

DPUC

DECLARATORY
RULING



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC UTILITY CONTROL
TEN FRANKLIN SQUARE
NEW BRITAIN, CT 06051

DOCKET NO. 04-02-07 DPUC DECLARATORY RULING CONCERNING "RUN-OF-THE-RIVER HYDROPOWER" AS THAT TERM IS USED IN THE DEFINITIONS OF CLASS I AND CLASS II RENEWABLE ENERGY SOURCE IN C.G. S. §16-1(A)(26) & (27)

September 10, 2004

By the following Commissioners:

Anne C. George
Linda J. Kelly
Jack R. Goldberg

DECISION

DECISION

I. INTRODUCTION

Pursuant to §4-176 of the Connecticut General Statutes (C.G.S.), the Department of Public Utility Control (Department) has, on its own motion, initiated the instant docket to examine "run-of-the-river hydropower"¹ as that term is used in the definitions of Class I and Class II renewable energy sources in C.G.S. §§16-1(a)(26) and (27). C.G.S. §16-1(a), as amended by Public Act 03-135, An Act Concerning Revisions to the Electric Restructuring Legislation, provides in part:

(26) "Class I renewable energy source" means (A) energy derived from ... a run-of-the-river hydropower facility provided such facility has a generating capacity of not more than five megawatts, does not cause an appreciable change in the river flow, and began operation **after** [July 1, 2003].... (Emphasis added.)

(27) "Class II renewable energy source" means (A) energy derived from ... a run-of-the-river hydropower facility provided such facility has a generating capacity of not more than five megawatts, does not cause an appreciable change in the riverflow, and began operation **prior to** [July 1, 2003].... (Emphasis added.)

By statutory definitions, the only difference between a Class I hydropower facility and a Class II hydropower facility is that the former "began operation after [July 1, 2003]" while the latter "began operation prior to [July 1, 2003]." Several issues arose during the Department's administrative process of qualifying hydropower facilities as Class I or II. The Department initiated the instant docket to examine this statute in detail.

By Notice of Scope of Proceeding and Request for Written Comments dated March 2, 2004, the Department offered an opportunity for all interested parties to file written comments. Comments were received by Northeast Utilities Service Company (NUSCO), Great Bay Hydro Corporation (Great Bay Hydro), Farmington River Watershed Association (FRWA), Rivers Alliance of Connecticut (RAC), Trout Unlimited, Environment Northeast (ENE), Connecticut Small Power Producer Association (CSPPA), Ridgewood Renewable Power LLC (Ridgewood), Enel North America, Inc. (ENA), New Hampshire Hydro Associates (NHHA), New England Renewable Power Producers Association (NERPPA), and Boralex, Inc. ISO-New England, Inc. supplied information to the Department in response to interrogatories.

By Notice of Written Exceptions, Briefs and Oral Arguments dated August 20, 2004, the Department announced that it would accept written exceptions and briefs from, and hear oral arguments by, admitted parties and intervenors concerning the proposed decision in the docket noted above, on August 31, 2004, and September 7, 2004, respectively. The Department rescheduled written exceptions and oral arguments for September 8, 2004 and September 10, 2004, respectively. Written

¹ "Run-of-the-river" and "run-of-river" are used interchangeably in the energy industry.

exceptions were received by CSPPA, NERPPA, RAC, McCallum Enterprises I Limited Partnership, ENE, NUSCO, Swift River Company, Inc. (Swift River), and Ridgewood.

II. DEPARTMENT ANALYSIS

A. "FACILITY"

The term "facility" in the statutes has three qualifications in order to be eligible as a Class I or Class II renewable energy source. The "facility" (1) must have a generating capacity of not more than five megawatts, (2) does not cause an appreciable change in the river flow, and (3) began operation after July 1, 2003 for Class I status or prior to July 1, 2003 for Class II status. Before analyzing these qualifications, the Department must first determine the definition of "facility" within the statutes.

NUSCO in its comments urges the Department to interpret the term "facility" to mean "unit." NUSCO contends that it is important to recognize that there are limited sites available to develop water-powered projects and that in order to encourage the maximum practical development of all available hydro resources, generating units should not be excluded from the definition of Class I renewable energy source simply because they might be located together with other generating units at a particular site or dam. NUSCO Written Comments dated 3/26/04, p. 3.

"As with any issue of statutory interpretation, our initial guide is the language of the statute itself." *City of Hartford v. Hartford Municipal Employees Association*, 259 Conn. 251, 263, (2002). The term "facility" is not defined in Public Act No. 03-135, Public Act 03-221 or in C.G.S. §16-1. In the absence of express statutory guidance, we normally "construe words used in statutes and regulations according to their commonly approved usage." *Commission on Human Rights & Opportunities v. Windsor Hall Rest Home*, 232 Conn. 181, 196 (1995); *Carr v. Bridgewater*, 224 Conn. 44, 56-57 (1992). In addition, "technical words and phrases, and such as have acquired a peculiar and appropriate meaning in the law, shall be construed and understood accordingly." C.G.S. §1-1(a).

In the energy industry, the term "facility" commonly refers to an entire electric power generating plant, which may utilize a number of turbine generating units, at a single site and those associated transmission lines connecting the generating plant to either a power transmission system or interconnected primary transmission system or both. In this case, the Department believes the legislature relied on this commonly understood usage and intended for "facility" to mean the entire hydroelectric plant at a particular site.

