanier, in particular, whether the amount of water withdrawn from Lake Lanier for Atlanta’s water supply needs exceeded the authority of the USACE. In 2009, the United States District Court of the Middle District of Florida concluded that Lake Lanier was constructed primarily for the purposes of hydropower, flood control and navigation, and that the USACE’s reallocation of 22% of Lake Lanier’s storage capacity for water supply purposes was unlawful.¹ In the case of Alcoa’s Yadkin Project located on the Yadkin-Pee Dee River in North Carolina, the State of North Carolina intervened in the Federal Energy Regulatory Commission’s (“FERC”) hydropower relicensing proceedings to seek to takeover the hydropower license from Alcoa.² FERC granted the State of North Carolina’s motion to intervene.³ North Carolina argued that FERC should approve its takeover of Alcoa’s license because Alcoa’s continued use of the State’s water resources was outweighed by the State’s interest in managing water resources for the public benefit, including the assurance of long term water supply for the region. These two events have occurred in different regulatory contexts. This paper briefly explains the law governing water withdrawals from federally-owned reservoirs such as Lake Hartwell, and from reservoirs licensed by FERC, such as Lake Murray.

**Reservoirs Owned by the Federal Government**

Congress authorized the construction and operation of Lakes Thurmond, Hartwell, and Russell for various purposes articulated by statute. Some of these reservoirs’ authorized purposes were adopted pursuant to River and Harbor Acts, Flood Control Acts or Water Resource Development Acts which referred specifically to Thurmond, Hartwell and Russell. In 1944, Congress authorized construction of the Clark Hill reservoir (subsequently renamed as J. Strom Thurmond Lake and Dam) in “substantial accordance” with the Comprehensive Plan for the Savannah published as House Document 657.⁴ The Comprehensive Plan established the

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² *Motion to Intervene Out of Time by the State of North Carolina*, Alcoa Power Generating, Inc., Yadkin Project 2197 (April 1, 2009).
purposes of Clark Hill as hydropower, flood control, and navigation and other purposes. The project purposes were later modified to include recreation and fish and wildlife management.

Under the Flood Control Act of 1950, Congress authorized the construction of Hartwell “for the benefit of navigation and the control of destructive floodwaters and other purposes” … “in accordance with the plans in the respective reports hereinafter designated and subject to the conditions set forth therein.” The Act directed that the Corps construct Lake Hartwell found in the comprehensive plan of the Savannah River Basin, approved in the Act of December 22, 1944. The Russell Lake and Dam (at the time called Trotters Shoals Reservoir) was authorized in 1966 “substantially in accordance with the recommendations of the Chief of Engineers in Senate Document Numbered 52, Eighty-ninth Congress…. This Senate Document recommended construction of the Trotters Shoals reservoir site primarily for hydropower purposes. “Allied purposes served by the creation of [the] reservoir … include water oriented recreational opportunities, a convenient water supply source for the industrial or domestic needs … and incidental flood control benefits to areas in the lower Savannah River Basin.” In 1986, Congress authorized an additional purpose of fish and wildlife mitigation.

Other authorized purposes were created by a statute applicable to all federally owned and operated reservoirs. For example, the Fish and Wildlife Coordination Act required all federal agencies who construct water resource projects to give equal consideration to wildlife conservation as a function of the project. And, the Clean Water Act set far-reaching standards for water quality, which are expressly applicable to all federal water resource projects. Relevant here is the Water Supply Act of 1958.

The Water Supply Act of 1958 established a federal policy “to recognize the primary responsibilities of the States and local interests in developing water supplies for domestic, municipal, industrial, and other purposes and that the Federal Government should participate and cooperate with the States and local interests in developing such water supplies in connection with the construction, maintenance, and operation of Federal navigation, flood control, irrigation, or multiple purpose projects.”

To carry out this policy, the Act authorized the inclusion of storage in any constructed or planned to be constructed reservoir project of the USACE for present or anticipated water supply demand or need for municipal or industrial purposes. Before a project’s existing operations are modified to include water supply provisions, or a project’s construction is

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8 Id. at sec. 204, 64 Stat. 171.
10 Id. at ¶ 9.
13 Id. at sec. 302(b); codified at 43 U.S.C. § 390b(b).
modified to include water supply provisions, state or local government must pay for the cost of providing water supply storage “on the basis that all authorized purposes served by the project shall share equitably in the benefits of multiple purpose construction as determined by the Secretary of the Army …”  

Before construction or modification of any project to include water supply to meet present demand, States or local interests must agree to pay for the cost of such modification.

If a state or local interest contracts for storage for future demands, no more than thirty percent (30%) of the total estimated cost of a reservoir may be allocated to such future use. Further, to obtain water supply allocation for future demands, the state or local interests must “give reasonable assurances, and there is reasonable evidence, that such demands for the use of such storage will be made within a period of time which will permit paying out the costs allocated to water supply within the life of the project.”

When a State or local interest has contracted to pay to the USACE for use of a reservoir for water supply, and these payments are equal to the cost to the Corps for providing storage for water supply, the paying State or local interest has the right to continue use of the reservoir for water supply for as long as the reservoir is in existence and operated by the federal government. This right is available so long as the space designated for water supply is physically available, taking into account the need to equitably reallocate reservoir storage among its authorized purposes due to sedimentation.

If modifications of an existing reservoir to include water supply storage “would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes,” Congress must approve the modification. The USACE’s policy documents indicate that the USCAE may authorize any modification to reallocate up to 15% of usable storage, or 50,000 acre-feet, whichever is less, without congressional approval.

Water supply storage may be accomplished by reallocating storage of water designated for other authorized purposes. However, for reservoirs with multiple purposes, storage used for water supply may not exceed ninety percent of the project’s total economic benefit. If

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15 Id.
16 Id.
18 Id.
20 Id. at 43 U.S.C. § 390c.
22 U.S. Army Corps of Engineers, ER 1105-2-100, 3-32 (April 22, 2000).
23 Id.
reallocation involves major structural or operational changes, Congressional approval is required.\textsuperscript{24}

Under the Water Supply Act, the USACE is only authorized to contract with states or local interests for the storage of water for drinking supply.\textsuperscript{25} The states, and not the USACE possess the authority to control water withdrawals from water supply storage within the USACE reservoirs.\textsuperscript{26}

Out of approximately 330 million acre feet of storage in USACE reservoir projects, about 219 million acre-feet is active storage.\textsuperscript{27} Of this active storage, less than 5\%, or about 9.5 million acre feet is allocated to municipal and industrial water supply. Storage for municipal and industrial water supply “is represented by 235 separate agreements in 117 different reservoir projects.”\textsuperscript{28} Most of these reservoirs are located in the Southwest. In the USACE South Atlantic Region, only 2.3\% of storage space is used for municipal and industrial water supply.

\textbf{Reservoirs Licensed by the Federal Energy Regulatory Commission}

Congress enacted the Federal Power Act (“FPA”) pursuant to its constitutional authority to regulate interstate commerce.\textsuperscript{29} The commerce clause power encompasses regulation of commerce on the waters of the United States.\textsuperscript{30} Congress’ commerce power includes authority to control navigation, as well as flood protection, watershed development, and power generation.\textsuperscript{31}

In response to the piecemeal and restrictive approach of the River and Harbor Acts and other federal laws in existence at the turn of the century, the Federal Power Act, originally enacted in 1920,\textsuperscript{32} was the culmination of efforts by conservationists to secure federal legislation for the promotion of comprehensive development of the nation’s water resources.\textsuperscript{33} The Act was intended to provide “a method by which the water powers of the country, wherever located, can be developed by public or private agencies under conditions which will give the necessary security to the capital invested and at the same time protect and preserve every legitimate public interest.”\textsuperscript{34} President Roosevelt led the effort for the passage of the Federal Power Act as a solution to the existing state of hydropower development:

\textsuperscript{26} Id.
\textsuperscript{28} Id.
\textsuperscript{29} See U.S. Const. Art. I, § 8.
\textsuperscript{31} Id.
\textsuperscript{33} First Iowa Hydro-Electric Coop. v. FPC, 328 U.S. 152, 180 (1946).
\textsuperscript{34} Id. at 181.
Works designed to control our waterways have thus far usually been undertaken for a single purpose, such as the improvement of navigation, the development of power, the irrigation of arid lands, the protection of lowlands from floods, or to supply water for domestic and manufacturing purposes. While the rights of the people to these and similar uses of water must be respected, the time has come for merging local projects and uses of the inland waters in a comprehensive plan designed for the benefit of the entire country. Such a plan should consider and include all the uses to which streams may be put, and should bring together and coordinate the points of view of all users of waters.35