First, Class I and II renewable energy sources were initially introduced in Public Act 98-28, An Act Concerning Electric Restructuring. In that Act, Class II was defined to include "energy derived from...a hydropower facility, provided such facility has a license issued by the Federal Energy Regulatory Commission, has been exempted from such licensure, is the subject of a license application or notice of intent to seek a license from said commission...." Public Act 98-28, section 1. However, the Federal Energy Regulatory Commission (FERC) does not license each individual turbine generating unit; rather, its licenses are issued to hydroelectric projects. Projects typically include

the dam, powerhouse, impoundment, penstock, and all the turbine generating units located on site. For instance, in a newly-issued license, FERC describes the Indian Pond Hydroelectric Project No. 2142 as follows:

PROJECT DESCRIPTION

The project's principal features consist of: (1) a 2,000-foot-long dam, consisting of (a) a 270-foot-long, 175-foot-high concrete section, (b) a 200-foot-long attached powerhouse section, and (c) an approximately 1,500-foot-long earthen section; (2) a 3,746-acre impoundment with a full pond water surface elevation of 956.0 feet mean sea level; (3) four 6-foot-diameter to 24-foot-diameter penstocks; (4) a powerhouse containing four turbine generating units with a total installed capacity of 76.4 MW; and (5) appurtenant facilities.

FPL Energy Main Hydro, LLC, 106 F.E.R.C. P62,021 (2004). The Indian Pond Project is issued one license, not four licenses for the four turbine generating units located on site. In fact, FERC never issues licenses to individual turbine generating units. It is clear, therefore, that in requiring a hydroelectric facility to have a license issued by FERC, the legislature intended for the term "facility" in Public Act 98-28 to be equivalent to the term "project" as used in FERC's licenses, i.e., the entire hydropower plant and not each individual turbine generating units. Although Public Act 03-135 amended C.G.S. §16-1(a)(27) to eliminate the requirement for a FERC license, the legislature retained the same term "facility." If the legislature had intended for the term "facility" to have different meaning, i.e., each individual turbine generating unit versus entire plant, the Department believes the legislature would have clarified such a significant change and distinction. Since the legislature simply incorporated the same terms in the successive Public Act, the Department concludes that the legislature clearly intended for the term "facility" to mean the entire hydroelectric plant at a particular site.

Second, NUSCO's interpretation would render another part of the statute meaningless. C.G.S. §§16-1(a)(26) and (27) require, in addition to being run-of-the-river, that a hydropower facility "does not cause an appreciable change in the river flow." However, a turbine generating unit cannot by itself cause a change in the riverflow. Swift River describes how a hydroelectric plant can control the river flow, as follows:

... To insure that a plant is operated in the "run-of-the-river" mode, a) the flow through the turbines, plus b) the flow through the fish passage facilities, plus c) the flow discharged as minimum bypass flow required to maintain habitat must combine to just match the rate of inflow into the impoundment. Since the flow through the bypass discharge gate and the fish passage facility are constant flows, the variation of inflow to the impoundment must be made by automatic adjustment of wicket gates on one or more turbines. This "pond level control system" is typically managed automatically by installing pressure transducers in the impoundment to detect small changes in the water surface elevation so that individual turbine's wicket gates are instantaneously adjusted to keep the headpond level at all rates of inflow.

Swift River's Written Exceptions dated 8/30/04, p. 4. As evident by Swift River's description, the flow of a river is influenced by various and several parts of a hydropower plant, i.e., the bypass discharge gate, the fish passage facility, the wicket gates, and the dam. Although individual turbine generating units are adjusted in order for a hydropower plant to operate in run-of-river mode, all other parts of the plant must exist and must work together to make this flow control possible. Without a dam and the various gates, it would be physically impossible for any hydroelectric turbine generator to change the flow of a river. Consequently, if the term "facility" meant turbine generating unit as NUSCO maintains, then the language of the statute that "such facility ...does not cause an appreciable change in the riverflow" would be superfluous. Courts interpreting a statute should not construe certain clauses in a manner that nullifies others. *State v. Walton*, 41 Conn. App. 831, 842 (1996). In construing an act, the Department must make "every part operative and harmonious with every other part insofar as is possible. . . . In addition, the statute must be considered as a whole, with a view toward reconciling its separate parts in order to render a reasonable overall interpretation." *Williams v. Best Cleaners, Inc.*, 237 Conn. 490, 499 (1996) (citations omitted). Accordingly, the Department finds that the only logical and plausible meaning of the term "facility" is the entire hydropower plant at a single site; i.e. the sum of all the individual generation units and associated equipment.

Other states have also followed this use of "facility" in the renewable energy resource context. For instance, in California, for a "facility" to qualify as a repowered facility, all prime generating equipment at such facility must be replaced with new equipment. Equipment is defined to include turbines, boilers, gasifiers, gas digester units, combustion engines, etc. Therefore, California renewable energy resource laws also define "facility" to be the entire plant at a site, not each turbine generating unit. See California Energy Commission, Renewables Portfolio Standard Eligibility Guidebook, March 2004.

Based on the foregoing, the Department does not believe NUSCO's interpretation of the term "facility" is practical, workable or consistent with legislative intent. If such interpretation were to be adopted, not only would other parts of the statute become meaningless, but it would open doors for many to attempt to undermine the statute, and in the long-term reduce the public's faith in the Connecticut Renewable Portfolio Standard (RPS). Accordingly, the Department finds that as used in C.G.S. §§16-1(a)(26) and (27), the term "facility" shall refer to the entire hydroelectric plant at a single site, including all the turbine generating units used at such site. As a result, for instance, the Indian Pond Hydroelectric Project No. 2142 mentioned previously in this section is considered to be one "facility" because all the generation units are located together at a single site,; and therefore none of its four turbine generating units individually could qualify for either Class I or II under C.G.S. §§16-1(a)(26) and (27) because the facility's generating capacity is 76.4 MW.

B. FIVE MEGAWATT RESTRICTION

Having defined "facility" to mean the entire hydroelectric plant, including all of the individual generation units and associated equipment, the Department now must address the first qualification in the statutes. C.G.S. §§16-1(a)(26) and (27) provide, respectively, that Class I and Class II renewable energy source include "a run-of-the-

river hydropower facility provided such facility has a generating capacity of not more than five megawatts....” Accordingly, facilities with a generating capacity of more than 5 MW cannot be afforded Class I or Class II status. However, there is some debate concerning how the five megawatt limit should be applied.