Given the history of the FPA, courts have interpreted the Act as conferring wide discretion upon the Federal Energy Regulatory Commission36 (“FERC”) in licensing and regulating hydropower projects.37 For instance, the FPA grants FERC latitude to impose conditions upon a hydropower license. A licensee is subject to conditions expressly required in the FPA, and also to additional conditions imposed by FERC that are consistent with the provisions of the FPA.38 Additionally, under 16 U.S.C. § 825h, FERC is given the “power to perform any and all acts, and to prescribe, issue, make, amend, and rescind such orders, rules, and regulations as it may find necessary or appropriate to carry out the provisions of [the Federal Power Act].” FERC’s “necessary and appropriate” clause authorizes it to exercise broad discretion, provided that its action conforms to the purposes of the FPA and does not contravene any provisions of the FPA.39 Thus, FERC possesses broad power in carrying out the purposes of the FPA.

The holder of a license issued pursuant to the FPA does not, by virtue of its grant, share FERC’s broad powers over navigable rivers. The grant of a license is a privilege from the sovereign, and such grant is justified only upon its benefit to the public.40 The FPA was enacted for the purpose of comprehensive development of water power, which inures to the benefit of the public.41 FERC makes clear that development and maintenance of reliable power sources is an overriding national interest.42 Equally important, however, is a concern for protecting life, health and property.43 These two national interests are “superior to any competing interests held by the licensee.”44 “The licensee …gets no part of the sovereign power over navigable waters which belong to the Federal government.”45 Instead, a licensee “gets only those powers which are specifically granted in the license, and no more, and they are not only subject to strict

35 Scenic Hudson Preservation Conference v. FPC, 354 F.2d 608, 613 (2nd Cir. 1965)(citing President Roosevelt’s letter appointing the Inland Waterways Commission, 42 Cong.Rec. 6968 (1908)).
36 FERC is the successor to the Federal Power Commission (“FPC”).
39 Niagara Mohawk, at 158.
40 Northern States Power v. FPC, 118 F.2d 141, 144 (1941).
43 Id.
44 Id.
construction, but also to definite limitations prescribed by the [FPA]. Therefore, a licensee must act in strict accordance with its license terms.

Section 10(a)(1) of the FPA (codified at 16 U.S.C. § 803(a)(1)) imposes a duty upon FERC to assure that a hydropower project:

will be best adopted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection, mitigation, and enhancement of fish and wildlife (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes referred to in section 797(e) of this title, [and] if necessary in order to secure such plan the Commission shall have authority to require the modification of any project and of the plans and specifications of the project works before approval.

This “comprehensive development” standard of section 10(a)(1) requires that FERC “protect and preserve every legitimate public interest.” “Legitimate public interest concerns include, among others, resource conservation; water quality control; flood control; fish and wildlife protection; recreation and aesthetic considerations; protection of improvements along reservoir shorelines; drinking water and other domestic municipal and industrial uses; irrigation requirements; navigation; hydraulic coordination; safety and adequacy; and regional power coordination.” Section 10(a)(1) also protects a licensee’s interest in power generation. A project’s provision of electricity to consumers is a factor in the public interest equation. Indeed, in striking a balance among competing interests, FERC seeks to maintain a project’s profitability. FERC has concluded that section 10(a)(1) requires a “comprehensive analysis on the record of all issues relevant to the public interest for the water system where the proposed project is to be located.” Section 10(a)(1) requires consideration of a project’s impact upon an entire river system. FERC’s duty to balance potentially competing interests of power production, fish and wildlife, and municipal use is essentially the heart of the Federal Power Act, imposing upon FERC the mandate to act with a broad view, to consider all uses of a river basin, and ultimately craft license terms that protect multiple interests. The Section 10(a)(1) mandate continues throughout the life of a license.