NUSCO urges the Department to interpret the five megawatt limit to mean the average annual output of a facility and not its nameplate capacity². According to NUSCO, run-of-river hydroelectric facilities operate only when the resource is available, and is further limited by other environmental considerations. The net effect of such limitations is that hydroelectric facilities typically operate at far below their nameplate capacity, typically between 30 and 50 percent of it. Therefore, interpreting the 5 MW limit to mean the nameplate rating would cut the Class I energy from a run-of-river facility by over 50%. NUSCO proposes a facility's five year annual average output be used to calculate its capacity. NUSCO Written Comments dated 3/26/04, pp. 3-4.

The Department believes NUSCO's proposal to be contrary to the statutes, which clearly limit the capacity of hydroelectric facilities to 5 MW. 'Capacity' is defined as the maximum amount of that can be contained or produced.³ In the electric industry, a generating unit's capacity is used in the same manner; namely, the maximum instantaneous output that a unit is capable of achieving. As discussed further in Section II.D.(3), hydroelectric production significantly varies according to rainfall and the streamflow. The electricity production of a hydroelectric facility rises and falls throughout the year, and at times it may approach the capacity of the generator(s) at the site. If NUSCO's recommendation were implemented, facilities with generator nameplate capacities significantly in excess of 5 MW would qualify as Class I or II, and the output from such facilities could be, at times, significantly in excess of 5 MW. This is clearly in opposition to the statutes, which limit the capacity of hydroelectric units to 5 MW.

There may be instances where a hydroelectric facility is limited in output by factors other than the nameplate capacity of its generator. In such instances, the Department will consider what the capacity of the facility should be on a case-by-case basis. However, in all such cases, the Department will limit its consideration to the maximum output that the facility possibly can physically achieve, consistent with the legislative intent as well as the Webster Dictionary definition of capacity.

Great Bay Hydro, FRWA and RAC, and Trout Unlimited suggest that, when a Class II facility is upgraded, the five megawatt limit should be applied against the incremental generation at a site.⁴ Therefore, a portion of the output would remain Class II, and the incremental output, up to 5 MW, would be Class I. Great Bay Hydro Written

² "Nameplate capacity" means the maximum electrical generating output (in MW electrical) that a generator can sustain over a specified period of time when not restricted by seasonal or other deratings as measured in accordance with the United States Department of Energy standards. The nameplate capacity is specified by the manufacturer, and is typically displayed on a nameplate physically attached to the generator housing.

³ Webster's II New College Dictionary, Houghton Mifflin Company, Copyright 1999, 1995.

⁴ See below, Section II.D.(3) for discussion on incremental generation.

Comments dated 3/26/04, pp. 4-5; FRWA and RAC Written Comments dated 3/26/04; Trout Unlimited Written Comments dated March 26, 2004, p. 2.

ENE and CSPPA state that the five megawatt limit should apply to the entire facility, which includes the entire site. Therefore, if a facility increases its capacity, it could be considered for Class I status provided the total capacity at the site does not exceed 5 MW. ENE Written Comments dated 3/25/04, pp. 1-2; CSPPA Written Comments dated March 26, 2004, p. 1.

The Department believes that the statutory five-megawatt limit should be applied against the entire nameplate capacity of the facility, not against the amount of the capacity added to the facility. As the Department determined in the previous section, the term "facility" in C.G.S. §§16-1(a)(26) and (27) referred to the sum of all generating units at a site. Therefore, the Department believes that, the phrase "...provided such facility has a generating capacity of not more than five megawatts..." clearly is intended to limit the maximum capacity at the entire site to 5 MW. Accordingly, hydroelectric sites larger than 5 MW cannot be afforded Class I or II status to its output or any portion thereof.

There could be instances where a hydroelectric site comprised of hydroelectric units with generator nameplate capacities less than 5 MW upgrades its facilities, and achieves a new rating greater than 5 MW. This could occur by several means, including addition of new generators or the upgrade of existing generators and associated facilities. In such instances, the statutes clearly disqualify the facility from Class I or II, and, therefore, the facility will no longer be eligible for that status, even if it was eligible prior to the upgrade.

Ridgewood argues that owners of hydroelectric facilities with greater than 5 MW of generation may reduce the generation capacity of their facilities in order to obtain the benefits of the Connecticut RPS. The Department believes such conduct is totally unacceptable. If the Department determines that a hydroelectric facility owner has derated its facility to reduce its capacity below 5 MW to meet the Class I or II definition, the Department will remove such facility from Class I or II, as appropriate.

C. "RUN-OF-THE-RIVER"

The second qualification in the statutes for a "facility" is that it "does not cause an appreciable change in river flow." This qualification is similar to the initial statutory requirement that the facility be a "run-of-the-river" hydropower facility. The legislative history of C.G.S. §16-1 contains no meaningful discussion of these terms. Rivers are naturally variable environments to which their biota are adapted, so the run-of-the-river requirement must be a reflection of the legislature's underlying intent to limit eligibility for Class I and Class II status for hydroelectric power to those facilities that match inflows to the reservoirs as closely as is reasonably possible so that fluctuations in outflow are not substantially more extreme or more frequent than would otherwise occur naturally.

Based on the statutory language, it appears that the legislature intended to allow only those hydropower facilities that meet certain environmental standards. In determining which facilities meet the "run-of-the-river" requirement in the statute, the

Department receives guidance from other entities that review such facilities. According to FERC, which regulates most of the hydroelectric projects in the United States, "run-of-river" operation means "no utilization of headpond storage and that outflow from the facility is equal to inflow to the pond on an instantaneous basis." Citizens Utilities Company, 105 F.E.R.C. P62,119 (2003). FERC provides:

"A true, or instantaneous, run-of-river project is one which does not operate out of storage and, therefore, does not artificially regulate stream flows below the project's tailrace. Outflow from the project is equal to inflow of the project's impoundment on an instantaneous basis. The flow regime below the project is essentially the river's natural regime, except in special circumstances, such as following the reinstallation of flashboards and project shutdowns. Under those circumstances, a change in storage contents is necessary, and outflow is reduced below inflow for a period. Another circumstance is the flow transition after an idle station is brought on line, and initially flows downstream exceed inflow." *Id.* n. 34.

A similar definition of run-of-river has also been recognized by the Connecticut Superior Court and Department of Environmental Protection: "Run-of-river mode ... means that neither the impoundment level nor the river flow rate downstream of the project would be affected because the water used in the turbine would be released back into the water. In other words, the rate of water entering the project would equal the rate of water leaving it on an instantaneous basis." See Summit Hydropower v. Commission of Environmental Protection, 192 Conn. Super. LEXIS 2177 (1992).

Based on the reasons set forth in this section, the Department supports FERC's definition of run-of-river and believes that this definition can be used to achieve the underlying objective of C.G.S. § 16-1. Furthermore, the Department believes that FERC's run-of-river definition can be applied to meet the qualification of "no appreciable change in river flow." The Department is confident that it can largely rely on FERC, which through its licensing authority establishes mandatory operating conditions for hydropower projects, which may include run-of-river requirements, and monitors each project's compliance with its required operating conditions.

The Department believes it makes sense to take advantage of FERC's existing expertise because almost all hydroelectric projects are currently regulated by FERC. Pursuant to section 23(b)(1) of the Federal Power Act (FPA), a non-federal hydroelectric project must (unless it has a still-valid pre-1920 federal permit) be licensed if it: (a) is located on a navigable stream of the United States; (b) occupies lands of the United States; (c) utilizes surplus water or waterpower from a Government dam; or (d) is located on a body of water over which Congress has Commerce Clause jurisdiction, project construction has occurred on or after August 26, 1935, and the project affects the interests of interstate or foreign commerce.⁵ 16 U.S.C. § 817(1). In 1935, Congress amended Part I of the FPA to change from voluntary to mandatory the filing

⁵ In certain cases, hydroelectric projects may qualify for an exemption from licensing. Those receiving exemptions are exempt from the requirements of Part I of the FPA, but are still subject to certain FERC conditions, as well as the mandatory terms and conditions set by federal and state fish and wildlife agencies. 18 C.F.R. §4.90-4.96 (2002).

with the FERC of a developer's declaration of intent to construct a dam or other project works across, along, over, or in any non-navigable stream under Congress's Commerce Clause authority. Thus, if FERC found that such project would affect the interests of interstate or foreign commerce, the project would need a license if it were constructed after 1935. Specifically, FERC has found and the courts have confirmed that when a project is connected to an interstate electricity grid, it affects the interests of interstate or foreign commerce. See Habersham Mills v. FERC, 976 F.2d 1381 (11th Cir. 1992); Puget Sound Hydro LLC, 106 F.E.R.C. P62,229; 2004 F.E.R.C. LEXIS 560 (2004). Therefore, at the very least, nearly all hydroelectric facilities that seek Class I or II Renewable Certification from the Department will be connected to an interstate electricity grid, and hence, will most likely need to be licensed by FERC. If the Department relies on the FERC's licensing process, the Department would likely need to conduct further examination of only those few facilities that were built prior to 1935.

Also, the Department believes that relying on FERC's expertise will promote and further the legislature's environmental goals, since FERC is required in its licensing process to respect and incorporate the requirements and conditions imposed by numerous federal and state environmental agencies. For instance, section 10(j)(1) of the FPA requires FERC, when issuing a license, to include license conditions for the protection, mitigation, and enhancement of fish and wildlife resources based upon the recommendations of the Federal and state fish and wildlife agencies, submitted pursuant to the Fish and Wildlife Coordination Act, 16 U.S.C. § 661 *et seq.*, to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project, unless it believes that the recommendations are inconsistent with Part I of the FPA or other applicable laws. 16 U.S.C. § 803(j)(1). In those instances where FERC believes an inconsistency exists, section 10(j)(2) of the FPA requires FERC and the agencies to attempt to resolve such inconsistencies, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies. 16 U.S.C. § 803(j)(2). If FERC still does not adopt a recommendation, it must explain how the recommendation is inconsistent with Part I of the FPA or other applicable law and how the conditions imposed by FERC adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

Similarly, under section 401(a)(1) of the Clean Water Act (CWA), FERC may not issue a license for a hydroelectric project unless the state water quality certifying agency either has issued a water quality certification (WQC) for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed 1 year. 33 U.S.C. §1341(a)(1). Section 401(d) of the CWA provides that state certification shall become a condition of any federal license or permit that is issued. 33 U.S.C. §1341(d). Only a reviewing court can revise or delete these conditions. See American Rivers v. FERC, 129 F.3d 99 (D.C. Cir. 1997). Typically, a WQC imposes numerous conditions, many of which are relating to: (1) reservoir and flow management with requirements on impoundment fluctuations and minimum flow releases; (2) operating plan; (3) deviations from prescribed operating conditions; and (4) monitoring plan for reservoir and flow management.⁶ In many

⁶ For example, in a WQC for the Housatonic Project in Connecticut, the State Department of Environmental Protection imposed several conditions requiring operation in run-of-river mode.

states, a hydroelectric project must be operated in accordance with a conservation flow and reservoir level management schedule, and a project operator must notify the water quality certifying agency within 24 hours of any deviation from the schedule and within 10 days submit a written report describing the event (including the extent of the deviation), explaining the reasons, identifying ways to avoid future occurrences, and proposing mitigative measures. The operator is typically also required to file a report of all deviations from the conservation flow and reservoir level management schedules annually with the water quality certifying agency. Moreover, as part of the monitoring plan for reservoir and flow management, the operator must file a plan with the water quality certifying agency for monitoring instantaneous reservoir levels, inflow, and outflow at all facilities. The plan typically must include provisions for the flow data to be available on a near real-time basis.