46 Id.
49 International Paper Co., 110 F.E.R.C. ¶ 62,239, *30 (2005)(in determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, the Commission considers a number of public interest factors, including the economic benefits of project power).
50 State of California v. FERC, 345 F.2d 917, 928 (1965)(licensees cannot be reasonably expected to accept license terms and conditions if terms threaten economic feasibility of project); Oconto Electric Coop., 56 F.E.R.C. ¶ 61,148, *11-12 (1991)(FERC staff considers economic impact of minimum stream flows, and recommends stream flow that has least effect on licensee’s power revenues).
51 Skykomish River Hydro., 43 F.E.R.C. ¶ 61,123, 61,382 n. 7 (1988).
52 LaFlamme v. FERC, 852 F.2d 389, 402 (9th Cir. 1988).
FERC’s Standard Article 13,\(^{54}\) is contained in all large hydropower project licenses, and governs use of a hydropower project for non-project purposes, including withdrawal of water for municipal supply purposes:

**Article 13.** On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

“The joint use article is a reservation of the Commission’s authority to require the licensee to accommodate a non-project use of its project lands and waters, subject to notice and opportunity for hearing, and with provision for appropriate compensation ....”\(^{55}\) Pursuant to Article 13, the licensee or the proponent of water withdrawal from the licensee’s reservoir may make application to FERC for approval of such use.\(^{56}\) Typically, however, the proponent of the non-project use and the licensee agree in advance as to the particular non-project use, and the licensee makes application to FERC. “In considering applications for water withdrawal, the Commission examines only whether, and to what extent, the proposed withdrawal will adversely affect any other beneficial use of the water and whether the benefits of the proposed use will outweigh those effects.”\(^{57}\) Under Article 13, “the charge [for water withdrawals] is not on the water itself, but rather on the use made of the project reservoir by placing the joint user’s respective structures there.”\(^{58}\) Compensation to the licensee for water

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\(^{54}\) Otherwise known as the “Joint Use” Article.


\(^{56}\) See Id. (“The history of the joint use article makes clear that the Commission always intended that the joint use application could be filed by the licensee or by the joint use proponent.”).


withdrawals from its reservoir is generally an amount constituting the licensee’s loss in power generation or capacity.\(^{59}\) On rare occasions, FERC may order joint use for the purpose of protecting life, health, safety or property without compensation to the licensee.\(^{60}\)

It is important to note that water withdrawals made outside of the boundaries of a FERC hydropower project are not subject to compensation to the licensee. Article 13 applies to withdrawals made from the reservoir itself or from other surface water located with the project’s boundary. Water withdrawals made at locations downstream from a project are considered as part of FERC’s “comprehensive development” standard during the licensing process. As part of a license, FERC can impose streamflow requirements and other conditions in order to protect public uses of the affected river basin, including water supply.\(^{61}\) Licensees bear the cost of conditions imposed in a license pursuant to section 10(a)(1) of the FPA.\(^{62}\) Once FERC has issued a license, the remaining net storage, after downstream flow requirements are met, is available for power generation. Article 13 seeks to protect the licensee’s expectation interest in this reserved storage by requiring compensation.

Through Article 13, FERC retains its ability to modify project operations to take into account future circumstances and deal with unanticipated use conflicts in the context of the public interest.\(^{63}\) FERC has stated that the objective of Article 13 is “to provide such control with respect to policy for future use of project properties for water supply which may enhance optimum utilization of waterway[s] while carefully safeguarding the licensee’s interest in his development.”\(^{64}\)

**Conclusion**

Most of South Carolina’s reservoirs are operated under a hydropower license issued by FERC. Thus, South Carolina water withdrawers are more likely to encounter FERC’s rules governing water withdrawals than the USACE rules governing water withdrawals. Both regulatory schemes require compensation paid to the reservoir owner and/or licensee from the water withdrawer, and both regulatory schemes attempt to balance multiple uses of the reservoirs. Aside from these similarities, obtaining water supply from a USACE reservoir or a FERC-licensed reservoir has its own distinct advantages and disadvantages. Because the State of South Carolina and its political subdivisions do not own most of the reservoirs in South Carolina, the State’s water managers must understand the differing legal context and requirements for tapping into reservoirs for water supply purposes.

\(^{59}\) Id.


\(^{63}\) Trinity River Auth. of Texas, 41 F.E.R.C. ¶ 61,300, 61,791 (1987).