In the same way, section 10(a)(2)(A) of the FPA requires FERC to consider the extent to which a hydroelectric project is consistent with federal and state comprehensive plans for improving, developing, or conserving waterways affected by the project. 16 U.S.C. § 803(a)(2)(A). Section 4(e) and 10(a)(1) of the FPA require FERC to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. 16 U.S.C. §§ 797(e) and 803(a)(1). Any license issued shall be such as in the FERC's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. A FERC decision to license a project, and the terms and conditions included therein, reflect such consideration.

Also, under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), FERC cannot issue a license for a hydroelectric project within or affecting a state's coastal zone, unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's Coastal Zone Management program. 16 U.S.C. § 1456(c)(3)(A). Additionally, FERC will also consult with the U.S. Fish and Wildlife Service to assure compliance with section 7(a)(2) of the Endangered Species Act (ESA), 16 U.S.C. § 1536(a), which requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally-listed endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of such species.

Not only is FERC required to consult with and accommodate various federal and state environmental agencies in its licensing process, but a FERC license typically will also provide details regarding the requirements, if any, of run-of-river operation. If a facility is operated in run-of-river mode, FERC will require the licensee to file for approval, a plan to monitor the run-of-river operation. A run-of-river monitoring and compliance plan is usually prepared by the licensee in consultation with the appropriate state and federal resource agencies such as the U.S. Geological Survey, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the state environmental agencies such as the state Department of Natural Resources, Department of Ecology, Department of Environmental Protection and Department of Fish and Wildlife.

Based on the foregoing, the Department finds that FERC's examination of environmental issues in its licensure of hydroelectric projects is significant and extensive. Additionally, run-of-river operation is strictly monitored by both FERC and various federal and state agencies. The Department is confident that the comprehensive scope of a FERC-approved run-of-river compliance plan would effectively and satisfactorily protect and safeguard the rivers and environment as intended and desired by the legislature in enacting C.G.S. §16-1. As such, the Department finds that in order for a hydroelectric facility to qualify as Class I or II renewable energy source under C.G.S. §§16-1(a)(26) and (27), the facility must show a current FERC license or exemption that requires the facility to operate in run-of-river mode.⁷ In addition, a hydroelectric facility can qualify as Class I or II only to the extent that its FERC license or exemption requires run-of-river operation. Hence, if a hydroelectric project is required under its license or exemption to operate in run-of-river mode for only a portion of the year, the facility will be eligible for Class I or II status only for that specified time period. A facility that is not required to operate in run-of-river mode but does so voluntarily may also qualify as Class I or II, provided that it can show an amended FERC license or exemption providing for the run-of-river operation.

If a hydroelectric facility is not regulated by FERC, but is seeking a Class I or II status, the facility must first show a FERC order or a court decision stating that FERC has no jurisdiction, or has declined to exercise jurisdiction, over such facility. The Department will then examine these facilities strictly on a case-by-case basis. In determining whether a facility actually operates in run-of-river mode, the Department will closely follow a typical FERC-approved run-of-river monitoring and compliance plan and review many of the same factors that FERC would scrutinize in its licensing process.

Accordingly, the Department may require an unregulated facility to submit a WQC or any equivalent report issued by the appropriate agency. The Department may require the facility to prepare in consultation with the appropriate state and federal resource agencies a plan similar to a FERC-approved run-of-river monitoring and compliance plan. The Department may also require the facility operator to (1) show that it has installed, calibrated, and maintained a staff gage in the project impoundment with the prescribed operating levels clearly marked and automatic water level sensors to record continuous headwater and tailwater elevation; and (2) submit all: (a) project log records, (b) records of all outages in the project log, including the date and time, cause, operator response time to the site, duration until run-of-river discharge is restored, (c) methods used to restore in-stream flow, (d) records of turbine operations, including turbine start-up and shut-down times, (e) hourly records of headwater and tailwater elevations, (f) hourly records of flow releases from the powerhouse and spillway, and (g) records documenting frequency of reporting, emergency procedures, procedures during power outages, and maintenance schedules. In conclusion, the Department will require and review any factors and information necessary to confirm and ensure that inflow

⁷ As with licensed projects, run-of-river requirements may be imposed on exempted projects by the U.S. Fish and Wildlife Service and certain state agencies (such as the state Fish and Wildlife Commission), which have mandatory conditioning authority over exempted projects. See 16 U.S.C. §2705, incorporating by reference Section 30(c) of the FPA, 16 U.S.C. §823a; see also American Hydro Power Company, 73 F.E.R.C. P61,094 (1995); Carl and Elaine Hitchcock, 70 F.E.R.C. P62,047 (1995).

equals outflow instantaneously at any "run-of-river" hydroelectric facility certified as Class I or II renewable energy resource under C.G.S. §§16-1(a)(26) and (27).

D. "BEGAN OPERATION"

The third qualification under C.G.S. §16-1 limits eligibility for Class I status to facilities that "began operation" after July 1, 2003, and for Class II status to facilities that "began operation" prior to that date. The "began operation" date is clear in the context of a newly constructed facility. However, recommendations among the parties vary in determining whether an existing unit can change its characteristics to qualify for Class I status. The parties suggest three different scenarios that could reset the "began operation" date. The first scenario involves an existing facility that has been shutdown for an extended period of time or that has been repowered or refurbished. The second scenario involves an existing facility that changes its mode of operation to "run-of-river" mode. Finally, a third scenario involves an existing facility that adds new incremental generation capacity after the July 1, 2003 date.

1. Shutdown, Abandoned, Repowered or Refurbished Facilities

Several parties suggested that an existing facility receive a new "began operation" date when it has been shutdown or abandoned for a certain period of time. NHHA and NERPPA believe that a facility should be shutdown at least one year, a full water cycle, in order to obtain a new operation date. NERPPA stated that it seems the legislative intent was not to provide the benefits of Class I to facilities that have been shutdown for extended periods of time. However, NERPPA's belief is that the law was designed to provide an incentive, such as Class I eligibility, to facilities in order to support renewables that would not otherwise run. NERPPA written comments dated 3/26/04, p. 4. NHHA and NERPPA state that a minimum reinvestment or refurbishment requirement is not necessary, provided a shutdown period of at least one year is established. NHHA written comments dated 3/26/04, p. 5; NERPPA written comments dated 3/26/04, p. 4.

CSPPA and Great Bay Hydro stated that a facility that has been repowered or changed operating characteristics after being out of commercial operation for at least one year and/or significant capital improvements were made to the facilities' equipment should be allowed to 'reset' its operation date. CSPPA defines 'began operation' as a commercial operation that starts after being continuously out of commercial operation for at least one year, or a facility that provides documentation showing that capital improvements were made to the facilities' equipment at least equal to 50% of the value of the equipment prior to the improvements. CSPPA believes this wording, along with the existing wording in C.G.S. §16-1, is all that is necessary for administering any request for Class I designation. CSPPA written comments dated 3/26/04, p. 1. Great Bay Hydro proposes that any generating unit shut down for more than one year and requiring repair and/or replacement of components at a cost greater than 50% of its book value be considered to have begun operations on the date that it returns to service. Great Bay Hydro written comments dated 3/25/04, p. 4.

FRWA and ENA both advise the Department to rely on FERC's existing expertise and licensing records to determine the date of first operation. FRWA and Trout

Unlimited are not taking a position on how to define 'began operation' after July 1, 2003, but support the institution of a new facility at an existing dam as long as it received a license from FERC post-1990. FRWA written comments dated 3/26/04, p. 1; Trout Unlimited written comments dated 3/26/04, p. 1-2. ENA also suggests the operation date as shown in FERC's records would provide the most reasonable means to distinguish between Class I and Class II facilities, at least as a baseline condition. FERC maintains detailed records of each project's construction and operational history, including the date of first operation. ENA written comments dated 3/26/04, p. 2.

Ridgewood, Boralex, ENE, Trout Unlimited and ENA believe that it is in the State's best interest to encourage the most efficient use of its renewable energy resources, therefore, any project improved with new, more efficient units should qualify for Class I status and be allowed to "reset" its operation date. According to these commenters, the duration of any such shutdown of a facility is irrelevant and it should be the improved efficiency that trigger a new began operation date. ENA written comments dated 3/26/04, p. 2. Ridgewood contends that permitting facilities to withdraw from service, to waiting out the necessary time period and then to return to service with little or no capital expenditure would only encourage those small off-line facilities to withhold from service to take advantage of this loophole. Ridgewood written comments dated 3/26/04, p. 5.

In examining the statutory requirements concerning renewable energy programs, the Department must consider the statutory scheme as a whole, giving meaning to every section, and assuming no word or phrase to be superfluous. Where, as here, more than one statute is involved, we presume that the legislature intended them to be read together to create a harmonious body of law; *Vartuli v. Sotire*, 192 Conn. 353, 362 (1984); *McLaughlin Ford, Inc. v. Ford Motor Co.*, 192 Conn. 558, 563 n.7 (1984); and we construe the statutes, if possible, to avoid conflict between them. *State v. West*, 192 Conn. 488, 494 (1984); *Blue Cross & Blue Shield of Connecticut, Inc. v. Mike*, 184 Conn. 352, 362 (1981). C.G.S. §16-1 is a definitional statute that must be read in concert with C.G.S. §16-245a and other statutes that create the renewable hydroelectric programs.

For the purposes of C.G.S. §16-1, the Department finds that the "began operation" date for an existing facility with existing generation means the first date of commercial operation as a run-of-river facility. Accordingly, the Department will rely on a hydroelectric facility's documentation from FERC to determine a facility's began operation date. The Department believes it makes sense to rely on FERC's existing expertise since FERC maintains detailed records of each project's construction and operational history, including the date of first operation. If a particular facility is not licensed by FERC, the Department will determine the "operation date" as the date when a facility first began its commercial operation as a run-of-river facility. Should an existing facility request a new began operation date and is not licensed by FERC, the Department will examine these facilities strictly on a case-by-case basis consistent with the qualifications discussed below to establish its began operation date.

Several commenters suggested that a facility should be given a new began operation date if significant improvements have been made to the facility's equipment. Because the statute clearly distinguishes between facilities that began operations

before and after July 1, 2003, the Department finds that improvements to a facility's equipment alone would not comply with the language of the statute. However, the Department believes that the language of the statute supports a finding that a facility that began operations prior to July 1, 2003, is a "new" facility, and therefore, would get a new began operations date, if it meets two requirements: (a) the facility has been abandoned, and (b) sufficient capital improvements have been made to render it a "new" facility that began operations after July 1, 2003. The Department believes this would encourage the refurbishing and maintenance of existing facilities that would otherwise remain neglected and abandoned. This would also be consistent with the legislature's intent to promote the availability of additional renewable energy resources in our region.

(a) "Abandonment"

"Abandonment" is a question of fact and the Department will make such determination strictly on a case-by-case basis. The Department may rely on FERC's records to determine whether an existing facility has been abandoned. Not only does FERC maintain detailed records of each project's construction and operational history, but FERC also has a whole body of law regarding abandonment. Abandonment has been found when project owners have vacated the premises and made no effort to prevent the project from falling into disrepair and decay. See Aquenergy Systems, Inc. v. FERC, 857 F.2d 227 (1988); Hodgson & Sons, Inc. v. FERC, 49 F.3d 822 (1995); Puget Sound Hydro, 106 F.E.R.C. P62,229 (2004). Thus, the Department may consider a FERC's determination of abandonment or a surrender of a FERC license to be evidence of abandonment.

Besides relying on FERC's determination, the Department may also determine abandonment based on its own finding that the facility's "owners have vacated the premises and made no effort to prevent the project from falling into disrepair and decay." In making such determination, the Department will examine many factors, including evidence of the owner's intention to effectuate a permanent shutdown, evidence of the facility's disrepair and decay, and the length of time that a facility has been out of commercial operation. The Department will not consider any facility that has been shut down for less than two consecutive years. The Department believes the minimum threshold of a two-year shut-down period effectively prevents facility operators from gaming the system by shutting down and restarting their facilities in order to qualify for Class I designation. Since the statute came into effect in 2003, the Department will waive the two-year shutdown period for facilities that were shut down prior to July 1, 2003. The Department will also waive the two-year shut down period for facilities that are suddenly destroyed by acts beyond the control of the facility's owners.

(b) Required capital improvements

Once the Department has established that a facility has been abandoned or destroyed, the Department will also determine whether sufficient capital improvements have been made to render the abandoned facility a "new" facility. Again, this is also an issue of fact and the Department will make such determination strictly on a case-by-case basis. The Department will examine all evidence of capital investments in equipment and associated structures, including required demonstration of efficiency

upgrades and improvements in the facility's design. However, the Department will examine only facilities where the owner has made capital improvements of 50% or more of the total value of the equipment and associated structures at the facility (exclusive of the value of the land). Given the long life of hydro equipment, the Department believes this minimum capital investment requirement would ensure the facility is essentially "new."

In conclusion, in order to obtain a new began operations date for purposes of C.G.S. §§16-1(26) and (27), an existing hydro facility is required to show that it has essentially become a "new" facility after July 1, 2003. The Department will make such determine strictly on a case-by-case basis, and no one factor is conclusive. A facility must show that it has been abandoned or destroyed, rebuilt and began operations after July 1, 2003. At minimum, however, such facility must have been abandoned for at least two consecutive years (with limited exceptions set forth in this section) and the facility's owners must demonstrate a capital investment in equipment and associated structures for any refurbishment of greater than 50% of the total value of the equipment and associated structures at the facility.

2. Change of Mode of Operation to Run-of-River

Several commenters suggested that the Department consider a new "began operation" date for a facility that changes its mode of operation to run-of-river mode after the July 1, 2003 date. NUSCO written comments dated March 26, 2004 p.6-7; Great Bay Hydro written comments dated March 25, 2004 p. 3. The "began operation" language in the statute modifies the run-of-the-river facility, therefore, the Department believes that it is reasonable to construe the language as meaning the date when the facility began operation in run-of-river mode.

As in the situation of a truly abandoned facility, the Department may consider a new began operation date if a facility should change its mode of operation from store and release operation to run-of-the-river mode. As such, the facility would have to "begin operation" as a run-of-river facility after July 1, 2003. Again, FERC obtains such records of operational changes and characteristics and may issue an amended license stating a facility's new run-of-the-river operation date. The Department will require a facility to provide its FERC documentation stating the date it began its run-of-the-river operation. If a facility is not regulated by FERC, the Department will examine these facilities strictly on a case-by-case basis to institute a new operation date.

3. Increased Nameplate Capacity

Several parties stated that capacity additions to existing hydroelectric facilities should qualify as Class I provided the addition began operation after July 1, 2003. However, specific recommendations regarding how the additions should be recognized vary among the commenters.

Trout Unlimited, FRWA and RAC state that a Class II facility that is renovated after July 1, 2003 should be allowed to have its incremental capacity qualify as Class I, up to 5 MW. These commenters also state that environmental improvements, such as the construction or renovation of a fish ladder or the provision of additional flows in the

facility's bypass channel, should be considered as additional factors in the designation of incremental capacity as Class I. Trout Unlimited Written Comments dated 3/26/04, p. 2; FRWA and RAC Written Comments dated 3/26/04, pp. 1 and 2.

Great Bay Hydro states that all incremental generation achieved at an existing Class II facility after July 1, 2003 should qualify as Class I, provided the incremental capacity of the renovated unit is less than 5 MW. Great Bay Hydro Written Comments dated 3/26/04, pp. 4-5.

NHHA and NERPPA state that increased hydroelectric output resulting from incremental capacity additions after July 1, 2003 should qualify as Class I. NHHA proposes that an operator should be required to establish a historical baseline for normal generation, and that any generation in excess of that baseline would be considered as Class I. NHHA Written Comments dated 3/25/04, p. 6; NERPPA Written Comments dated 3/26/04, p. 5.

CSPPA, Ridgewood, ENA and NUSCO state that the entire output of a facility upgraded after July 1, 2003 should qualify for Class I if the facility does not have a total capacity greater than 5 MW. CSPPA states that it is virtually impossible to distinguish the incremental output of new generation added to a facility, unless it is separately metered. According to CSPPA, the NEPOOL-GIS system cannot separate renewable energy credits (RECs) from a single facility into two classifications. CSPPA Written Comments dated 3/26/04, pp. 1-2; Ridgewood Written Comments dated 3/26/04, p. 6; ENA Written Comments dated 3/26/04, p. 2.

C.G.S. §16-1 clearly allows any hydroelectric facilities that began operation as run-of-river facilities after July 1, 2003 to qualify for Class I. By adding the "began operation" date, the legislature intended to distinguish between new and existing hydroelectric resources. The intent of the statute appears to promote the addition of run-of-river hydroelectric resources in our region after July 1, 2003. As several commenters noted there are many barriers to building completely new run-of-river facilities in the region. NUSCO Written Comments dated 3/26/04, p. 8; Trout Unlimited Written Comments dated 3/26/04 p. 1-2. Therefore, the Department believes it is reasonable to afford Class I status to a portion of an existing facility's output, provided the increased capacity was added after July 1, 2003 and the total nameplate capacity of the facility does not exceed five megawatts. However, there are several different methods of accounting for the Class I output.

CSPPA states that new capacity could be separately metered. The Department believes separately metering Class I output could encourage gaming by the operators, who could simply divert flow from non-Class I units to Class I units. This could result in Class I credit for facilities where no additional generation has been produced at the facility, which would be a perverse result and not in accordance with the intent of C.G.S. §16-1.

Two commenters (NHHA and NERPPA) suggest accounting for Class I incremental generation by setting a baseline output for each unit based on its historical generation. Any output in excess of the baseline would then be considered Class I. It should be noted that, as discussed by many commenters, hydroelectric output can vary

tremendously from season to season and year to year. The historical baseline method for hydroelectric facilities can be imprecise and could result in substantial output derived from non-Class I facilities credited as Class I during times when output is high, and disqualify output from Class I facilities when output is low. Therefore, the Department finds that this method is unacceptable for run-of-river facilities.

While the historical averaging method is unacceptable for these facilities, it is appropriate, as the parties note, to determine a method of apportioning the amount of new generation from a run-of-river facility that should receive Class I status. The Department will use a method for segregating Class I output from facilities that it will refer to as the proration method. This method will use the ratio of the nameplate capacity of the Class I generating unit, divided by the sum of the nameplate capacities of all units at the facility. The resulting fraction will be applied to the output of the unit, and the result of this mathematical operation will be allowed as Class I RECs. This method will produce a result that will closely approximate the proportion of the output of a facility that is attributable to the Class I facilities. The Department will work through the appropriate NEPOOL GIS committees and with Automated Power Exchange, Inc. (APX) to ensure that the NEPOOL GIS is able to be modified, if necessary, to accommodate the prorational accounting method proposed in this decision.

For example, an existing Class II, run-of-river hydroelectric facility has three generating units with a total rating of 3 MW. The facility adds a fourth generating unit with a rating of 1 MW after July 1, 2003. The facility still has a total output less than five megawatts, which qualifies the incremental output for Class I. The portion of the output of the facility which will be designated as Class I is 1 MW (the incremental capacity) divided by $1 + 3$ (the total capacity), which equates to 25% of the output.

Class I status would also be given to generation output from units that have been improved or upgraded to have increased nameplate capacity after July 1, 2003. For example, an existing Class II, run-of-river hydroelectric facility has three generating units, each with a nameplate capacity of 1 MW. Instead of adding a fourth unit, the station upgrades its existing three units after July 1, 2003, such that each unit's new nameplate capacity is now 1.5 MW. The facility still has a total output less than five megawatts, which qualifies the incremental output for Class I. The portion of the output of the facility which will be designated as Class I is 0.5×3 (the incremental capacity) divided by $1.5 + 3$ (the total capacity), which equates to 33% of the output.

As described above, several parties state that the entire output from an existing facility should qualify for Class I status if any portion of the facility was renovated to add new run-of-river capacity after July 1, 2003. The Department believes this is clearly in opposition to the run-of-the-river section of C.G.S. §16-1, which seeks to promote "new" renewable resources. The Department will only allow electric output associated with the new capacity added to an existing facility to qualify as a Class I renewable energy source. In verifying eligibility for Class I status, the Department will require a FERC amended license showing that the incremental capacity was added after the July 1, 2003 date. If a facility is not licensed by FERC or the incremental capacity is not large enough to require an amendment to the license, the Department will require documentation and will examine these facilities strictly on a case-by-case basis to determine eligibility.

The Department notes that it is possible that facilities approved as Class I may be removed from service for extended periods or even retired. When the Department approves a facility as Class I, it expects the owner of the facility to notify the Department in the event of any substantial changes in the status of the Class I facility. This requirement is no different than what is imposed on other types of renewable energy generators certified by the Department.

E. POSSIBLE EXEMPTIONS

The Department recognizes that the hydroelectric industry is very heterogeneous. Each site is unique and has its own history and configuration, and it is not realistic to expect that this Decision is capable of addressing every conceivable instance where a hydroelectric facility will be qualified for Class I. Accordingly, the Department will consider exemptions to the requirements of this Decision on a case-by-case basis, where good cause for such consideration exists and where exemptions do not conflict with the statutes or with the intent of this Decision.

III. CONCLUSION

In this Decision, the Department makes the following findings and conclusions concerning C.G.S. §§16-1(a)(26) and (27):

1. "Facility" refers to an entire hydroelectric plant at a single site rather than a turbine generating unit within a hydroelectric plant;
2. The "generating capacity of not more than five megawatts" refers to a hydroelectric facility's nameplate capacity, not its actual or average generation output. Furthermore, this five-megawatt limit is applied against the entire facility, not against the size of the addition to the facility.
3. In order to qualify as "run-of-the-river," a hydroelectric facility must show a current FERC license or exemption that requires the facility to operate in run-of-river mode. In addition, a facility can qualify as a Class I or II renewable energy source only to the extent that its FERC license or exemption requires run-of-river operation. Hydroelectric facilities that are not regulated by FERC will be required to show a FERC order or a court decision stating that FERC has no jurisdiction, or has declined to exercise jurisdiction, over such facility. The Department will examine these facilities strictly on a case-by-case basis and will consider many of the same factors that FERC would scrutinize in its licensing process.
4. "Began Operation" means (1) the date an existing facility with existing generation began commercial operation as shown in documentation from FERC; (2) the new date given to an abandoned or destroyed facility that comes back into operation as shown in its documentation from FERC or as determined by the Department; (3) the date upon which a facility changes operation from store and release to run-of-river as shown in documentation from FERC; or (4) the new date that incremental generation is in operation at an existing facility as shown in its documentation from FERC. For those facilities not licensed by FERC, the Department will require documentation and will examine these facilities strictly on a case-by-case basis.
5. For existing facilities that added new capacity after July 1, 2003, only a portion of its capacity that is attributable to the additional capacity may be eligible for Class I status.
6. The Department will consider exemptions to the requirements of this Decision on a case-by-case basis where good cause exists and where exemptions do not conflict with the statutes or with the intent of this Decision.

DOCKET NO. 04-02-07 DPUC DECLARATORY RULING CONCERNING "RUN-OF-THE-RIVER HYDROPOWER" AS THAT TERM IS USED IN THE DEFINITIONS OF CLASS I AND CLASS II RENEWABLE ENERGY SOURCE IN C.G. S. §16-1(A)(26) & (27)

This Decision is adopted by the following Commissioners:

Anne C. George

Linda J. Kelly

Jack R. Goldberg

CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Department of Public Utility Control, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.

Louise E. Rickard
Acting Executive Secretary
Department of Public Utility Control

September 13, 2004
Date